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United States Department
of Justice

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Environmental Crimes

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Introduction

Vanita Gupta

Associate Attorney General

Tackling climate change is now more urgent than ever. In the first days of his Administration, President Biden issued two executive orders dedicating the entire federal government to avoiding climate change's most catastrophic impacts. As I write this introduction, leaders around the globe are preparing to meet in Scotland to accelerate efforts to reach the goals set by the 2016 Paris Agreement. The Department—in particular the Environment and Natural Resources Division (ENRD)—is committed to doing its part in the government-wide effort to address the climate crisis.

The focus of this edition of the *Journal of Federal Law and Practice* is on the myriad ways that the Department identifies and prosecutes those who contribute to climate change by violating pollution control and wildlife protection statutes. The articles in this issue describe the prosecution of an array of Clean Air Act violations, including Volkswagen's use of a defeat device that allowed the release of nitrogen oxide—an indirect greenhouse gas that contributes to ozone production—at 35 times the permissible U.S. emissions level; the creation and sale of after-market defeat devices; the smuggling of ozone depleting substances; and fraud in Congress' incentive-based renewable fuels program. Other articles describe prosecutions under comparatively recent statutory provisions. For example, as outlined in this issue, the 2008 Lacey Act Amendments enabled the federal prosecution of a company for importing hardwood flooring manufactured in China from timber illegally harvested in Far East Russia. The Act to Prevent Pollution from Ships' limits on sulfur emissions from commercial vessels led to the first prosecution of a motor tanker burning non-compliant fuel in the U.S. Caribbean Sea Emissions Control Area.

The Department's work in this area is not limited to criminal prosecutions. Civil enforcement remains a critical tool in addressing climate change, so this edition also includes a primer on the Department's use of civil enforcement to bring about positive climate change impacts.

As the Attorney General has recognized, communities of color, low-income communities, and tribal communities often bear the highest burden of the harm caused by climate change. The Department is

therefore committed to helping deliver environmental justice to communities across America. That is why, included in this issue, is an article advocating for one possible blueprint for identifying, prosecuting, and remedying the environmental inequities that burden disadvantaged areas.

This edition also touches on other important aspects of the Department's environmental work. One article notes that, as wind and solar energy facilities increase in number, scope, and importance, the impacts on wildlife will also increase. The article discusses how the law requires consideration of wildlife conservation while pursuing renewable energy. Another entry discusses how the Department uses corporate monitors in large environmental cases to ensure compliance with environmental regulations.

This issue of the *Journal* continues ENRD's longstanding commitment to close collaboration with the U.S. Attorney community. These articles, drawing from a deep well of institutional knowledge and experience, provide timely and valuable insights and guidance on how federal prosecutors can help tackle national and global issues from within their own districts.

I want to thank the many authors from across the federal government for their contributions to this effort. I also want to thank the Executive Office for U.S. Attorneys and the editors of the *Journal* for devoting this edition to climate change and environmental justice. ENRD welcomes interest in these issues and encourages all Assistant U.S. Attorneys to become involved in the effort to protect the natural resources that are vital to the health and well-being of our citizens, our nation, and our world. Please feel free to contact Deborah Harris, Chief of the Environmental Crimes Section, or Tom Mariani, Chief of the Environmental Enforcement Section, for further information.

How Enforcing U.S. Laws Against Illegal Logging Can Mitigate the Impacts of Climate Change

Patrick Duggan
Trial Attorney
Environmental Crimes Section

Ryan Connors
Trial Attorney
Environmental Crimes Section

Early human history is often delineated by the materials used during given periods: the Stone Age, the Bronze Age, the Iron Age. Yet there are some who argue that humans have always existed in an age dominated not by metal, but by wood.¹ From stone adzes with wooden handles to wooden water wheels powering grain mills, all the way up through modern homes framed with dimensional lumber, timber has always been an indispensable natural resource. Wood still permeates every aspect of our lives, predominately through manufactured products such as wood-framed chairs, bamboo cooking utensils, oak flooring, and a wood-veneer desk with a federal criminal code book on it. Though wood is theoretically a renewable resource, our current consumption levels mean that it is only renewable in practice if countries properly manage their forests. Thus far, the decrease in worldwide forest cover, estimated to be 46% of pre-historic levels,² has caused flooding, poverty, migration of people and animals, increased temperatures, and more unintended consequences than would (or should) fit in a legal article. One increasingly visible consequence is the impact of deforestation on our climate. Forestry and climate change may seem odd topics for a legal publication, but the reality is that federal attorneys in each of our 94 districts have existing tools to help tackle climate change through the prosecution of illegal logging cases.

¹ See generally ROLAND ENNOS, THE AGE OF WOOD: OUR MOST USEFUL MATERIAL AND THE CONSTRUCTION OF CIVILIZATION (2020).

² T.W. Crowther et al., *Mapping Tree Density at a Global Scale*, 525 NATURE 201, 201 (2015).

Before discussing prosecutorial solutions, it is important to define the problem. The World Resources Institute (WRI) recently estimated that deforestation in tropical countries caused approximately 4.8 gigatons of carbon emissions per year between 2015 and 2017, roughly equivalent to the lifetime emissions of 85 million cars.³ If tropical deforestation were a country, it would emit the third-most carbon-equivalent gasses in the world—behind only China and the United States—and more than the entire European Union combined.⁴ Illegal logging is a subset of deforestation, and depending on the country, a subset that represents the majority. Estimates vary widely, but commonly accepted figures are that 15% to 30% of global timber trade is sourced from illegally logged timber, which balloons to 50% to 90% in tropical countries.⁵ The global value of illegal logging is between \$51 billion and \$152 billion annually, which is a wide range, but it is alarming at either end.⁶

The impact of deforestation can seem simple when condensed into sound-bite statistics, but the impact of greenhouse gas emissions is far more complex and helps shine a light on why addressing illegal deforestation is important. High school biology students can explain that trees absorb carbon dioxide through photosynthesis and convert that carbon to sugars, which are, in turn, stored in the structure of the tree and used to create new growth. Yet not all trees, and not all forests, conduct this transformation equally. Poorly managed forests, degraded or fragmented forests, and plantations store far less carbon than “intact” forests.⁷ This is largely due to the total volume of biomass, which is far larger in an intact forest due to larger trees, multiple canopy levels, and symbiosis between innumerable organisms within a natural ecosystem.⁸ These pristine forests are also

³ David Gibbs et al., *By the Numbers: The Value of Tropical Forests in the Climate Change Equation*, WORLD RES. INST. (Oct. 4, 2018), <https://www.wri.org/insights/numbers-value-tropical-forests-climate-change-equation>.

⁴ *Id.*

⁵ CONG. RSCH. SERV., IF11114, INTERNATIONAL ILLEGAL LOGGING: BACKGROUND AND ISSUES (2019) [hereinafter ILLEGAL LOGGING CRS].

⁶ *Id.*

⁷ Anand M. Osuri et al. *Greater Stability of Carbon Capture in Species-Rich Natural Forests Compared to Species-Poor Plantations*, 15 ENV'T. RSCH. LETTERS no. 3, 2020.

⁸ Xiaojuan Liu et al. *Tree Species Richness Increases Ecosystem Carbon Storage in Subtropical Forests*, 286 PROC. B 1, 2 (2018).

far less susceptible to devastating forest fires, a phenomenon that releases massive amounts of stored carbon and reduces the ability of a forest canopy to create cooler, wetter local climates.⁹ Intact forests also create a far richer soil, which, in turn, stores more carbon over an even longer horizon.¹⁰ Intact tropical forests are the *crème de la crème* due to larger trees, longer growing seasons, and greater biodiversity. The problem is that these intact tropical forests are the places that illegal logging is most likely to occur.

The world's greatest tropical forests are found in the Amazon, the Congo Basin, and Southeast Asia.¹¹ These areas happen to also have extremely high rates of deforestation,¹² which makes sense. Illegal loggers prefer the largest trees because they are the most valuable, and those large, old trees occur in pristine areas. It is also helpful to be in remote forests when operating heavy machinery in an area where it is prohibited. Many countries within these regions suffer from poor governance, insufficient funding of law enforcement, corruption, and high rates of poverty, which make them perfect targets for illegal exploitation. Knowingly or unknowingly, the United States is a part of this equation each time we buy paper made from an Indonesian rainforest, chests lined with Spanish cedar from the Amazon, and shelves made with African mahogany veneer. The United States also suffers financially: The American Forest and Paper Association estimated that illegal logging depressed world prices for forest products by 7% to 16% and that illegally sourced timber “significantly affects the ability of U.S. producers to export” sawn wood and wood panels.¹³

Not all illegal deforestation, however, falls within the existing U.S. legal framework. U.S. laws are focused on trade—wood and wood products that started as illegally logged timber, falsely declared timber, protected species, or otherwise illegal goods that enter international or interstate commerce in a way that triggers U.S. jurisdiction. When developers burn a forest in Indonesia and replace it

⁹ PETER WOOD, INTACT FORESTS, SAFE COMMUNITIES 2–3 (2021).

¹⁰ Xiaojuan, *supra* note 8, at 6–7.

¹¹ FOOD AND AGRIC. ORG. & UNITED NATIONS ENV'T PROGRAMME, THE STATE OF THE WORLD'S FORESTS: FORESTS, BIODIVERSITY AND PEOPLE (2020).

¹² ILLEGAL LOGGING CRS, *supra* note 5.

¹³ SENECA CREEK ASSOCS., LLC & WOOD RES. INT'L, LLC, ILLEGAL LOGGING AND GLOBAL WOOD MARKETS: THE COMPETITIVE IMPACTS ON THE U.S. WOOD PRODUCTS INDUSTRY 24 (2004).

with a palm oil plantation, or a private landowner in the Amazon converts forestland to grassland for grazing, U.S. prosecutors are largely powerless. This is not to minimize the power we do have, but to emphasize it. We cannot have an impact in all arenas, so it is even more critical to exercise the influence granted by Congress when and where we can. Given the volume of U.S. timber production and imports—we are both the largest producer of forest products and the largest consumer of imported forest products¹⁴—U.S. law enforcement is in a powerful and unique position to shift the global market towards legality from both the demand and supply sides. It is possible that U.S. prosecutors will have more tools to combat climate change in the future, but right now, we have the methods to reduce climate change by fighting illegal logging.

The Department of Justice (Department) already possesses a powerful tool to combat illegal wood entering the U.S. market. Congress originally passed the Lacey Act in 1900 to prevent wildlife trafficking.¹⁵ The goal was to fill a gap in law enforcement: At the time, officers in consumer states could not enforce the laws criminalizing wildlife poaching in supply states. Congress made it a federal crime to buy or sell wildlife in interstate commerce that was procured illegally under state laws. In 1935, the Lacey Act was amended, including the expansion of underlying offenses to wildlife and fish that were illegal under foreign laws, thereby allowing U.S. authorities to address wildlife trafficking on a global scale.¹⁶ In 1981, the Lacey Act underwent another overhaul, strengthening penalties, adding prohibited conduct, and providing greater enforcement power to federal wildlife agents.¹⁷ Congress was clear on the purpose of these amendments—they were needed to curb the “massive illegal trade in fish and wildlife” perpetrated by “well organized” criminal operations that ignored “grim environmental consequences” in the name of huge profits.¹⁸ And though the illegal wildlife trade has not disappeared, the rise of enormous international logging operations and local outfits

¹⁴ DELTON ALDERMAN, UNITED STATES FOREST PRODUCTS ANNUAL MARKET REVIEW AND PROSPECTS, 2015–2021 (2020).

¹⁵ Lacey Act, ch. 553, 31 Stat. 187 (1900); 16 U.S.C. §§ 3372, 3373.

¹⁶ See Act of June 15, 1935, Pub. L. No. 74-148, § 201, 49 Stat. 378, 380.

¹⁷ See Lacey Act Amendments of 1981, Pub. L. No. 97-79, 95 Stat. 1073.

¹⁸ S. Rep. No. 97-123, at 1 (1981); see also Robert S. Anderson, *The Lacey Act: America's Premier Weapon in the Fight Against Unlawful Wildlife Trafficking*, 16 PUB. LAND L. REV. 27, 49 (1995).

that supply that international trade, has moved illegal logging into the same position that Congress previously addressed for wildlife in 1981. Thus, in 2008, Congress acted again to amend the Lacey Act, this time to include plants, providing the Department broad civil and criminal enforcement options to address the illegal trade in wood products. Only the Department and authorized federal agencies can initiate Lacey Act proceedings, as there is no private right of action.

The Lacey Act's civil remedies include detaining or rejecting wood coming into the United States.¹⁹ Additionally, the Department can seize the wood and bring forfeiture and penalty proceedings. The Lacey Act's criminal provisions revolve around false labeling and trafficking.²⁰ The 2008 amendments created a new import requirement—the PPQ-505 declaration—which requires that importers declare the country of harvest, the scientific genus and species, and the value of wood and wood products. Like any good, importers must honestly declare wood shipments into the United States.

The Lacey Act prohibits persons and corporations from knowingly making false labels for wood with inaccurate information regarding the species, the country of export, or the quantity.²¹ Importers may falsely label wood to avoid tariffs or reduce scrutiny into high-risk species or countries of origin. The trafficking portion prohibits imports of wood that were somehow illegally harvested, transported, transformed, or sold before entering the United States.²² The criminal penalties include up to five years' imprisonment and a fine of \$250,000 or twice the illegal-gotten gain or loss.²³ The law applies equally to interstate commerce, though most violations occur at shipping ports when the wood arrives in the country. The Department often brings Lacey Act charges in conjunction with classic Title 18 offenses, such as conspiracy, smuggling, and money laundering.²⁴ Misdemeanor Lacey Act charges arise when a person or corporation fails to exercise due care regarding the legality of the wood.

How does wood become illegal? It begins with the species, where the source country has placed restrictions on which trees may be felled or

¹⁹ 16 U.S.C. § 3374.

²⁰ 16 U.S.C. § 3372.

²¹ 16 U.S.C. § 3372(d).

²² 16 U.S.C. § 3372(a).

²³ 16 U.S.C. § 3373(d).

²⁴ 18 U.S.C. §§ 371, 545, 1956.

sold. These species are typically chosen due to chronic overharvest, leading to an endangered designation. They may also be culturally significant or play a critical purpose, such as resisting erosion or desertification. Examples of protected species include rosewood, mahogany, teak, and mangrove.²⁵ These classifications often coincide with species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).²⁶ The United States and 182 other countries have adopted the CITES treaty, which, among other things, creates import and export permit requirements. Wood products that have missing, fraudulent, or corrupted permits become illegal.²⁷

Surprisingly, most illegal wood does not involve protected species. Instead, it is wood that was harvested illegally. Source countries allocate forestry concessions, which dictate the rules for logging in an area. These parameters can include where logging may occur, which trees can be felled, the quantity, the time of year, or the type of equipment that may be used. From a forest management perspective, concessions are allocated in a way that should minimize forest cover loss by selective logging and requiring that no more than a sustainable amount of timber is removed from any given area. The concession process, when properly conducted, should ensure that logging does not exacerbate climate impacts. Illegal logging follows no such grand plan focused on continual future forest use or climate benefits. Deforestation in areas critical to climate change, such as the Amazon or Congo Basin, frequently occurs in violation of concession requirements.²⁸ If the wood is subsequently transported to the United States, there is likely a Lacey Act violation. Given the immense volume of wood imported to the United States—\$1.77 billion in May 2021 of lumber and rough wood alone²⁹—there is little doubt that illegal wood reaches the U.S. market. Other common schemes include fraudulent transportation permits that accompany wood from

²⁵ 16 U.S.C. § 1531.

²⁶ *Checklist of CITES Species*, <https://checklist.cites.org> (last visited Nov. 5, 2021)

²⁷ 16 U.S.C. § 3372(d).

²⁸ WILLIAM RHODES, ET AL., *ILLEGAL LOGGING: A MARKET-BASED ANALYSIS OF TRAFFICKING IN ILLEGAL TIMBER* (2006).

²⁹ *United States Imports—Lumber & Wood in the Rough (Census Basis)*, TRADING ECONOMICS, <https://tradingeconomics.com/united-states/imports-of-lumber-wood-in-the-rough> (last visited Aug. 18, 2021).

forest to factory or port, violations of wood export bans, or high value applications like veneer or furniture being declared as low value exports.

The Lacey Act's severe penalties encourage companies selling wood products to comply with both U.S. law and those in the source, transit, and manufacturing countries. This in turn reduces illegal deforestation. Besides punitive measures towards the perpetrators, reducing illegal deforestation has surprisingly broad benefits consistent with the aims of the U.S. Sentencing Guidelines. Enforcement can provide large specific and general deterrent effects and bring transparency to the wood products industry. Illegal logging typically evades taxes—the Indonesian Corruption Eradication Commission estimated that Indonesia loses between \$5 billion and \$6.8 billion annually from illegal and unreported timber production.³⁰ Many modern concessions have a reforestation component, which further mitigates climate change. There is a growing trend in Africa to include social requirements in concession allocation, such as local school and infrastructure building, ensuring that international timber companies provide some benefit to local populations when harvesting legally. Ideally, the pressure of U.S. legal sanctions along with ethical business practices will push the logging sector into compliance.

The harvest, transportation, and manufacturing processes vary from country to country. U.S. investigators must familiarize themselves with these regulations to know what to look for when a shipment arrives. For example, timber may be properly harvested but is later mixed with illegal wood at a sawmill or factory. The resulting flooring or furniture now contains illegal wood. Non-governmental organizations, academia, and the media provide critical data about the supply chains that can help investigators determine where there is a high probability of illegality.

If an importer falsely labels a wood shipment, U.S. authorities need only prove the falsehood and *mens rea*; the Lacey Act criminalizes knowing behavior, except the misdemeanor failure to exercise due care standard.³¹ Forensic laboratories can typically reveal wood's true genus or species and are increasingly effective at showing likely

³⁰ KOMISI PEMBERANTASAN KORUPSI, PREVENTING STATE LOSSES IN INDONESIA'S FORESTRY SECTOR at iii (2015).

³¹ 16 U.S.C § 3373(d).

geographic origin.³² Proving trafficking via illegality in the source country requires international coordination. The Lacey Act is one of the rare U.S. laws that provides an enforcement mechanism for foreign law. Department attorneys must ultimately prove how that law was violated for a jury or a federal judge. The Department and its partner agencies have attachés or embassy personnel who are critical in gathering this evidence. Defendants may obtain competing certifications, as corruption can be prevalent in the forestry industry. As a result, Lacey Act investigations can unearth Foreign Corrupt Practices Act violations.

The large size of most wood products is an advantage in Lacey Act investigations. Importers bringing in containers of illegal wood cannot hide it, so they must give it the illusion of legality. A common quandary in these cases is what to do with the physical wood. It is expensive to store containers of dubious wood at a port or transport it for donation to non-profit organizations. The Department has been reluctant to allow illegal wood to enter the stream of commerce, even if the importer admits wrongdoing and faces sanctions. Wood excluded from entry to the United States is at risk of being sold elsewhere, defeating the programmatic purpose. Finally, destroying the wood can have environmental and carbon-release consequences that are counterproductive to combatting climate change.

In addition to fines and imprisonment, Department attorneys can seek to include compliance plans at sentencing and in plea or deferred-prosecution agreements. The plans can include audit requirements or commitments to increase monitoring to detect illegal wood. The plans can serve as an example of exemplary industry practices for other corporations in the business of importing wood who were not involved in a specific investigation.

Restitution is also a key component in illegal logging cases where the source country is deprived of a critical natural resource. The Lacey Act permits courts to order defendants to pay restitution to the country where the illegal logging occurred.³³ This can provide much-needed funds to increase reforestation and enforcement or to mitigate the damage to soil and water. Restitution programs can have a force

³² *E.g.* Eleanor Dormontt, et al., *Forensic Timber Identification: It's Time to Integrate Disciplines to Combat Illegal Logging*, 191 *BIOLOGICAL CONSERVATION* 790 (2015).

³³ 18 U.S.C. § 3663.

multiplication effect, as illegal logging typically occurs in the same regions as other conservation crimes, such as wildlife trafficking and illegal mining, which have their own impact on climate change. The impacts of reforestation on climate change are immense. Forests retain the potential to expand by 25%, which would “negate about 20 years of human-produced carbon emissions at the current rate, or about half of all carbon emitted by humans since 1960.”³⁴

The ubiquitous nature of wood products in the United States provides ample opportunity for prosecutors and investigators in every single federal district. It would be hard to find a district that has no hardwood flooring retailers, no furniture stores, and no plywood suppliers. For each category of products, at least three provisions of the Lacey Act, mentioned above, (as well as other Title 18 offenses) could apply. But the sheer volume of potential investigations can be overwhelming, and thus, initial targeting can be helpful. The United States has institutional targeting capabilities, such as the Customs and Border Protection’s National Targeting Center, agency intelligence offices, and the Department of Agriculture’s Animal and Plant Health Inspection Service (USDA-APHIS) Lacey Act team.

Individual prosecutors, analysts, and investigators can also do simple legwork independently to get an idea of the most likely targets. As a first line of inquiry, look at the country of harvest, contained on USDA-APHIS PPQ-505 forms. Was the wood harvested from high-risk countries, such as Russia, Peru, Brazil, Myanmar, the Democratic Republic of Congo, or Cameroon? Are there existing nongovernmental reports, documentaries, or exposés providing information regarding the illegal schemes or level of illegal logging in those countries? If so, a few additional questions can point to simple fraud. Does the declared species even grow in the country of harvest? Is the value accurately reflected on declarations? Is the species protected in the country of harvest or under CITES? Does the source country have a ban on wood exports? These questions are not limited to districts with ports because retail sales of illegally logged timber are equally enforceable as prohibited imports. Jurisdiction can reach even further when considering Lacey Act false labeling—because a false label in a retail

³⁴ Alan Buis, *Examining the Viability of Planting Trees to Help Mitigate Climate Change*, NAT’L AERONAUTICS AND SPACE ASS’N (2019), <https://climate.nasa.gov/news/2927/examining-the-viability-of-planting-trees-to-help-mitigate-climate-change/>.

store or in an online description is equally enforceable (and with equal punishment) as Lacey Act trafficking. Lacey Act offenses are continuing crimes each time the wood is transported, bought, or sold. This article is not meant to be a primer on how to prosecute a case, but it instead ensures that investigators and prosecutors do not read this and believe that illegal logging cases can only be brought in locations with major ports or substantial domestic forests. Imported wood products are everywhere, and therefore, law enforcement everywhere can take action.

Even though most investigations will focus on imported wood, there are cases with domestic origins. These tend to involve high-value wood that is illegally harvested from pristine forests in areas such as Alaska, the Pacific Northwest, or protected national parks, refuges, and monuments. For example, there was recently a trial in the Western District of Washington where the defendants were accused of stealing valuable big leaf maple wood from Olympic National Forest in 2018.³⁵ A jury convicted the lead defendant on charges that included theft and depredation of public property and trafficking in unlawfully harvested timber. The case also had components dealing with forest fires, tree DNA, and restitution for damage to the forest.

Department enforcement of the Lacey Act is also a form of consumer protection. You cannot detect illegal wood by looking at it. Besides knowing some high-risk source countries, a consumer buying furniture, plywood, or drumsticks is likely to be frustrated even after spending time researching the supply chain. As wood is frequently mislabeled, a climate-change conscious consumer may have no chance of knowing what it is they are buying or where it came from. A 2019 study found that 62% of wood products were mislabeled, and “even to highly trained wood anatomists, differentiating wood species can be incredibly difficult and most would agree that without significant and accurate metadata associated with the wood sample, identifying beyond genus can be impossible.”³⁶

Like all prosecutions, the goals here are more than merely catching and convicting. Future deterrence is one of the major drivers of any

³⁵ Indictment at 6, *United States v. Justin Wilke*, 19-cr-5364 (W.D. Wash. Aug. 28, 2019), ECF No. 1.

³⁶ Maite Knorr-Evans & Meaghan Parker-Forney, *Buyer Beware: One Study Finds 62% of Wood Products Mislabeled*, WORLD RES. INST. (Sept 3, 2019), <https://www.wri.org/insights/buyer-beware-one-study-finds-62-wood-products-mislabeled>.

justice prerogative. To promote general deterrence, prosecutions will need to shift industry practices. General deterrence in this arena is unique because the deterrence will only be effective if it reaches all the way down the supply chain to the initial harvest. In addition, the wood products industry is full of legitimate, legal actors connected by trade publications, trade groups, newsletters, and common suppliers. That provides an amplifier for actions taken by the government—within weeks of a public prosecution, industry groups and NGOs around the world have shared the information, provided news alerts to their members, and given advice to potential future violators. This network of legitimate actors can be utilized to its greatest potential when prosecutors include robust environmental compliance plans as a keystone of probationary periods.

A compliance plan is a way to provide government-sponsored guidance while still adhering to the free-market concepts baked into the Lacey Act. Ensuring that imports are all legal is no easy task, and thus, there are no criminal penalties if an importer conducts sufficient due diligence and still winds up with illegal products. But the Lacey Act, unlike similar European Union initiatives to curb illegal logging, does not proscribe exactly how a regulated entity must ensure that their products are in compliance. The entity simply must ensure that it is not dealing in illegal products—but until that entity is investigated in some manner, the government has minimal control over the means of compliance. While this allows organizations to tailor their efforts to their specific business model, it provides little guidance on what is sufficient. An environmental compliance plan provides a government-approved methodology that shows what enforcement agencies see as sufficient due care.

Compliance plans are the way that U.S. enforcement can help to continuously move industry towards a legal and, therefore, more climate friendly method of conducting business. In 2016, Lumber Liquidators, then the largest specialty retailer of wood flooring products in the United States, was convicted of importing illegally harvested and falsely labeled timber from the Russian Far East and Myanmar.³⁷ The five-year compliance plan, which was independently audited and successfully completed, set forth what was considered

³⁷ Statement of Facts, *United States v. Lumber Liquidators, Inc.*, No.15-cr-126 (E.D. Va. Oct. 15, 2015), ECF No. 14; Plea Agreement, *Lumber Liquidators, Inc.*, No. 15-cr-126, ECF No. 11.

sufficient compliance for a large company. Through this mechanism, prosecutors were able to mandate specific actions, such as on-the-ground inspections of suppliers, mandatory translation of foreign forestry documents, recorded approvals of legality verification, periodic reviews of public reports of overseas illegal logging, as well as specifically acknowledging that assurances from suppliers are not sufficient due diligence. Within weeks, the largest industry trade group, the International Wood Products Association (IWPA), was providing free training for its members focused on how to achieve the standards set forth in the Lumber Liquidators compliance plan. Slowly but surely, the standards in compliance plans become industry standards, and the United States can force industry change through demand-side requirements.

The Lacey Act applies when companies or individuals import wood into the United States that was illegally harvested. For example, in September 2021, Global Plywood and Lumber Trading, LLC, (GPL) pleaded guilty to a Lacey Act violation for failing to exercise due care when importing hardwood from the Peruvian Amazon.³⁸ GPL admitted that, in 2015, it purchased 1,135 cubic meters of wood blanks from Peru worth about \$613,182. The company was aware of reports of illegal logging and fraud in Peru and nevertheless imported the wood to Houston without checking with Peruvian authorities about the legality of the required transportation authorizations.³⁹ An audit by Peru's forest supervision department found that about 92% of the wood had been illegally harvested or transported.

The court sentenced the company to pay \$200,000 in restitution to the Peruvian Ministry of the Environment and a \$5,000 fine. The Hon. Amy Berman Jackson remarked at sentencing how the company's actions impacted the trade industry and environment:

It's simply not sufficient to rely on the representations of suppliers, given the risk that it would be receiving illegally-harvested materials, if it's buying low-cost materials, and given the significant environmental impact that can have when timber is harvested illegally in Peru and elsewhere throughout South America. And,

³⁸ Memorandum of Plea Agreement, *United States v. Glob. Plywood and Lumber Trading, LLC*, No. 20-cr-70 (D.D.C. Sept. 3, 2021), ECF No. 12.

³⁹ Statement of Facts, *Glob. Plywood and Lumber Trading, LLC*, No. 20-cr-70, ECF No. 13.

frankly, the rainforest in South America affects the whole world.

...

... All of that reflects the extremely serious nature of what took place and should serve as a deterrent to others that the importer bears some responsibility to exercise due care.⁴⁰

The company had declared bankruptcy since importing the wood. As a result, the court did not impose a compliance plan or a period of probation.

There are usually one or more corporate defendants in an illegal wood case, a potential combination of the harvest, exporting, brokerage, importing, or wholesale company. The breadth of an appropriate compliance plan will typically follow the Department's Principles of Federal Prosecution of Business Organizations.⁴¹ A limited compliance plan may be sufficient when a business self-reported the violation, there was low market value or no protected species involved, or the conduct was limited a few bad actors. DOJ can seek a more extensive plan where there the knowledge was widespread amongst management, there were repeated or prior offenses, or if the company facilitated corruption.

As stated at the outset, illegal logging cases are not going to end climate change. Nor will any one Ponzi-scheme conviction stop financial fraud. But climate change is happening now with illegal logging as a significant contributor. The U.S. market plays a role in illegal logging, and the Department has tools that will help mitigate the U.S. impact, while encouraging a multi-billion dollar industry towards legal practices. For the bulk of the past century, the United States has been a leader in environmental enforcement, and federal prosecutors and investigators can continue that initiative through illegal logging prosecutions.

⁴⁰ Plea Hearing Transcript at 25–26, *Glob. Plywood and Lumber Trading, LLC*, No. 20-cr-70.

⁴¹ JUSTICE MANUAL 9-28.000.

About the Authors

Patrick Duggan has been a prosecutor in the Department's Environmental Crimes Section since 2010, where he handles cases involving illegal logging, wildlife trafficking, and pollution crimes. He is a graduate of Clarkson University, Duke University's Nicholas School of the Environment, and Duke University Law School.

Ryan Connors has been a prosecutor in the Department's Environmental Crimes Section since 2014, where he focuses on illegal logging and wildlife trafficking investigations. He was previously an assistant district attorney in Manhattan for nine years. He is a graduate of Dartmouth College and NYU School of Law.

Commercial Vessel Air Emissions: Climate Change Impacts and Enforcement

Kenneth E. Nelson
Senior Trial Attorney
Environmental Crimes Section

Stephen Da Ponte
Trial Attorney
Environmental Crimes Section

I. Scope of vessel emissions

For centuries, humankind has set upon the vast oceans to conduct trade between nations. In the modern era, 90% of this trade is conducted on commercial ships,¹ which can be up to 1,300 feet long, displace 160,000 tons of ocean water, and be powered by a 25,000-horsepower engine. The amount of fuel required to power these vessels can exceed 100 metric tons per day (approximately 26,417 gallons). Unlike the gasoline used in passenger cars, however, the 90,000 commercial vessels traversing the sea use a variety of fuels, such as heavy fuel oil (HFO), marine gas oil, and marine diesel oil, all of which produce much higher levels of pollution than passenger vehicles.

This article addresses three issues: (1) how much commercial shipping contributes to the release of greenhouse gases; (2) what impact the current international regulatory scheme will have on curbing these emissions; and (3) what enforcement mechanisms exist to ensure compliance with the regulatory scheme.

In 2012, the shipping industry (international, domestic, and fishing) produced 977 million tons of greenhouse gas (GHG) emissions.²

¹ *Shipping and World Trade: World Seaborne Trade*, INT'L CHAMBER OF SHIPPING, <https://www.ics-shipping.org/shipping-fact/shipping-and-world-trade-world-seaborne-trade/> (last visited Nov. 1, 2021); V. Eyring et al., *Emissions From International Shipping: 1. The last 50 years*, 110 J. GEOPHYSICAL RSCH.: ATMOSPHERES D17.

² INT'L MAR. ORG. FOURTH IMO GREENHOUSE GAS STUDY 2020: EXECUTIVE SUMMARY (2021).

By 2018, that amount *increased* 9.6% to 1,056 million tons,³ comprising 2.89% of all global GHG emissions that year.⁴ For perspective, the total anthropogenic emission of GHG in 2018 was 36,573 million tons,⁵ of which 5,870 million tons were produced by the United States.⁶ Stated differently, the 2018 GHG emissions from the shipping industry (1,056 million tons) was equivalent to all of the GHG emissions produced by passenger vehicles and light-duty trucks in the United States (1,096 million tons) combined.⁷ If global shipping were its own country, it would be the sixth largest contributor of GHG.⁸ It is anticipated that, by 2050, GHG emissions from vessels will increase up to 130% over 2008 levels.⁹

The vessels that contribute the most to shipping's GHG emissions are bulk carriers, chemical tankers, container ships, general cargo ships, liquefied natural gas tankers, and oil tankers.¹⁰ None of this should come as a surprise considering the size of these vessels' engines and the types of fuels they use.

For example, HFO was the dominant fuel used in commercial shipping in 2018, accounting for 79% of total fuel consumed.¹¹ You might wonder what HFO is: "When all the more refined products have been extracted from Crude Oil, the stickier, tar-like substance with a viscosity similar to a thick black peanut butter is left behind as HFO."¹²

³ *Id.*

⁴ *Id.*

⁵ *Id.*

⁶ ENV'T PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2019, at ES-8 (2021).

⁷ ENV'T PROT. AGENCY, FAST FACTS: U.S. TRANSPORTATION SECTOR GREENHOUSE GAS EMISSIONS 1990–2019 (2019).

⁸ David Shukman, Global Shipping in 'Historic' Climate Deal, BBC (Apr. 13, 2018), <https://www.bbc.com/news/science-environment-43759923>.

⁹ INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2019, *supra* note 6, at 3.

¹⁰ FOURTH IMO GREENHOUSE GAS STUDY 2020; EXECUTIVE SUMMARY, *supra* note 2, at 6.

¹¹ *Id.* at 7.

¹² Nishan Degnarain, *What Is Heavy Fuel Oil, And Why Is It So Controversial? Five Killer Facts*, FORBES (Aug. 14, 2020), <https://www.forbes.com/sites/nishandegnarain/2020/08/14/what-is-heavy-fuel-oil-and-why-is-it-so-controversial-five-killer-facts/?sh=4783e5f274c0> (cleaned up).

So long as these types of fuels are used, it is reasonable to conclude that the shipping industry will remain a significant source of GHG emissions.

II. International regulatory scheme

The International Maritime Organization (IMO) is a London-based international consortium of countries that functions as a “United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.”¹³ IMO created the framework for regulating emissions from commercial vessels: the International Convention for the Prevention of Pollution from Ships, commonly referred to as MARPOL.

On April 13, 2018, IMO adopted resolution MEPC.304(72),¹⁴ setting forth IMO’s vision of GHG emission reductions through 2050.¹⁵ “IMO remains committed to reducing GHG emissions from international shipping and, as a matter of urgency, aims to phase them out as soon as possible in this century.”¹⁶ Although that language is somewhat vague, there are concrete regulatory requirements that can, and do, have an impact on precursor and GHG emissions. For example, IMO established an energy efficiency design index (EEDI) to reduce GHG emissions by improving technical design and vessel operation.

MARPOL consists of six technical annexes, each of which deals with a different form of vessel pollution. Annex VI sets forth the requirements that govern air emissions. These requirements regulate the emission of nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter, and ozone-depleting substances (ODS). According to MARPOL:

Emissions of NO_x, SO_x and particulate matter from ocean-going ships contribute to ambient concentrations of air pollution in cities and coastal areas around the

¹³ *Introduction to IMO*, INT’L MAR. ORG.

<https://www.imo.org/en/About/Pages/Default.aspx> (last visited Nov. 1, 2021).

¹⁴ MEPC stands for the Marine Environmental Protection Committee of the IMO.

¹⁵ *Greenhouse Gas Emissions*, INT’L MAR. ORG.,

<https://www.imo.org/en/OurWork/Environment/Pages/GHG-Emissions.aspx> (last visited Nov. 1, 2021).

¹⁶ Res. MEPC.304(72) (Apr. 13, 2018).

world. Adverse public health and environmental effects associated with air pollution include premature mortality, cardiopulmonary disease, lung cancer, chronic respiratory ailments, acidification and eutrophication.¹⁷

In November 2020, IMO proposed draft amendments to Annex VI, which were then adopted in June 2021.¹⁸ These amendments add further requirements to the energy efficiency measures in MARPOL Annex VI. Current requirements for new ships are based on the EEDI, which means they must be built and designed to be more energy efficient than the baseline, and for all other ships, the requirements are based on the mandatory Ship Energy Efficiency Management Plan (SEEMP). SEEMP makes operators have a plan to improve energy efficiency through a variety of ship-specific measures.¹⁹ The EEDI and SEEMP are described in more detail below.

The U.S. Environmental Protection Agency (EPA) considers four primary gases to be greenhouse gases: (1) carbon dioxide (CO₂); (2) methane (CH₄); (3) nitrous oxide (N₂O); and (4) fluorinated gases (which include chlorofluorocarbons, hydrofluorocarbons, and halons).²⁰ Also relevant to this article are two compounds that EPA characterizes as precursor GHGs: nitrogen oxides (NO_x) and sulfur oxides (SO_x).²¹ “These gases are not direct greenhouse gases but indirectly affect terrestrial radiation absorption by influencing the formation and destruction of tropospheric and stratospheric

¹⁷ Res. MEPC.176(58) at 38 (Oct. 10, 2008); *see also* International Convention for the Prevention of Pollution from Ships, annex VI, app. III, 1.2 [hereinafter MARPOL].

¹⁸ *Marine Environment Protection Committee (MEPC 76), 10 to 17 June 2021 (Remote Session)*, INT’L MAR. ORG. <https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MEPC76meetingsummary.aspx> (last visited Nov. 23, 2021).

¹⁹ *IMO Environment Committee Approves Amendments to Cut Ship Emissions*, INT’L MAR. ORG. (Nov. 18, 2020), <https://www.imo.org/en/MediaCentre/PressBriefings/pages/42-MEPC-short-term-measure.aspx>.

²⁰ *Overview of Greenhouse Gases*, ENV’T PROT. AGENCY, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (updated Oct. 12, 2021)).

²¹ INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2019, *supra* note 6, at ES-8.

ozone”²² EPA also considers SO_x a precursor GHG, and it encompasses a group of sulfur oxides, including sulfur dioxide (SO₂).²³ “Sulfur-containing compounds emitted into the atmosphere tend to exert a negative radiative forcing,” that is, they have deleterious effects on the ability of the atmosphere to cool.²⁴ Taken together, SO_x and NO_x are potent atmospheric pollutants that extensively contribute to acid rain,²⁵ which can be extremely harmful to forests, lakes, and streams. Therefore, decreased SO_x and NO_x emissions has beneficial effects on lowering GHG emissions as well as emissions that contribute to acidic precipitation.

Since it was first adopted in 1997, Annex VI has been bolstered by various technical codes and standards.²⁶ Before January 2012, the amount of sulfur in fuel oil could not exceed 4.5% m/m.²⁷ After January 2012, sulfur was capped at 3.5% m/m, and then after January 2020, the cap was further lowered to 0.50% m/m.²⁸

Annex VI further limits the amount of sulfur allowed in fuel oil when a vessel operates in an emissions control area (ECA). An ECA may be formed if a country demonstrates to IMO a need to control SO_x, NO_x, or particulate matter emissions for an area under its jurisdiction. Currently, the United States has an ECA for the entire country out to 200 nautical miles (nm), known as the North American ECA,²⁹ and a U.S. Caribbean Sea ECA that encompasses the U.S.

²² *Id.*

²³ *Id.* at ES-8; *Sulfur Dioxide Basics*, ENV’T PROT. AGENCY, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> (updated Jan. 28, 2021).

²⁴ INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2019, *supra* note 6, at ES-8.

²⁵ *Acid Rain and Water*, U.S. GEOLOGICAL SURV., https://www.usgs.gov/special-topic/water-science-school/science/acid-rain-and-water?qt-science_center_objects=0#qt-science_center_objects (last visited Nov. 2, 2021).

²⁶ *Prevention of Air Pollution From Ships*, INT’L MAR. ORG., <https://www.imo.org/en/OurWork/Environment/Pages/Air-Pollution.aspx> (last visited Nov. 2, 2021).

²⁷ “%m/m” refers to mass percent, therefore the 4.5% limitations means no more than 4.5% of the mass of the fuel oil can contain sulfur.

²⁸ Res. MEPC.305(73) at 2 (Oct. 26, 2018); *see also* MARPOL annex VI, regulation 14.1.

²⁹ *See* Res. MEPC.202(62) at 4 (July 15, 2011); *see also* MARPOL annex VI, regulation 14.3.2.

Virgin Islands.³⁰ Since January 2015, the sulfur limit within an ECA has been capped at 0.10% m/m.³¹ Additionally, the current limit on SO_x within an ECA is 191% lower than what it was in 2012.

On March 1, 2020, a new rule came into effect that limits the sulfur content of a ship's fuel to 0.5%, unless the vessel has in operation a proper scrubber (or equivalent).³² This regulation serves as a further hindrance to ships using high-sulfur fuel when beyond the detection capability of a nation.

The regulation of NO_x emissions is primarily focused on the technical design and performance of the engines on a ship. The regulations vary depending on when the ship was built, when the marine diesel engines were installed, and whether the vessel has undergone a major conversion.³³ The limit of NO_x emissions is an important part of Annex VI, and the certification of marine diesel engines for use must be done in accordance with IMO's revised NO_x Technical Code 2008.³⁴ The amount of permissible NO_x emissions is broken down into three tiers and varies based on the year the marine diesel engine was installed, the speed the engine is operated at, and the location of the vessel (for example, an ECA).³⁵ MARPOL also specifically prohibits the use of "defeat devices"³⁶ and "irrational

³⁰ *Id.* at 3.

³¹ 0.10% m/m equates to 1,000 parts per million ("ppm") of sulphur in the fuel oil. For comparison, the U.S. only permits diesel fuel used for on-road transport (that is, a tractor-trailer) to have 15ppm sulfur, which equates to 0.0015% m/m.

³² See Res. MEPC.305(73) at 1–2.

³³ A "major conversion" means that, on or after January 1, 2000, "the engine is replaced by a marine diesel engine or an additional marine diesel engine is installed, . . . any substantial modification . . . , or . . . the maximum continuous rating of the engine is increased by more than 10% compared to the maximum continuous rating of the original certification of the engine." Res. MEPC.176(58) at 16 (Oct. 10, 2008).

³⁴ Res. MEPC.177(58) (Oct. 10, 2008) *amended by* Res. MEPC.251(66) (Apr. 4, 2014).

³⁵ Res. MEPC.176(58) at 16–17 (Oct. 10, 2008); *see also* MARPOL annex VI, regulation 13.3–13.5.

³⁶ A "defeat device" is "a device that measures, senses, or responds to operating variables (e.g., engine speed, temperature, intake pressure or any other parameter) for the purpose of activating, modulating, delaying or deactivating the operation of any component or the function of the emission control system, such that the effectiveness of the emission control system is

emission control strategies” that undermine the intent of Annex VI in ensuring that certified and tested marine diesel engines meet NO_x emissions standards.³⁷

It is, however, permissible for ships to use alternative systems to achieve results that “are at least as effective in terms of emissions reductions as required by [Annex VI].”³⁸ This could include, for example, installing a “fitting, material, appliance or apparatus” or using alternative fuel.³⁹ For instance, instead of combusting ultra-low sulfur fuels, the vessel could use an exhaust gas cleaning system.⁴⁰

Unlike SO_x and NO_x, Annex VI does not specifically regulate CO₂ emissions. However, there are requirements for improving the energy efficiency of ships that, in turn, should reduce the amount of fuel needed for operations, resulting in decreased CO₂ emissions. Specifically, all ships of 400 gross tons and above, with some limited exceptions, must have a SEEMP.⁴¹ The SEEMP should take into account various factors that, if addressed properly, can increase the efficiency of a ship and thereby lower GHG emissions. Such factors include speed optimization, weather routing, and hull coatings.⁴² For example, there are several Vessel Speed Reduction (VSR) zones in the United States that slow the speed of vessels during approach and

reduced under conditions encountered during normal operation, unless the use of such a device is substantially included in the applied emission certification test procedures.” *Id.* at 4. This is similar to defeat devices seen in the automobile industry. *See* Press Release, Dep’t of Just., Volkswagen AG Agrees to Plead Guilty and Pay \$4.3 Billion in Criminal and Civil Penalties; Six Volkswagen Executives and Employees are Indicted in Connection with Conspiracy to Cheat U.S. Emissions Tests (Jan. 11, 2017).

³⁷ Res. MEPC.176(58) at 19 (Oct. 10, 2008).

³⁸ *Id.* at 7.

³⁹ *Id.*

⁴⁰ A good resource for explaining these systems can be found at the Exhaust Gas Cleaning Systems Association website, *What is an Exhaust Gas Cleaning System?*, EXHAUST GAS CLEANING SYS. ASS’N, <https://www.egcsa.com/technical-reference/what-is-an-exhaust-gas-cleaning-system/> (last visited Nov. 2, 2021); *see also* Res. MEPC.259(68) (May 15, 2015).

⁴¹ Res. MEPC.282(70) at 4 (October 28, 2016); *see also* MARPOL annex VI, regulation 19.

⁴² Res. MEPC.282(70) at 4 (October 28, 2016).

departure up to 40 nautical miles from port.⁴³ During 2017, it was estimated that the VSR in the Port of Long Beach “resulted in reduction of particulate matter by 28 tons, nitrogen oxides by 1,311 tons, sulfur oxides by 38 tons, and carbon dioxide equivalents by 58,964 tons.”⁴⁴ In addition, certain types of hull coatings on ships may achieve up to 8% greater efficiency, which lowers GHG emissions.⁴⁵

IMO has further identified several improvements that ship operating companies can implement and evaluate to optimize energy efficiency, including improvements to the shaft power of the main engine, trim, ballast, propeller design selection, waste-heat recovery, and fuel selection.⁴⁶ SEEMP guidance does not mandate any particular factor be weighted above another, nor does it mandate any specific action. Rather, SEEMP is designed to be tailored to the individual vessel and operating company.⁴⁷ While the specific requirements of any particular SEEMP are not mandated, it is the authors’ opinion that operating companies will likely desire a thorough SEEMP to achieve cost savings while, at the same time, curbing GHG emissions.

In addition to the SEEMP requirements for ships 400 gross tons and above, an EEDI is required for all new ships, for ships that have undergone a major conversion, and ships that had major conversions significant enough that the ship’s flag state (the country where the vessel is registered) considers it a newly constructed ship.⁴⁸ An EEDI is a measure of a ship’s energy efficiency, and it is calculated through a formula that takes into account numerous inputs.⁴⁹ These inputs include fuel type, ship speed, cargo capacity, deadweight, engine power, specific fuel consumption, hull design elements, the impact of

⁴³ *Marine Vessel Speed Reduction Reduces Air Emissions and Fuel Usage*, ENV’T PROT. AGENCY, <https://www.epa.gov/ports-initiative/marine-vessel-speed-reduction-reduces-air-emissions-and-fuel-usage> (updated Mar. 10, 2021).

⁴⁴ *Id.*

⁴⁵ *Hull Coating*, INT’L MAR. ORG, <https://greenvoyage2050.imo.org/technology/hull-coating/> (last visited Nov. 2, 2021).

⁴⁶ Res. MEPC.282(70) at 4 (October 28, 2016) at 7–11.

⁴⁷ *Id.* at 4.

⁴⁸ Res. MEPC.203(62 at 10 (July 2011); *see also* MARPOL annex VI, regulations 20, 21.

⁴⁹ Res. MEPC.245(66) at 5 (Apr. 4, 2014).

sea conditions on speed, length, draught, breadth, volumetric displacement, and electrical loads.⁵⁰ The result is an EEDI expressed in grams of CO₂ per tonne-nautical mile⁵¹ (“gCO₂/tnm”).⁵² According to IMO:

The EEDI requires a minimum energy efficiency level per capacity mile (e.g. tonne mile) for different ship type and size segments. Since 1 January 2013, following an initial two year phase zero, new ship design needs to meet the reference level for their ship type. The level is to be tightened incrementally every five years, and so the EEDI is expected to stimulate continued innovation and technical development of all the components influencing the fuel efficiency of a ship from its design phase.⁵³

The document verifying that a ship has been properly surveyed is an international energy efficiency certificate (IEE).⁵⁴ By 2025, the EEDI for new ships, with some exceptions, must be 30% more efficient than the baseline standard for the ship type in 2013.⁵⁵

MARPOL Annex VI also requires that ships of 400 gross tons and above engaged in international trade be issued an international air pollution prevention (IAPP) certificate after the completion of certain surveys.⁵⁶ Before an IAPP can be issued, a vessel must be issued an engine international air pollution prevention (EIAPP) certificate that confirms the engine(s) meet(s) the requirements for NO_x emissions.⁵⁷

⁵⁰ *Id.* at 5–27.

⁵¹ Note that a ton is an imperial unit of mass equivalent to 1,016.047 kg or 2,240 lbs., whereas a tonne is a metric unit of mass equivalent to 1,000 kg or 2,204.6 lbs.

⁵² For examples see *Id.* at 29–30.

⁵³ *Energy Efficiency Measures*, INT’L MAR. ORG., <https://www.imo.org/en/OurWork/Environment/Pages/Technical-and-Operational-Measures.aspx> (last visited Nov. 2, 2021).

⁵⁴ See Res. MEPC.203(62) at 13–14 (July 15, 2011) for the form of an IEE certificate. See also Annex VI, Appendix VIII.

⁵⁵ Res. MEPC.203(62) at 11 (July 15, 2011) (Table 1); see also Annex VI, Regulation 21, Table 1.

⁵⁶ Res. MEPC.176(58) at 9 (Oct. 10, 2008).

⁵⁷ Res. MEPC.198(62) at 6 (July 15, 2011).

For U.S. flagged ships, EPA issues the EIAPP.⁵⁸ MARPOL provides a model IAPP certificate and requires that it be in English, French, or Spanish.⁵⁹ The IAPP must document several key requirements of MARPOL Annex VI, including (1) the existence of onboard ODS; (2) verification that the engines onboard meet NO_x requirements; and (3) that the ship has the appropriate fuels and fuel changeover procedures when the ship operates in an ECA. The IAPP certificate is commonly inspected during U.S. Coast Guard port state control examinations.

III. Enforcement

The current enforcement regime encompasses examining regulatory certificates, SEEMPs, bunker delivery notes (discussed in further detail below), Oil Record Books (ORBs), and fuel oil samples. The United States implements MARPOL through the Act to Prevent Pollution from Ships (APPS).⁶⁰ It provides that a knowing violation of APPS, MARPOL, or the regulations issued pursuant to APPS is a class D felony.⁶¹

A. Tracking compliance

Bunker fuel is fuel loaded on a vessel to be used for the propulsion, electrical, and auxiliary systems of the ship.⁶² A bunker delivery note must record the details of the fuel oil.⁶³ The bunker delivery note must include: (1) the name and IMO number of the vessel; (2) the date and the port where bunker was delivered from; (3) the name, address, and telephone number of the marine fuel oil supplier; (4) the product name; (5) the quantity in metric tons; (6) the density at 15°C, kg/m³;⁶⁴

⁵⁸ 40 C.F.R. § 1043.40.

⁵⁹ Res. MEPC.176(58) at 10, 27 (Oct. 10, 2008).

⁶⁰ 33 U.S.C. § 1901–1913.

⁶¹ A class D felony is punishable by a term of imprisonment of 6 years, 18 U.S.C. § 3581, and a fine of \$250,000 for an individual and \$500,000 for an organization. 18 U.S.C. § 3571.

⁶² This is in contrast to cargo fuel, which is intended to be loaded onboard and then delivered to a customer.

⁶³ Res. MEPC.176(58) at 25 (Oct. 10, 2008); *see also* MARPOL annex VI, regulation 18.5.

⁶⁴ The density requirement must be tested in accordance with the International Organization for Standardization (ISO) 3675:1998 or 12185:1996. INT'L ORG. FOR STANDARDIZATION, CRUDE PETROLEUM AND

and (7) the sulfur content (% m/m).⁶⁵ The bunker delivery note must be kept on board the ship for three years after the fuel oil has been delivered and must be readily available for inspection at all reasonable times.⁶⁶

Each time fuel oil is delivered to a vessel, a representative sample of the oil must be delivered along with the bunker delivery note.⁶⁷ Additionally, any loading of fuel oil (other than for cargo) must be recorded in the ORB Part I.⁶⁸ That way, an inspector can compare the bunker delivery note to the entries in the ORB to ensure they are consistent. Discrepancies between the two might be cause for further inquiry. An inspector can also arrange to test the representative sample to ensure that its chemical qualities, including sulfur content, correspond to the bunker delivery note. Another option an inspector has is to sample the fuel oil that is being consumed by the engine(s) while in an ECA. This can be accomplished by sampling the tank(s) that supply the fuel to the engine(s).

MARPOL Annex VI, Appendix VI, sets forth detailed procedures for properly testing fuel oil samples. This testing procedure, which flag states require when verifying fuel oil samples, serves as a great template for any inspector to follow when analyzing samples. First, the laboratory conducting the analysis must be accredited in accordance with ISO 17025 or an equivalent standard.⁶⁹ Then, the laboratory must ensure that the sample it receives has the original

LIQUID PETROLEUM PRODUCTS—LABORATORY DETERMINATION OF DENSITY—HYDROMETER METHOD (1998) (3675:1998); INT’L ORG. FOR STANDARDIZATION, CRUDE PETROLEUM AND PETOLEUM PRODUCTS—DETERMINATION OF DENSITY—OSCILLATING U-TUBE METHOD)(1996) (12185:1996).

⁶⁵ The sulfur content testing must be in accordance with ISO 8754:2003. INT’L ORG. FOR STANDARDIZATION, PETROLEUM PRODUCTS—DETERMINATION OF SULFUR CONTENT—ENERGY-DISPERSIVE X-RAY FLUORESCENCE SPECTROMETRY (2003).

⁶⁶ Res. MEPC.176(58) at 25 (Oct. 10, 2008); *see also* MARPOL annex VI, regulation 18.6.

⁶⁷ Res. MEPC.176(58) at 26; *see also* MARPOL annex VI, regulation 18.1.

⁶⁸ Res. MEPC.117(52) at 21 (Oct. 15, 2004); *see also* MARPOL annex I, regulation 17.2.5. An ORB Part I must be kept on board every oil tanker 150 gross tons and above and every ship of 400 gross tons and above. Res. MEPC.117(52) at 21 (Oct. 15, 2004); *see also* MARPOL annex I, regulation 17.2.5.

⁶⁹ Res. MEPC.176(58) at 42–44 (Oct. 10, 2008); *see also* MARPOL annex VI, appendix VI.

seals and must record the details of the seal numbers and sample label.⁷⁰ The laboratory must next ensure that the sample is fully homogenized, draw out two sub-samples, re-seal the sample, and record the new details of the seal.⁷¹ Finally, the sample must be analyzed in accordance with ISO 8754.2003. There is a procedure for a second testing, if necessary.⁷² The results of the testing could indicate whether the fuel oil being combusted was within the limits imposed within an ECA.

B. Recent enforcement

On July 11, 2018, the Motor Tanker *Ocean Princess* was inspected by the U.S. Coast Guard in Limetree Bay, St. Croix, U.S. Virgin Islands.⁷³ An inspector looking at the bunker delivery notes discovered that the vessel used non-compliant fuel, that is, fuel with a sulfur content higher than 0.1% m/m.⁷⁴ The USVI is within an ECA.⁷⁵ The vessel's chief officer claimed that, when the vessel pulled into Galisbay Port, St. Martin, French West Indies, it would take on over 1,000 barrels of ultra-low sulfur diesel⁷⁶ at a time as bunkers.⁷⁷ When the vessel pulled into St. Martin, however, the vessel's chief engineer would print out a bunker delivery note from his office computer and fill in the details.⁷⁸ The vessel did not actually take any bunkers from the facility in St. Martin; rather, the crew transferred fuel from the cargo tanks into the bunker tanks.⁷⁹ The bunker delivery notes were fictitious. No entries were made in the ORB Part I documenting fuel oil transfers from the cargo into the bunker tanks.⁸⁰ No entries were made in the ORB Part II documenting that cargo had been

⁷⁰ *Id.* at 42.

⁷¹ *Id.*

⁷² *Id.* at 43.

⁷³ Plea Agreement at 7, *United States v. Ionian Shipping & Trading Corp.*, 19-cr-9 (D.V.I. Apr. 23, 2019), ECF No. 11.

⁷⁴ *Id.*

⁷⁵ Res. MEPC.202(62) at 10 (July 15, 2011); *see also* MARPOL annex VI, regulation 13.6.2.

⁷⁶ ULSD has a maximum sulfur content of 15pm which equates to 0.0015% m/m. *See* 40 C.F.R. §§ 1090.80, 1090.305.

⁷⁷ Plea Agreement, *supra* note 72, at 7.

⁷⁸ *Id.* at 5.

⁷⁹ *Id.*

⁸⁰ *Id.* at 6.

transferred.⁸¹ Between January 3, 2017, and July 11, 2018, the vessel used non-compliant fuel in the ECA and falsified the ORBs and bunker delivery notes.⁸² This is the only case to date where a violation of Annex VI has been prosecuted criminally. The operator (Ionian Shipping & Trading Corp.) and owner (Lily Shipping Ltd.) were each fined \$1,500,000.00, placed on probation for four years, and ordered to implement a comprehensive environmental compliance plan, which is currently being actively monitored.⁸³

The Environmental Crimes Section of the U.S. Department of Justice and the United States Attorneys offices, in conjunction with its their partners at EPA and the U.S. Coast Guard, will continue to actively investigate and prosecute persons and organizations that intentionally violate pollution prevention laws, including Annex VI. This enforcement, arguably, will have an effect, perhaps not as great as desired by some, on climate change because limiting and controlling pollution emitted from ships is extremely important. These authors welcome the challenge and will carry-on.

Whether all of these air pollution requirements for ships are sufficient to lower GHG emissions to a level that will support the global effort to limit global warming to 2 degrees Celsius or less is another matter entirely. Perhaps IMO should put more earnest consideration into converting suggestions and goals within MARPOL Annex VI into more concrete requirements and mandates.

About the Authors

Kenneth E. Nelson is a Senior Trial Attorney in the Environmental Crimes Section (ECS) of the Department of Justice. Before joining ECS, he served on active duty as an officer in the U.S. Coast Guard for 14 years.

Stephen Da Ponte is a Trial Attorney in ECS, having joined the Section in 2016 after retiring from the U.S. Coast Guard.

⁸¹ *Id.* at 6–7. The ORB Part II documents the loading and unloading of fuel for an oil tanker. 33 C.F.R. § 151.25(a). Internal transfers of cargo must be recorded. 33 C.F.R. § 151.25(e)(2).

⁸² Plea Agreement, *supra* note 72, at 7–8.

⁸³ Judgment, *Ionian Shipping and Trading Corp.*, 19-cr-9 (D.V.I. Sept. 5, 2019), ECF No. 46; Judgment, *United States v. Lilly Shipping Ltd.*, 19-cr-9 (D.V.I. Sept. 5, 2019), ECF No. 47.

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Oil and Gas Exemptions to Pollution and Worker Safety Laws

Christopher J. Costantini
Senior Trial Attorney
Environmental Crimes Section
Environment and Natural Resources Division

I. Introduction

The oil and gas industry is exempt from various requirements in pollution and worker safety laws. A familiarity with these exemptions is helpful for prosecutors and agents handling oilfield investigations. Despite the exemptions, there are tools available to address crimes relating to extracting and producing oil and gas.

II. Exemptions

Targeted oil and gas exemptions are spread out over several major environmental laws.¹ This is due at least in part to the influence and power of the oil and gas industry.²

¹ See generally Adam Kron, *EPA's Role in Implementing and Maintaining the Oil and Gas Industry's Environmental Exemptions: A Study in Three Statutes*, 16 VT. J. ENVTL. L. 586, 587 (2015) (oil and gas industry is unique in the amount of exemptions and exclusions it has received from environmental laws).

² Mike Soraghan, *Drilling's Safety Exemptions and How They Got There*, E&E ENERGYWIRE (Nov. 4, 2014), <https://subscriber.politicopro.com/article/eenews/1060008302> (“The petroleum people have a very powerful lobby,” said Mark Kaszniak, senior recommendation specialist with the U.S. Chemical Safety Board, an independent agency that has investigated numerous oil and gas accidents. ‘And they are particularly powerful in making sure the regulators give them exemptions in “upstream” areas where they’re getting the oil and gas directly out of the ground.’); Deborah L. Harris & Todd S. Mikolop, *Hydraulic Fracturing: the Growing National Debate*, 60 U.S. ATT’YS’ BULL. at 57 (July 2012) (“[W]hile highly regulated, the oil and gas industry is also highly influential. Consequently, Congress has specifically exempted select oil and gas production activities from several federal environmental laws.”); James R. Cox, *Revisiting RCRA's Oilfield Waste Exemption as to Certain Hazardous Oilfield Exploration and Production Wastes*, 14 VILL. ENVTL. L. J. 1, 3, 5, n. 7, 15 (2003) (“By 1980, there had been intense lobbying

A. The Clean Water Act

The Federal Water Pollution Control Act, or Clean Water Act (CWA),³ enacted in 1972, regulates discharges of pollutants from point sources into waters of the United States. Oil and gas facilities have separate requirements for stormwater runoff, and a permit is generally not required.⁴ This exemption is limited and does not apply where the stormwater discharge contains reportable quantities of designated pollutants or contributes to a violation of a water quality standard.⁵ Discharges of sediment from construction activities do not qualify as a violation of the water quality standard.⁶

The definition of “pollutant” under the CWA exempts certain oil and gas related materials that are put into wells in specified circumstances.⁷ Specifically, pollutant does not mean:

water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources.⁸

Caselaw has generally limited this exception to times when the water is in a well.⁹ The Ninth’s Circuit’s narrow reading tracks the

by the oil-and-gas industry in order to secure exemptions” from RCRA hazardous waste requirements).

³ 33 U.S.C. §§ 1251–1387.

⁴ 33 U.S.C. § 1342(l)(2); 40 C.F.R. § 122.26(a)(2)(ii).

⁵ 40 C.F.R. § 122.26(c)(1)(iii)(A)-(C); *Oil and Gas Stormwater Permitting*, ENV’T PROT. AGENCY, <https://www.epa.gov/npdes/oil-and-gas-stormwater-permitting> (updated Sept. 16, 2021) (the “triggers” requiring permit coverage are specified reportable quantity discharges or discharges contributing to “a violation (that is to say, an exceedance) of a water quality standard”).

⁶ 40 C.F.R. § 122.26(a)(2)(ii).

⁷ 33 U.S.C. § 1362(6)(B).

⁸ *Id.*

⁹ *See* N. Plains Res. Council v. Fidelity Expl. & Dev. Co., 325 F.3d 1155, 1161 (9th Cir. 2003); Sierra Club, Lone Star Chapter v. Cedar Point Oil Co., 73 F.3d 546, 568 (5th Cir. 1996) (describing “a detailed exemption for produced

statutory language: “The CWA only exempts water derived from gas extraction from regulation when the water is disposed of in a well and will not result in the degradation of other water bodies.”¹⁰

B. The Resource Conservation and Recovery Act

Hazardous wastes are regulated by the Resource Conservation and Recovery Act (RCRA),¹¹ which exempts oil and gas wastes.¹² Congress excluded wastes associated with the exploration, development, or production of crude oil and natural gas (E&P wastes) pending further determination by the Environmental Protection Agency (EPA),¹³ which subsequently excluded from regulation “[d]rilling fluids, produced waters, and other [oil and gas] wastes associated with the exploration, development, or production of crude oil [and] natural gas.”¹⁴ EPA determined that regulating the wastes as hazardous was “unwarranted because of the relatively low risk of these wastes and

water that has been disposed of in a state-approved reinjection well”); U.S. Steel Corp. v. Train, 556 F.2d 822, 852 (7th Cir. 1977) (“Applying the canon *expressio unius est exclusio alterius* to the [exception], we conclude that the listed materials are ‘pollutants’ when injected into wells under any other circumstances.”), *overruled in part on other grounds*, City of West Chicago v. U.S. Nuclear Regulatory Comm’n, 701 F.2d 632, 644 (7th Cir. 1983).

¹⁰ *Fidelity*, 325 F.3d at 1161 (citing 33 U.S.C. § 1362(6)(B)).

¹¹ The RCRA is part of the Solid Waste Disposal Act (SWDA), 42 U.S.C. §§ 6901–6992k. The most significant part of the RCRA is subchapter III to the SWDA, titled “Hazardous Waste Management,” which is what is usually referred to as the RCRA and is found at 42 U.S.C. §§ 6921–6939g.

Subchapter III is often referred to as “Subtitle C” by EPA, tracking the original congressional title before it was codified at “Subchapter III.”

¹² 42 U.S.C. § 6921(b)(2)(A); *see also*, Harris & Mikolop, *supra* note 2, at 58.

¹³ 42 U.S.C. § 6921(b)(2)(A).

¹⁴ 40 C.F.R. § 261.4(b)(5). For a detailed description of the RCRA oil and gas exemption, see ENV’T PROT. AGENCY, EXEMPTION OF OIL AND GAS EXPLORATION AND PRODUCTION WASTES FROM FEDERAL HAZARDOUS WASTE REGULATIONS 5 (2001) [hereinafter EXEMPTION OF OIL AND GAS EXPLORATION] (“In 1988, EPA issued a regulatory determination stating that control of E&P [(exploration and production)] wastes under RCRA Subtitle C regulations is not warranted. Hence, E&P wastes have remained exempt from Subtitle C regulations.”); *see also* Cox, *supra* note 2, at 3 (tracing history of certain oil and gas E&P wastes under RCRA).

the presence of generally effective State and Federal regulatory programs.”¹⁵

Drawing on legislative history, EPA stated that the term “other wastes associated”¹⁶ in the exemption includes waste materials “intrinsically derived from primary field operations,” which “is intended to distinguish exploration, development, and production operations from transportation and manufacturing operations.”¹⁷ Primary field operations include:

exploration, development, and the primary, secondary, and tertiary production of oil or gas. Crude oil processing, such as water separation, de-emulsifying, degassing, and storage at tank batteries associated with a specific well or wells, are examples of primary field operations. Furthermore, because natural gas often requires processing to remove water and other impurities prior to entering the sales line, gas plants are considered to be part of production operations regardless of their location with respect to the wellhead.¹⁸

¹⁵ See *Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Wastes*, 53 Fed. Reg. 25,446, 25,458–59 (July 6, 1988). Six years later, EPA clarified this regulatory determination. See *Clarification of the Regulatory Determination for Wastes From the Exploration, Development and Production of Crude Oil, Natural Gas and Geothermal Energy*, 58 Fed. Reg. 15,284 (Mar. 22, 1993).

¹⁶ 40 C.F.R. § 261.4(b)(5).

¹⁷ EXEMPTION OF OIL AND GAS EXPLORATION, *supra* note 14, at 6; see also, H.R. Rep. No. 96-1114, at 32 (1980) (Conf. Rep.) (similar language).

¹⁸ EXEMPTION OF OIL AND GAS EXPLORATION, *supra* note 14, at 7. The formulation in the legislative history is, “The term ‘other wastes associated’ is specifically included to designate waste materials intrinsically derived from the primary field operations associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy. It would cover such substances as: Hydrocarbon bearing soil in and around the related facilities; drill cuttings; materials (such as hydrocarbon, water, sand, and emulsion) produced from a well in conjunction with crude oil, natural gas, or geothermal energy; and the accumulated material (such as hydrocarbon, water, sand, and emulsion) from production separators, fluid treating vessels, storage vessels, and production impoundments.” H.R. Rep. No. 96-1444, at 32 (1980) (Conf. Rep.).

To be “intrinsically derived” from primary field operations, EPA opined, waste must be “uniquely associated” with E&P operations, so for example, synthetic pit liners are not covered by the exemption since they “are used for a variety of other applications,” such as landfills and impoundments.¹⁹

C. The Comprehensive Environmental Response, Compensation, and Liability Act

The federal “Superfund” law was enacted in 1980 as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)²⁰ to fund the cleanup of abandoned sites and emergency releases into the environment.²¹ Under the Act, EPA can seek out parties responsible for pollution and assure their cooperation in the cleanup as well as remediate and recover the costs of remediation from responsible parties.²²

Under CERCLA, the term “hazardous substance” excludes petroleum, including crude oil, natural gas (including natural gas liquids and liquefied natural gas), synthetic gas usable for fuel, and mixtures of natural gas and such synthetic gas.²³ The definition of “pollutant or contaminant” similarly excludes petroleum and natural gas.²⁴ Environmental groups have criticized this exclusion, claiming that it “gives oil companies little incentive to prevent and clean up spills.”²⁵

EPA has interpreted hazardous substances “indigenous” to or “normally mixed” with oil to be part of the exclusion, while hazardous

¹⁹ Letter from Robert Dellinger, Dir., Materials Recovery and Waste Mgmt. Div., Env’t Prot. Agency, to Jep Seman, Att’y, Colorado Petroleum Ass’n, and Scott Campbell, Att’y, Poulsen, Odell, & Peterson, LLC 3 (September 15, 2010).

²⁰ 42 U.S.C. §§ 9601–75.

²¹ *Summary of the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)*, ENV’T PROT. AGENCY, <https://www.epa.gov/laws-regulations/summary-comprehensive-environmental-response-compensation-and-liability-act> (updated Sept. 28, 2021).

²² *Id.*

²³ 42 U.S.C. § 9601(14).

²⁴ 42 U.S.C. § 9601(33); *see also*, Harris & Mikolop, *supra* note 2, at 59.

²⁵ William J. Brady and James P. Crannell, *Hydraulic Fracturing Regulation in the United States: The Laissez-Faire Approach of the Federal Government and Varying State Regulations*, 14 VT. J. ENVTL. L. 39, 52 (2012).

substances added to oil (for example, “subsequent to the petroleum refining process”) are not excluded.²⁶ Court decisions are consistent with this interpretation, finding crude oil tank bottoms²⁷ and waste oil mixed with hazardous substances²⁸ not indigenous and, thus, not part of the exclusion.

A “federally permitted release” is exempt from CERCLA liability²⁹ and includes specified injections of oilfield fluids.³⁰ Response costs from a “federally permitted release” are not recoverable under CERCLA.³¹

D. The Clean Air Act

The Clean Air Act (CAA)³² is the Nation’s comprehensive air pollution control statute, and it is designed “to protect and enhance the quality of the Nation’s air resources.”³³ The CAA establishes

²⁶ ENV’T PROT. AGENCY, QUESTIONS AND ANSWERS ON RELEASE NOTIFICATION REQUIREMENTS AND REPORTABLE QUANTITY ADJUSTMENTS 14–15 (1995) [hereinafter RELEASE NOTIFICATION]. This document is consistent with EPA’s explanation in a final rule published April 4, 1985, stating, “EPA does not consider materials such as waste oil to which listed CERCLA substances have been added to be within the petroleum exclusion.” 50 Fed. Reg. 13,456, 13,460 (1985). Note also that waste oils specifically listed (for example, F010 and K048 through K052) are regulated under CERCLA. *See* 40 C.F.R. § 302.4, Table 302.4.

²⁷ When crude oil is stored in tanks, sediment and water settle to the bottom, which is known as “crude oil tank bottoms.” *Cose v. Getty Oil Co.*, 4 F.3d 700, 702 (9th Cir. 1993). The Ninth Circuit found that these crude oil tank bottoms “do not fall within CERCLA’s exclusion of ‘petroleum, including crude oil or a fraction thereof.’” *Id.* at 705.

²⁸ *Mid Valley Bank v. N. Valley Bank*, 764 F. Supp. 1377, 1384 (E.D. Cal. 1991) (“I conclude that waste oil containing CERCLA hazardous substances does not fall under the CERCLA petroleum exclusion”).

²⁹ 42 U.S.C. § 9601(10); RELEASE NOTIFICATION, *supra* note 26, at 28.

³⁰ 42 U.S.C. § 9601(10)(I) (“any injection of fluids or other materials authorized under applicable State law (i) for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, (ii) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (iii) which are brought to the surface in conjunction with the production of crude oil or natural gas and which are reinjected”).

³¹ *Harris & Mikolop*, *supra* note 2, at 59 (citing 42 U.S.C. § 9607(j)).

³² The Clean Air Act of 1970 (CAA), 42 U.S.C. §§ 7401–7675.

³³ 42 U.S.C. §§ 7401(b)(1), 7470.

limits, called the National Emission Standards for Hazardous Air Pollutants (NESHAPs), for major sources of pollutants³⁴ “that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.”³⁵

A “major source” of pollutants include a “group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate,” specified amounts of hazardous air pollutants.³⁶ This aggregation was designed to “protect[] the public from sources that on their own are relatively harmless but collectively release large quantities of hazardous pollutants.”³⁷

The aggregation rule does not apply to emissions from oil and gas wells or pipeline compressors and pump stations.³⁸ In fashioning this exemption, Congress provided:

Notwithstanding the provisions of [42 U.S.C. § 7412(a)(1)], emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources, and in the case of any oil or gas exploration or production well (with its associated equipment), such emissions shall not be aggregated for any purpose under this section.³⁹

³⁴ Harris & Mikolop, *supra* note 2, at 58. Hazardous Air Pollutants (HAPs) are listed at 42 U.S.C. § 7412(b).

³⁵ *National Emission Standards for Hazardous Air Pollutants Compliance Monitoring*, ENV’T PROT. AGENCY, <https://www.epa.gov/compliance/national-emission-standards-hazardous-air-pollutants-compliance-monitoring> (updated Jan. 7, 2021).

³⁶ 42 U.S.C. § 7412(a)(1).

³⁷ Harris & Mikolop, *supra* note 2, at 58.

³⁸ 42 U.S.C. § 7412(n)(4)(A).

³⁹ *Id.*; see also, Brady & Crannell, *supra* note 25, at 51 (“HAP emissions from oil and gas exploration or production wells are exempt from the aggregation rule within the statutory definition of ‘major source.’”). However, 42 U.S.C. § 7412(n)(4)(B) does allow oil and gas production wells to be listed as an “area

Since this provision effectively excludes a large number of wells from hazardous air pollutant (HAP) emission requirements,⁴⁰ it has been sharply criticized. One commentator opined that the exemption “leaves HAP emissions from oil and gas wells essentially unregulated under the CAA,”⁴¹ while another described it as “staggering,” citing as an example tons of legally emitted benzene from hundreds of wells in one county in Colorado.⁴²

E. The Safe Drinking Water Act

Congress passed the Safe Drinking Water Act (SDWA)⁴³ to ensure that water delivered by public water systems is safe.⁴⁴ The SDWA exempts from regulation “the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing [(fracking)] operations related to oil, gas, or geothermal production activities.”⁴⁵ Thus, Congress “conclusively withdrew”

source category” when the wells are located in highly populated areas and the EPA Administrator determines that emissions of hazardous air pollutants from such wells “present more than a negligible risk of adverse effects to public health.”

⁴⁰ Brady & Crannell, *supra* note 25, at 51 (“most oil and gas wells, on their own, do not emit the threshold limit of HAPs”).

⁴¹ *Id.*

⁴² Harris & Mikolop, *supra* note 2 at 58 (“For example, in Garfield County, Colorado, ‘more than 30 tons of benzene are released into the air from 460 oil and gas wells. This is nearly 20 times more benzene than is released by a giant industrial oil refinery in Denver, yet none of the toxic emissions from these oil and gas wells are subject to NESHAPs.’”) (quoting AMY MALL ET AL, DRILLING DOWN: PROTECTING WESTERN COMMUNITIES FROM THE HEALTH AND ENVIRONMENTAL EFFECTS OF OIL AND GAS PRODUCTION (2007)).

⁴³ 42 U.S.C. §§ 300f–300j-27.

⁴⁴ *Summary of the Safe Drinking Water Act*, ENV’T PROT. AGENCY, <https://www.epa.gov/laws-regulations/summary-safe-drinking-water-act> (updated Sept. 28, 2021); *Understanding the Safe Drinking Water Act*, ENV’T PROT. AGENCY (2004), <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf>.

⁴⁵ 42 U.S.C. § 300h(d)(1)(B)(ii). “Propping agents” (or “proppant”) refers to sand (or “frac sand”) or man-made materials that hold a fracture open after hydraulic fracturing to facilitate the flow of fluid through the fracture. *Proppant*, SCHLUMBERGER, <https://glossary.oilfield.slb.com/en/terms/p/proppant> (last visited Oct. 06, 2021); MARY ELLEN ET AL, FRAC SAND IN THE UNITED STATES—A GEOLOGICAL AND INDUSTRY OVERVIEW 1 (2015). Hydraulic

fracking (except fracking with diesel-based fluids) from the purview of the SDWA.⁴⁶

This exemption was enacted via the Energy Policy Act of 2005⁴⁷ following a 2004 EPA study that found that fracking “poses little or no threat” to underground sources of drinking water.⁴⁸ That study was

fracturing (fracking) is a means of stimulating shale to release oil or natural gas. A water-based fluid mixed with chemicals (fracking fluid) and sand is pumped down the well under pressures high enough to fracture the surrounding rock formation, freeing up the oil and gas, which is then brought to the surface along with the spent fracking fluid and wastewater (produced water) trapped with the hydrocarbons. *See generally What is hydraulic fracturing?*, U.S. GEOLOGICAL SURV., https://www.usgs.gov/faqs/what-hydraulic-fracturing?qt-news_science_products=0#qt-news_science_products (last visited Oct. 06, 2021); *Hydraulic Fracturing*, SCHLUMBERGER, https://glossary.oilfield.slb.com/en/terms/h/hydraulic_fracturing (last visited Oct. 06, 2021).

⁴⁶ *See* Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 *FORDHAM ENV'T L. REV.* 115, 144–45 (2009); *see also* David L. Callies, *Regulation of Hydraulic Fracturing*, 49 *J. MARSHALL L. REV.* 271, 287 (2015) (“as long as diesel is not used, oil and gas extraction companies can inject anything in association with fracking operations without having to comply with the SDWA”); Keith B. Hall, *Regulation of Hydraulic Fracturing Under the Safe Drinking Water Act*, 19 *BUFF. ENV'T L.J.* 1, 27–28 (2011–12) (Congress “expressly exclude[d] application of the SDWA in situations in which the fracking fluid does not contain diesel”).

⁴⁷ 42 U.S.C. §§ 15801–16539; Harris & Mikolop, *supra* note 2, at 56.

⁴⁸ OFF. OF GROUND WATER AND DRINKING WATER, ENV'T PROT. AGENCY, *EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS 7-5* (2004) (focusing on coalbed methane hydraulic fracturing, stating, at section 3.1, “By the end of 2000, coalbed methane production accounted for about 7 percent of the total United States dry gas production . . .”). In a December 2016 study, EPA provided a more cautious and nuanced assessment of fracking, stating: “Overall, we conclude activities in the hydraulic fracturing water cycle can impact drinking water resources under some circumstances. Impacts can range in frequency and severity, depending on the combination of hydraulic fracturing water cycle activities and local- or regional-scale factors.” ENV'T PROT. AGENCY, *HYDRAULIC FRACTURING FOR OIL AND GAS: IMPACTS FROM THE HYDRAULIC FRACTURING WATER CYCLE ON DRINKING WATER RESOURCES IN THE UNITED STATES 10-3* (2016).

heavily criticized: One scientist alleged that EPA’s findings were “unsupportable”⁴⁹ and that the report was “scientifically unsound.”⁵⁰

F. The Occupational Safety and Health Act

The Occupational Safety and Health Act of 1970 (OSH Act)⁵¹ was designed to assure safe and healthy working conditions. The Occupational Safety & Health Administration (OSHA), an agency of the Department of Labor, is responsible for administering the OSH Act through the promulgation and enforcement of regulations covering federal and private sector workers.⁵² These regulations contain several oil and gas related exemptions.

One such exemption relates to Lockout/Tagout (LOTO) requirements,⁵³ which “safeguard workers from hazardous energy releases”⁵⁴ by addressing “the practices and procedures necessary to disable machinery or equipment, thereby preventing the release of hazardous energy while employees perform servicing and maintenance activities.”⁵⁵ The LOTO standard in the regulations does not cover oil and gas well drilling and servicing.⁵⁶

Benzene is an organic chemical compound and carcinogen.⁵⁷ “Oil and gas drilling, production and servicing operations” are exempt

⁴⁹ Brady & Crannell, *supra* note 25, at 44–45, (citing *EPA Findings on Hydraulic Fracturing Deemed “Unsupportable”*, UNION OF CONCERNED SCIENTISTS (Dec. 7, 2006), <https://www.ucsusa.org/resources/epa-findings-hydraulic-fracturing-deemed-unsupportable>).

⁵⁰ Brady & Crannell, *supra* note 25, at 44–45, (citing *The Halliburton Loophole*, EARTHWORKS, https://www.earthworks.org/issues/inadequate_regulation_of_hydraulic_fracturing/ (last visited Nov. 4, 2021)).

⁵¹ 29 U.S.C. §§ 651–678.

⁵² *About OSHA*, OCCUPATIONAL SAFETY AND HEALTH ADMIN., <https://www.osha.gov/aboutosha> (last visited Oct. 06, 2021); OCCUPATIONAL SAFETY AND HEALTH ADMIN., ALL ABOUT OSHA 4–8 (2020).

⁵³ 29 C.F.R. § 1910.147.

⁵⁴ *Control of Hazardous Energy (Lockout/Tagout)*, OCCUPATIONAL SAFETY AND HEALTH ADMIN., <https://www.osha.gov/control-hazardous-energy> (last visited Oct. 06, 2021).

⁵⁵ OCCUPATIONAL SAFETY AND HEALTH ADMIN., OSHA FACT SHEET 1, (2002).

⁵⁶ 29 C.F.R. § 1910.147(a)(1)(ii)(E).

⁵⁷ AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, TOXICOLOGICAL PROFILE FOR BENZENE 12 (2007) (“The carcinogenicity of benzene is well documented in exposed workers.”); *Benzene*, OCCUPATIONAL SAFETY AND HEALTH ADMIN., <https://www.osha.gov/benzene> (last visited Oct. 06, 2021)

from the strict industry standard in the OSHA regulations regarding occupational exposures to benzene and are instead governed by a higher exposure rate.⁵⁸

OSHA promulgated “process safety management” rules for “highly hazardous chemicals,” including requirements for “preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals.”⁵⁹ Even though “[e]xplosions cause an unusually high number of deaths in the oil field,”⁶⁰ oil and gas operations are exempt from these requirements.⁶¹

Oil and gas related exemptions to worker safety requirements have engendered debate, with one critic claiming, “It’s mind-boggling to me how many safety standards they’re exempt from” and asking, “What’s the culture that creates?”⁶² An industry representative, however, countered that the oil and gas industry “welcome[s] strong regulation,” adding, “We resist duplicative, contradictory, confusing regulation.”⁶³

(“With exposures from less than five years to more than 30 years, individuals have developed, and died from, leukemia. Long-term exposure may affect bone marrow and blood production. Short-term exposure to high levels of benzene can cause drowsiness, dizziness, unconsciousness, and death.”).

⁵⁸ OSHA’s permissible exposure limit for benzene is 1 ppm. *See* 29 C.F.R. § 1910.1028(c)(1). This section, however, does not apply to “oil and gas drilling, production and servicing operations.” 29 C.F.R. § 1910.1028(a)(2)(vi). Instead, the oil and gas drilling, production, and servicing operations sector is allowed a higher exposure rate of 10 ppm. 29 C.F.R. § 1910.1000 Table Z-2 (8-hour time weighted average); *see also* Eric J. Esswein et al., *Preliminary Field Studies on Worker Exposures to Volatile Chemicals During Oil and Gas Extraction Flowback and Production Testing Operations*, NIOSH SCIENCE BLOG (Aug. 21, 2014), <https://blogs.cdc.gov/niosh-science-blog/2014/08/21/flowback-2/> (OSHA’s permissible exposure limit for benzene is 1 ppm for the general industry, 29 C.F.R. § 1910.1028, and 10 ppm “for the oil and gas drilling, production, and servicing operations sector.” 29 C.F.R. § 1910.1000 Table Z-2).

⁵⁹ 29 C.F.R. § 1910.119.

⁶⁰ Soraghan, *supra* note 2.

⁶¹ 29 C.F.R. § 1910.119(a)(2)(ii).

⁶² Soraghan, *supra* note 2 (quoting Dennis Schmitz, “a trainer who leads the MonDaks Safety Network, a group of safety officials from companies in the Bakken Shale region.”).

⁶³ *Id.* (quoting American Petroleum Institute President Jack Gerard).

III. Criminal enforcement

Notwithstanding these exemptions, the oil and gas industry “is subject to criminal enforcement.”⁶⁴ While a comprehensive treatment of these prosecutions is beyond the scope of this article, some examples illustrate the Department of Justice’s (Department) prosecution of environmental and worker safety crimes related to petroleum extraction activities.

For decades, the Department has secured convictions for knowing or negligent oil spills into waterways⁶⁵ under the CWA,⁶⁶ as amended by the Oil Pollution Act of 1990.⁶⁷ The failure to report oil spills has also

⁶⁴ Harris & Mikolop, *supra* note 2, at 59 (summarizing criminal enforcement of oil and gas cases).

⁶⁵ See e.g., *United States v. BP Expl. and Prod., Inc.*, No. 12-cr-292 (E.D. La. 2013); (Deepwater Horizon oil spill into Gulf of Mexico); *United States v. Citgo Petroleum Corp.*, No. 08-cr-77 (W.D. La. 2008) (refinery discharge into the Indian Marais and Calcasieu Rivers); *United States v. Exxon Shipping Co.*, No. 90-cr-15 CR (D. Alaska, 1991) (Exxon Valdez spill into Prince William Sound). Pollution of waterways caused by oilfield construction activities has also resulted in a conviction under the CWA. See *United States v. Trans Energy, Inc.*, Case No. 14-cr-43 (N.D. W.Va. 2014) (discharge of “rock, sand, soil, and other pollutants into Wolf Run” related to construction of impoundments used in furtherance of gas drilling activities).

⁶⁶ 33 U.S.C. §§ 1311(a), 1319(c)(1)-(2).

⁶⁷ Following a rash of oil spills in 1989 and 1990, including the Exxon Valdez spill in Prince William Sound, Congress enacted the Oil Pollution Act of 1990 (OPA). Under 33 U.S.C. § 1321(b)(3), discharges of oil or hazardous substances in quantities that “may be harmful” were prohibited. The Clean Water Act mandates that regulations be promulgated defining the “such quantities as may be harmful” language in 33 U.S.C. § 1321(b)(3). See 33 U.S.C. § 1321(b)(4). In response to this requirement, EPA has determined that any discharge that “violates water quality standards” or that “cause[s] a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause[s] a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines” may be harmful to the environment. 40 C.F.R. § 110.3. A “sheen” “means an iridescent appearance on the surface of water,” while “sludge” is defined as “an aggregate of oil or oil and other matter of any kind in any form other than dredged spoil having a combined specific gravity equivalent to or greater than water.” 40 C.F.R. § 110.1. Examples of convictions under this provision include *United States v. FX Drilling Co.*, No. 16-cr-20 (D. Mont. 2016) (negligent discharge of oil into an unnamed tributary to Cut Bank Creek, a tributary to Marias River);

been successfully prosecuted.⁶⁸ In addition, the CWA has been used to obtain convictions for discharges of “produced water,”⁶⁹ a ubiquitous oilfield waste described by one court as “source water trapped in underground geological formations with oil and gas” that is mixed with chemicals from the drilling process.⁷⁰

United States v. Nadel & Gussman Rockies, L.L.C., No. 13-cr-211 (D. Wyo. 2014) (discharge of “approximately 113 barrels of crude oil into Emigrant Creek”); United States v. BP Expl. (Alaska) Inc., No. 07-cr-125 (D. Alaska, 2007) (crude oil spill on North Slope of Alaska that impacted wetlands and seeped on to a frozen lake).

⁶⁸ 33 U.S.C. § 1321(b)(5) (“Any person in charge of . . . an onshore facility . . . shall, as soon as he has knowledge of any discharge of oil . . . from such . . . facility in violation of paragraph (3) of this subsection, immediately notify the appropriate agency of the United States Government of such discharge.”); Apex Oil Co. v. United States, 530 F.2d 1291 (8th Cir. 1976) (conviction of corporation for unreported oil spills into Mississippi River); United States v. Fredericks, 38 F. Supp.2d 396 (D.V.I. 1999).

⁶⁹ United States v. Hercher, No. 14-cr-243 (S.D. Ohio, 2016) (discharge of “oily brine waste water” via a flexible hose into ditch which ran into Rias Run Creek, which in turn flowed into water of the United States); United States v. Jenkins, No. 16-cr-190 (N.D. Ohio, 2016) (unpermitted discharges that included “brine and oil-based drilling mud” into stormwater drain that “flowed into an unnamed tributary of the Mahoning River, which is a water of the United States”). On August 5, 2021, a pipeline company pled guilty to violating the Clean Water Act by causing a produced water spill in excess of 29 million gallons that contaminated over 30 miles of North Dakota waterways. United States v. Summit Midstream Partners, LLC, No. 21-cr-00152 (D. N.D., 2021) (If the court accepts the plea agreement, Summit will pay a \$15 million criminal fine for negligently causing the spill and failing to make an immediate report as required).

⁷⁰ *Sierra Club, Lone Star Chapter*, 73 F.3d at 550. Produced water is also referred to as “saltwater” and “brine.”

The criminal provisions of the Refuse Act,⁷¹ enacted in 1899, also remain viable in addressing oil spills.⁷² This strict criminal liability statute⁷³ broadly applies to those who “cause” or “suffer”⁷⁴ a discharge and, thus, extends to “indirect” discharges that occur some distance from navigable waters, provided that the refuse ultimately reach

⁷¹ 33 U.S.C. § 407 (It is unlawful to cause or suffer a discharge or deposit of refuse into navigable waters of the United States). The Refuse Act is part of the Rivers and Harbors Appropriation Act of 1899, ch. 425, 30 Stat. 1151 (current version at 33 U.S.C. §§ 403–407 (1994)) (Rivers and Harbors Act). *United States v. Outboard Marine Corp.*, 549 F. Supp. 1036, 1040 (N.D. Ill. 1982) (“The Refuse Act was enacted as Section 13 of the Rivers and Harbors Act of 1899.”).

⁷² For examples of Refuse Act convictions for oil spills, see e.g., *United States v. Marietta Indus. Ent., Inc.*, No CR-2:15-166 (S.D. Ohio 2015) (oil spill into Ohio River); *United States v. Olympic Pipe Line Company*, Case No. 01-CR-338 (W.D. Wash. 2003) (pipeline rupture caused gasoline discharge to navigable water); *United States v. Esso Standard Oil Co.*, 375 F.2d 621, 623 (3d Cir. 1967) (discharge of oil on ground that flowed into sea); Judgment, *Exxon Shipping Co.*, 90-cr-15 (D. Alaska. Oct. 9, 1991) (Exxon Valdez spill).

⁷³ *United States v. White Fuel Corp.*, 498 F.2d 619, 622–24 (1st Cir. 1974); *United States v. United States Steel Corp.*, 328 F. Supp. 354, 356 (N.D. Ind. 1970). Thus, no showing of negligence or intentional conduct is required to prove a violation of the Refuse Act. *White Fuel Corp.*, 498 F.2d at 622–23; *United States v. Ashland Oil Inc.*, 705 F. Supp. 270, 276 (W.D. Pa. 1989) (violation of Refuse Act “is a strict liability crime”); *United States v. Mackin Const. Co., Inc.*, 388 F. Supp. 478, 481 (D. Mass. 1975) (Refuse Act “is not concerned with who was in charge, or, even with fault, in the ordinary sense”); *United States v. Am. Cyanamid Co.*, 354 F. Supp. 1202, 1205, (S.D.N.Y. 1973) (“Scienter is not required.”); *United States Steel Corp.*, 328 F. Supp. at 356 (“The Court holds that scienter is not an essential element under the Refuse Act.”); *United States v. Interlake Steel Corp.*, 297 F. Supp. 912, 915 (N.D. Ill. 1969).

⁷⁴ 33 U.S.C. § 407.

those waters.⁷⁵ Oil has been found to be “refuse” under the Act even when it is commercially valuable.⁷⁶

Despite the fracking exemption in the SDWA, the disposal of oilfield wastes into underground injection wells is regulated by that statute. Defendants have been convicted for injecting produced water without a permit⁷⁷ and for falsely representing that underground disposal wells had integrity.⁷⁸ A wire fraud conviction was recently obtained in a case arising out of a scheme to illegally dispose of tubular nets (“filter socks”)⁷⁹ that collected sediments from produced water.⁸⁰

⁷⁵ *White Fuel Corp.*, 498 F.2d at 622 (defendant “suffer[ed]” discharge even though it “was more of an indirect percolation than a direct flow”); *United States v. Granite State Packing Co.*, 470 F. 2d 303, 304 (1st Cir. 1972) (“it seems clear that the statute is not restricted to direct deposits”); *Esso*, 375 F.2d at 623; *Interlake Steel*, 297 F. Supp. at 915 (“Even indirect discharges of refuse into navigable waters have been held to violate the Act.”).

⁷⁶ *United States v. Standard Oil Co.*, 384 U.S. 224, 226 (1966) (“Oil is oil and whether useable or not by industrial standards it has the same deleterious effect on waterways.”); *Esso*, 375 F.2d at 622 (“spillage of a clear, iridescent [sic] petroleum product” is “refuse”); *United States v. Ballard Oil Co.*, 195 F.2d 369, 370 (2d Cir. 1952).

⁷⁷ *United States v. JACAM Mfg, LLC*, No. 15-cr-10173 (D. Kan, 2016); *United States v. King*, 660 F.3d 1071, 1074 (2011); *United States v. Evans*, No. 10-cr-17 (W.D. Pa. 2010) (unpermitted disposal of produced water (“brine”) in violation of SDWA).

⁷⁸ *United States v. Halek*, No. 15-cr-130 (D. N.D., 2017) (injections of produced water into well without a witnessed mechanical integrity test); *United States v. Lewis*, No. 09-cr-2 (WD Ky., 2009) (witness described practice of “rigging” wells to pass integrity tests).

⁷⁹ Filter socks are tubular nets used to filter wastewater at oilfield drilling sites. See Jeff McMahan, *Strange Byproduct Of Fracking Boom: Radioactive Socks*, FORBES (July 24, 2013), <https://www.forbes.com/sites/jeffmcmahon/2013/07/24/strange-byproduct-of-fracking-boom-radioactive-socks/>; Press Release, Dep’t of Just, Belgrade Man Sentenced, Fined for Wire Fraud in Dumping of Radioactive Drilling Waste (Oct. 22, 2020). The filter socks “are generally situated at the initial disposal pod, as well as the pump house, where the saltwater flows prior to being pumped into the well.” Indictment at 2, *United States v. Ward*, No. 17-cr-6 (D. Mont. Apr. 6, 2017), ECF No. 4.

⁸⁰ Indictment, *supra* note 79, at 6 (Ward “illegally and improperly left the filter socks at a former gas station”); Plea Agreement, *Ward*, No. 17-cr-6, ECF No. 46; Judgment, *Ward*, No. 17-cr-6, ECF No. 60.

Disposing of hazardous wastes in injection wells authorized for oil and gas wastes can constitute a crime under both the SDWA and the RCRA.⁸¹ The RCRA oil and gas exemption is limited to “Exploration and Production”⁸² wastes and does not extend to non-exempt RCRA wastes such as “unused fracturing fluids or acids, spent solvents, spilled chemicals, and used equipment lubricating oils and hydraulic fluids.”⁸³

The oil industry is subject to prosecution for criminal violations of the CAA, including significant penalties for endangerment⁸⁴ as well as violating the general duty clause⁸⁵ and risk management plan (RMP) regulations.⁸⁶ The CAA also “limits air emissions from engines, gas processing equipment, and other sources that are associated with drilling and production.”⁸⁷ The Department has secured a number of convictions under the CAA for oil and gas related crimes, such as the release of hazardous air pollutants,⁸⁸ including a deadly release from

⁸¹ *United States v. Overholt*, 307 F.3d 1231 (10th Cir. 2002); *United States v. Tex. Oil and Gathering*, No. 07-cr-466 (S.D. Tex. 2010) (RCRA and conspiracy to violate SDWA conviction where defendant disposed of hazardous waste in a Class II injection well, which was permitted to receive only fluids related to oil and gas storage or production). In a related situation, a defendant was convicted for making a false document purporting that a produced water injection well was authorized for disposal of industrial waste. *See United States v. Gardner*, No. 19-cr-40074 (S.D. Ill. 2019) (false statement under 18 U.S.C. § 1001(a)(3) by creating letter purportedly from Illinois Department of Natural Resources and forging signature).

⁸² 40 C.F.R. § 261.4(b)(5); *Crude Oil and Natural Gas Waste*, ENV’T PROT. AGENCY, <https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/html/index-16.html> (updated Apr. 19, 2016).

⁸³ Harris & Mikolop, *supra* note 2, at 59 (citing 53 Fed. Reg. 25454 (July 6, 1988)).

⁸⁴ 42 U.S.C. §§ 7413(c)(5) (knowing endangerment), 7413(c)(4) (negligent endangerment).

⁸⁵ 42 U.S.C. §§ 7413(c)(1), 7412(r)(l).

⁸⁶ 42 U.S.C. § 7412(r)(7)(A); 40 C.F.R. Part 68.

⁸⁷ Harris & Mikolop, *supra* note 2, at 59, (citing 40 C.F.R. §§ 63.760–63.779, 63.6580–63.6675).

⁸⁸ *United States v. KTX Properties*, No. 16-cr-75-002 (E.D. Tex. 2016). In *United States v. Peters*, the defendants were convicted of violating the CAA relating to the release of benzene from a tank at a petrochemical production plant, which was reversed on unrelated grounds due to the Judge’s improper

an explosion involving sulfuric acid,⁸⁹ as well as a violation of a CAA Title V permit⁹⁰ and a refinery explosion that killed fifteen employees, which resulted in a felony conviction for violating the RMP provision of the CAA.⁹¹ In a recent significant case, the president and CEO of an oil processing facility was convicted of violating the general duty clause and knowing endangerment provisions of the CAA arising out of an explosion and fire caused by hazardous vapors from a natural gas condensate delivery.⁹²

The Department has also obtained convictions in oil and gas related worker safety crimes. For example, a worker tasked to scrape crude oil from rail cars was asphyxiated due to a lack of a certified respirator, resulting in the employer's conviction under the OSH Act.⁹³ In another case, a well completion and services company was convicted of an OSH Act violation arising out of the death of an employee who welded on a tanker that had not been cleaned or vented and exploded when hydrocarbon vapors inside the tanker ignited.⁹⁴ The Department also has the option of pursuing traditional criminal prosecutions when

ex parte contact with a juror. No. 98-cr-129 (E.D. Tex. 2002), *rev'd on other grounds*, 349 F.3d 842 (5th Cir. 2003).

⁸⁹ See Deborah L. Harris, *Achieving Worker Safety Through Environmental Crimes Prosecutions*, 59 U.S. ATT'YS' BULL., 58, 60 (July 2011) ("a 450,000-gallon tank containing spent sulfuric acid exploded when flammable vapors reached a heat source during repair of a catwalk above the tank. The explosion killed one employee and injured nine others.") (citing *United States v. Motiva Enters., LLC*, No. 05-CR-21 (D. Del. 2003)).

⁹⁰ *United States v. Ramsey Properties LP*, No. 16-cr-75-4 (E.D. Tex. 2016).

⁹¹ *United States v. BP Products N. Am., Inc.*, 610 F. Supp. 2d 655 (S.D. Tex. 2009).

⁹² *United States v. Margiotta*, No. 17-cr-143 (D. Mont. 2017) (CAA violations where defendant was aware of the inadequate ventilation of hydrocarbon vapors released from the oil reclamation equipment operations, did not have explosion-proof wiring for the facility, and continued to accept shipments of flammable natural gas condensate that ultimately led to an explosion on December 29, 2012 that burned the facility to the ground and injured employees); see also Michael R. Fisher, *When Pollution Threatens the Workplace: Occupational Safety and Environmental Endangerment Crimes*, 68 DOJ J. FED. L. & PRAC., no. 2, 2020, at 163 (Margiotta ordered the facility to open in 2012, despite knowing it lacked appropriate electrical wiring, ventilation, and other safety measures).

⁹³ *United States v. Dana Container, Inc.*, No. 21-cr-64 (M.D. Pa. 2021).

⁹⁴ *United States v. C&J Well Services, Inc.*, No. 19-cr-79 (D. N.D. 2019).

false information is provided to OSHA during its investigations of petroleum industry worker injuries or fatalities.⁹⁵ The criminal enforcement of hazardous materials laws is another available tool in worker safety cases.⁹⁶

IV. Conclusion

The oil and gas industry has been granted several exemptions from the requirements in pollution and workers safety laws. While these exemptions impact cases, the Department will continue to pursue oilfield crimes consistent with the law, the evidence, and the Department's policies.

⁹⁵ In *United States v. Jacobson*, a welder flame pierced the skin of a tanker previously used to haul flammable petroleum, igniting residual flammable material and severely burning an employee. Plea Agreement at 5–6, *United States v. Jacobson*, No. 21-cr-149 (D. Id. May 13, 2021), ECF No. 2. After the explosion, the defendant falsely stated to an OSHA inspector that the injured employee “was merely an ‘observer,’ not an employee.” *Id.* at 6. The defendant pled guilty to making a false statement under 18 U.S.C. § 1001 and violating the Hazardous Materials Transportation Act, 49 U.S.C. § 5124(a), which was accepted by the District Judge, who issued an order stating that the defendant “is found to be GUILTY” of the charged crimes. *Id.*; Report and Recommendation, *Jacobson*, No. 21-cr-149, ECF No. 12; Order, *Jacobson*, No. 21-cr-149, ECF No. 15. Similarly, in *United States v. Reisinger*, the defendant pleaded guilty to obstructing an OSHA investigation by falsely telling an OSHA inspector, who was investigating a welding tanker explosion that killed an employee, that the defendant did not know of the hazards and composition of the produced water that had been transported in the tanks, and that he thought “just water” was in the tanks. Plea Agreement at 6–8, *United States v. Reisinger*, No. 19-cr-240 (D. N.D. Feb. 16, 2021), ECF No. 30. On March 8, 2021, the District Court accepted Reisinger’s plea of guilty to a charge of Obstruction of an OSHA Proceeding in violation of 18 U.S.C. § 1505. *Id.*; Indictment, *Reisinger*, No. 19-cr-240, ECF No. 2; Minute Entry, *Reisinger*, No. 19-cr-240, ECF No. 33.

⁹⁶ Jennifer A. Whitfield, *Protecting Workers: Enforcement of Hazardous Materials Laws*, 68 DOJ J. FED. L. & PRAC. no., 2020 at 127; see also, *United States v. Woody’s Trucking, LLC*, No. 17-cr-00138 (D. Mont. 2018); *United States v. Steen*, No. 14-cr-111 (D. Mont. 2015) (defendants convicted of violating Hazardous Materials Transportation Act (HMTA) relating to transportation of natural gas condensate without required placards, which subsequently ignited, injuring three employees).

About the Author

Christopher J. Costantini is a Senior Trial Attorney in the Environmental Crimes Section, where he has handled a variety of environmental and worker safety cases. Before coming to the Department, Mr. Costantini was a state environmental crimes prosecutor in Ohio and Pennsylvania.

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Renewable Energy: The Intersection of Wildlife Protection and Climate Change Action

Elinor Colbourn
Senior Counsel for Wildlife Programs
Environmental Crimes Section

Brian Millsap
National Raptor Coordinator
Division of Migratory Bird Management
U.S. Fish and Wildlife Service

Eliza Savage
Retired from
Division of Migratory Bird Management
U.S. Fish and Wildlife Service

What is the use of a house if you haven't got a tolerable planet to put it on?—Henry David Thoreau

I. Introduction

Driven by an urgent focus on climate change, the U.S. energy sector has been transforming rapidly. Our energy is derived increasingly from renewable sources, primarily solar and wind. This conversion is accelerating, and with it comes benefits from a climate change perspective and increasing impacts on wildlife.

Historically, the energy sector—oil, gas, and electric—has collided with avian, as well as bat and other wildlife, welfare. Power lines electrocute raptors, oil gas impoundments and refinery tanks trap and drown birds, and electric lighting on places like athletic fields, cell towers, and the 9/11 memorial transfix birds until they fly to exhaustion and death. For each of these challenges, industry and research scientists have found solutions that industry is gradually implementing—sometimes prompted by prosecutions for the unpermitted killing of wildlife. Power lines are retrofitted to prevent electrocutions; industrial ponds are drained, netted, or covered with bird balls; refinery tanks are maintained to exclude wildlife; streetlights are shaded; and the 9/11 memorial lights are intermittently turned off during high migration nights.

The growth of solar and wind power presents new challenges to the welfare of wildlife, particularly with the trend to larger installations modeled on the current energy grid, rather than more localized, urban, and building-specific generation. The turbines of a single rural wind facility, if poorly sited, could kill hundreds of eagles and bats, thousands of other migratory birds, and millions of insects during its 30-year commercial lifespan. According to the U.S. Fish and Wildlife Service (USFWS):

The most comprehensive and statistically sound estimates show that bird deaths from turbine collisions are between 140,000 and 500,000 birds per year. As wind energy capacity increases under the DOE's mandate (a six-fold increase from current levels), statistical models predict that mean bird deaths resulting in collisions with turbines could reach 1.4 million birds/year.¹

These numbers are based on estimates available as of early 2018. The numbers have risen since then.

As with the growth of prior energy sectors, there are ways to reduce wildlife impacts, but they do not come without effort, attention, and costs. Enforcement of existing wildlife protection laws will play a role in ensuring that industry incorporates those costs in initial planning and takes all reasonable and legally required steps to avoid wildlife impacts. The authors of this article are optimistic that the United States has the ingenuity and the commitment to enjoy both clean energy and wildlife in compliance with all applicable laws.

This article explores the intersection of the growing wind energy sector and wildlife welfare, viewed through the existing legal framework for authorizing take of wildlife.

¹ *Wind Turbines*, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/wind-turbines.php> (last visited Oct. 04, 2021).

II. Overview of wind energy and its impacts on eagles, other migratory birds, and bats

A. Industry trends

The wind industry is rapidly growing. In 2006, wind power accounted for just 0.7% of electricity generated in the United States. By 2020, it contributed 8.4%. The Department of Energy has modeled scenarios for having wind power account for 20% of electricity generation by 2030. Since 2005, an average of 3,000 new wind turbines have been constructed in the United States each year.² There are now more than 67,000 wind turbines in over 1,500 wind power facilities in 44 states, Puerto Rico, and Guam.³ As turbine technology advances, more locations will become financially feasible for wind facilities, and the impact of wind power will be more widespread.

1. Preferred sites

Wind turbines are best placed where the annual average wind speed is at least 9 miles per hour (mph) for small wind turbines or 13 mph for utility-scale turbines. Favorable sites include the tops of smooth, rounded hills; open plains and water; and mountain gaps that funnel and intensify wind. Wind resources are generally more favorable for electricity generation at higher elevations. Thus, large wind turbines

² *How Many Wind Turbines Are Installed in the U.S. Each Year?*, U.S. GEOLOGICAL SURV., https://www.usgs.gov/faqs/how-many-wind-turbines-are-installed-us-each-year?qt-news_science_products=0#qt-news_science_products (last visited Oct. 04, 2021).

³ *How Many Turbines are Contained in the U.S. Wind Turbine Database?*, U.S. Geological Surv., https://www.usgs.gov/faqs/how-many-turbines-are-contained-us-wind-turbine-database?qt-news_science_products=0#qt-news_science_products (last visited Nov. 12, 2021). There are nearly 10,000 utility scale solar power facilities operating or under construction in the United States. *Utility-Scale Solar*, SOLAR ENERGY INDUS. ASS'N., <https://www.seia.org/initiatives/utility-scale-solar-power> (last visited Nov. 12, 2021). The Ivanpah solar facility in California alone contains over 300,000 large mirrors, spread across 35,000 acres, collecting the sun's power. BRIGHT SOURCE LIMITLESS, IVANPAH PROJECT FACTS (n.d.). Solar, too, has serious impacts on wildlife. *Utility-Scale Solar*, SOLAR ENERGY INDUS. ASS'N., <https://www.seia.org/initiatives/utility-scale-solar-power> (last visited Nov. 11, 2021).

are placed on towers that range from 500 feet to 900 feet tall.⁴ Unfortunately, eagles and other wildlife also favor many of these same locations and elevations.

To identify ideal locations for wind power generation, energy companies spend years conducting wind tests. Typically, wind data is collected from numerous meteorological stations on a site for two to three years. The energy companies use the results of these studies to determine whether a wind power facility at the site would produce enough electricity to be profitable. This assessment includes not just an estimate of production, but also consideration of additional factors, such as the anticipated price of selling the power, available tax credits, the cost of using the land, and the predicted costs of mitigating environmental impacts. The wind tests also inform where to place individual turbines within the site for maximum energy production.⁵

Industry, for the most part, has not yet afforded the same importance and timing to the assessment of avian impacts and related minimization and mitigation costs as it does to the wind studies. Most developers conduct the wind studies first without conducting the two years of avian surveys and studies recommended under the Land-Based Wind Energy Guidelines issued by the USFWS in 2012, which would enable them to assess the true viability of a site. It is generally only after site selection is finalized that avian studies are commenced, often making it impossible to issue any eagle take permits until after the facility has started operations and dramatically reducing opportunities to effectively minimize takings. By then, companies have finalized budgets based on incomplete information and without funding for the necessary mitigation. There is a resulting domino effect: Where one company fails to minimize its takings, subsequent companies may face increased conservation requirements to ensure cumulative impacts to eagles are sustainable.

⁴ *Wind Explained: Where Wind Power is Harnessed*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/energyexplained/wind/where-wind-power-is-harnessed.php> (last visited Nov. 11, 2021).

⁵ See Vaughn Nelson & Kenneth Starcher, *How to Select a Location for a Wind Farm*, ROUTLEDGE TAYLOR & FRANCIS GROUP (Sept. 30, 2019), <https://www.routledge.com/blog/article/how-to-select-a-location-for-a-wind-farm>.

2. Increased size and area

The trend in the wind industry is to build even larger turbines in facilities covering even larger areas. Between 1998 and 2018, the average diameter of the sweep area of a turbine increased from 50 meters to 115 meters.⁶ The largest wind facility in the United States is under construction now in Wyoming and will consist of 900 turbines spread over 320,000 acres. The turbines may be “up to 328 feet tall, from base to nacelle [(the hub of the turbine blades)], in order to capture more energy per turbine. [The] blades can [each] be up to 200 feet long.”⁷

One hypothesis is that fewer, larger turbines will decrease the impact on eagles and other large raptors. The most important factors in the lethality of a wind farm for eagles, however, appear to be the number of eagles present in the area at any given time, the placement of the turbines, and the total area swept by the turbines—not simply the number of turbines. Thus, in a similar area, five smaller turbines may cause less harm than one large one if it swept a comparable total area.

As noted above, in addition to the increase in turbine size and facility expense, the sheer number of wind facilities in the country is anticipated to grow significantly in the coming years.

3. Offshore installations

Wind power installations will increasingly be placed offshore. Although the costs are higher, they are often more palatable to the public than onshore facilities. There are currently 162 offshore wind projects in some stage of planning or construction in the United States; just two are operational. The largest planned facility will be on 112,000 acres off the coast of Virginia, with construction anticipated to be completed in 2026. Offshore facilities come under the

⁶ *Top Trends in Wind Technology*, OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY (Aug. 12, 2019), <https://www.energy.gov/eere/wind/articles/top-trends-wind-technology>.

⁷ *What Does the Project Look Like?*, POWER CO. OF WYO., <http://www.powercompanyofwyoming.com/about/appearance.shtml> (last visited Oct. 04, 2021).

auspices of the Bureau of Ocean Energy Management, which oversees leases on the outer continental shelf.⁸

While significant work is ongoing, the risks that offshore turbines pose to seabirds and fisheries have not been rigorously documented or quantified.⁹ While assessing mortality numbers resulting from turbines located on land is difficult (studies have shown that most carcasses are never found), studying them at sea, where carcasses sink out of sight and are carried by currents, is even more challenging.

B. Documented impacts and causes

1. Eagles

The most publicized impact of wind energy on eagles is direct mortality caused by collisions with turbine blades.¹⁰ Rates of eagle mortality at wind energy facilities vary greatly. Eagle abundance is one contributing factor, and the USFWS uses this as a major component of the model used to predict the risk specific wind energy projects pose to eagles.¹¹ Other factors that may contribute to risk are proximity to nest sites, communal roosts, and migration pathways; the presence and abundance of eagle prey; local topography; turbine size and height; and behaviors of eagles that enter the project area.¹²

The population-level impacts of wind energy development on eagles are poorly understood. Bald eagle populations in the conterminous United States are increasing,¹³ and mortalities of this species at wind-energy facilities are unlikely to noticeably affect populations. Golden eagle populations are not increasing, however, and the

⁸ BUREAU OF OCEAN ENERGY MGMT., www.boem.gov (last visited Oct. 04, 2021).

⁹ See Rhys E. Green, et al., *Lack of Sound Science in Assessing Wind Farm Impacts on Seabirds*, 53 J. APPLIED ECOLOGY 1635 (2016).

¹⁰ Joel E. Pagel, *Bald Eagle and Golden Eagle Mortalities at Wind Energy Facilities in the Contiguous United States*, 47 J. RAPTOR RSCH. 311–315 (2013).

¹¹ Leslie New et al., *A Collision Risk Model to Predict Avian Fatalities at Wind Facilities: An Example Using Golden Eagles, Aquila Chrysaetos* (Antoni Margalida ed. 2015).

¹² DIV. OF MIGRATORY BIRD MGMT., U.S. FISH AND WILDLIFE SERV., *EAGLE CONSERVATION PLAN GUIDANCE: MODULE 1—LAND-BASED WIND ENERGY VERSION 2* (2013) [hereinafter *EAGLE CONSERVATION PLAN GUIDANCE*].

¹³ U.S. FISH AND WILDLIFE SERV., U.S. FISH AND WILDLIFE SERVICE FINAL REPORT: BALD EAGLE POPULATION SIZE: 2020 UPDATE (2021).

USFWS estimated that current levels of anthropogenic mortality of this eagle may be near levels that could cause population decline.¹⁴ Eagles are long lived and slowly reproduce, so the impacts on eagle populations are seen with lower rates of mortality than, for example, for many songbirds. Across the continent, deaths due to turbine collisions are not a leading source of golden eagle mortality, but they add incrementally to the large number of deaths from other human causes like shooting, electrocutions, and purposeful and accidental poisoning. In local areas, however, wind turbines can be a substantial source of mortality for golden eagles. For example, in the Altamont Wind Resource Area (AWRA) in California, from 1998 to 2007, between 55 and 65 golden eagles were killed by turbine collisions annually.¹⁵ Many of these eagles were migrants or emigrants from outside the local area.¹⁶ Despite the high level of mortality in the AWRA, it is estimated that local productivity was sufficient to offset it and maintain a stable local population.¹⁷

Wind energy facilities might also affect eagles by changing the availability of suitable habitat and by changing the abundance of local prey populations. There are anecdotal accounts of positive and negative effects of both, however, so there does not appear to be a consistent pattern.

2. Other migratory birds

Recent estimates of the number of migratory birds killed annually in the United States by wind turbines range from 140,000 to over 500,000.¹⁸ Given the difficulty of verifying such estimates through finding the actual carcasses of small birds, the number may be higher. This number, while high, pales in comparison to the number killed by

¹⁴ BRIAN A. MILLSAP ET AL., U.S. FISH AND WILDLIFE SERV., BALD AND GOLDEN EAGLES: POPULATION DEMOGRAPHICS AND ESTIMATION OF SUSTAINABLE TAKE IN THE UNITED STATES, 2016 UPDATE (2016).

¹⁵ W. Grainger Hunt et al., *Quantifying the demographic cost of human-related mortality to a raptor population* 22 (Antoni Margalida ed. 2017).

¹⁶ Todd E. Katzner et al, *Golden Eagle Fatalities and the Continental-scale consequences of local wind-energy generation: Continental Effects of Wind-Energy Production* 31 CONSERVATION BIOLOGY 406 (2016).

¹⁷ Hunt et al., *supra* note 15.

¹⁸ *Wind Turbines*, U.S. FISH AND WILDLIFE SERV., <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/wind-turbines.php> (updated Apr. 18, 2018).

domestic cats (estimated to be in the range of 1.3 to 4.0 billion a year) or by collisions with buildings (365 million–1 billion) each year.¹⁹ The impacts of wind turbines, however, add to the cumulative, and staggering, deaths of birds due to anthropogenic causes.

3. Endangered species

Between 2009 and June 2021, 20 endangered Indiana bats were documented as being killed by wind turbines throughout their range.²⁰ The total number is likely significantly higher as not all facilities search for dead bats, and even those that do find only a small proportion of the bats that are killed.

Other ground dwelling animals and plants are impacted by the construction of these facilities, the transmission lines, and the roads used for operating the facilities. The physical plant of the facility may cause species, such as prairie chickens and sage grouse, to leave the area.²¹

4. Other species

While turbine strikes are an incremental, additional source of anthropogenic deaths of birds, they are the primary threat to migratory bats, particularly in areas where white-nose fungus has not yet affected bat populations. In 2017, scientists predicted that, if wind power expansion continues apace, the hoary bat will become extinct.²²

Significant impacts have also been documented on insects. It has been estimated that a single wind turbine in Germany kills some 40

¹⁹ Scott R. Loss, et al., *The Impact of Free-Ranging Domestic Cats on Wildlife of the United States*, NATURE COMM'N (2013); Christine Sheppard & Bryan Lenz, *Birds Flying Into Windows? Truths About Birds & Glass Collisions from ABC Experts*, AM. BIRD CONSERVANCY (Mar. 6, 2019), <https://abcbirds.org/blog/truth-about-birds-and-glass-collisions/>.

²⁰ Lori Pruitt & Marissa Reed, *Indiana Bat Fatalities at Wind Energy Facilities*, U.S. FISH AND WILDLIFE SERV., <https://www.fws.gov/midwest/wind/wildlifeimpacts/inbafatalities.html> (Sept. 2021).

²¹ *Wind Energy*, U.S. FISH AND WILDLIFE SERV., <https://www.fws.gov/ecological-services/energy-development/wind.html> (last visited Oct. 04, 2021).

²² Winifred F. Frick et al., *Fatalities at Wind Turbines May Threaten Population Viability of a Migratory Bat*, 209 BIOLOGICAL CONSERVATION 172 (2017).

million insects each year.²³ Dr. Franz Trieb of the Institute of Engineering Thermodynamics concludes that a “rough but conservative estimate of the impact of wind farms on flying insects in Germany” is a “loss of about 1.2 trillion insects of different species per year, which” could be relevant for population stability.²⁴

Wind turbine impacts extend beyond mortality. One study concluded that some species of invasive insects use wind turbine structures for overwintering, potentially helping these often-damaging species expand their range.²⁵

C. Known and anticipated ways to avoid, minimize, and mitigate impacts

Avoiding, minimizing, and mitigating the known wildlife impacts of wind turbines is challenging. To date, there are no silver-bullet solutions. But initial, if partial, answers are emerging. For example, altering the cut in speed—the wind speed at which the turbine starts spinning—can reduce bat mortality by up to 50% or more.²⁶ Systems that jam bats’ echolocation have also been tested as a means of discouraging bats from entering the rotor-swept area. One Norwegian study recently reported a 72% reduction in avian deaths at a wind site after one blade of each turbine was painted black.²⁷

Means of avoiding, minimizing, and mitigating eagle deaths are of particular concern under U.S. law due to the prohibitions of the Bald and Golden Eagle Protection Act.

²³ Christian C. Voigt, *Insect Fatalities at Wind Turbines As Biodiversity Sinks*, 3 CONSERVATION SCI. & PRAC. at 1 (2021).

²⁴ FRANZ TRIEB, INST. OF ENG’G THERMODYNAMICS, STUDY REPORT: INTERFERENCE OF FLYING INSECTS AND WIND PARKS 2, 22 (2018).

²⁵ K. Dudek et al., *Wind Turbines as Overwintering Sites Attractive to an Invasive Lady Beetle, Harmonia axyridis Pallas (Coleoptera: Coccinellidae)*, 69 COLEOPTERISTS BULL. 665 (2015).

²⁶ BATS IN THE ANTHROPOCENE: CONSERVATION OF BATS IN A CHANGING WORLD 310 (2016 Christian C. Voigt et al. eds).

²⁷ Roel May et. al., *Paint it Black: Efficacy of Increased Wind Turbine Rotor Blade Visibility to Reduce Avian Fatalities*, ECOLOGY & EVOLUTION, July 26, 2020, at 8927.

1. Siting decisions

Carefully siting wind energy facilities may be the single most effective measure to minimize wildlife impacts. For example, siting facilities in areas of low eagle abundance is the most important approach for minimizing the impact of wind energy development on eagles.²⁸ Both bald and golden eagles predictably associate with certain landscape and environmental features,²⁹ and widely available data sets, such as eBird from the Cornell Laboratory of Ornithology, can be used to identify fine-scale patterns of abundance.³⁰ On a finer scale, locating wind energy facilities away from eagle foraging areas, such as prairie dog colonies or lakes, reduces the potential for negative interactions. Thus, knowledge of eagle use patterns and prey abundance can help wind project developers early in the development process to avoid regions and landscape features with high eagle use.

Once a development site is selected, project developers still have some opportunity to reduce impacts by placing turbines within the project footprint in areas less likely to be used by eagles. The USFWS requires applicants for eagle incidental take permits for wind energy facilities to conduct two years of eagle surveys at proposed project sites to both inform the estimates of eagle fatalities for the site and to possibly guide turbine micro-siting decisions to minimize impacts at the scale of the wind-project footprint.³¹ Micro-siting of individual turbines can help reduce impacts to eagles, but not as effectively as selecting a site with low eagle use to begin with.

2. Curtailment

Several actions can reduce eagle mortality at a wind energy facility once it is operating. Standard recommendations include vigilant removal of all wildlife and livestock carcasses from the project site that might attract eagles, ensuring all power distribution lines are

²⁸ EAGLE CONSERVATION PLAN GUIDANCE, *supra* note 12.

²⁹ *E.g.*, Ryan M. Nielson et al., *Modeling Late-Summer Distribution of Golden Eagles (Aquila chrysaetos) in the Western United States*, Plos One (2016).

³⁰ Viviana Ruiz-Gutierrez et al., *A Pathway for Citizen Science Data to Inform Policy*, 58 J. Applied Ecology 1104 (2021).

³¹ U.S. FISH AND WILDLIFE SERV., PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR THE EAGLE RULE REVISION (2016) [hereinafter ENVIRONMENTAL IMPACT STATEMENT].

built in a manner that minimizes electrocution risk to raptors,³² and managing vehicle speeds on the site.³³ Curtailing the operation of turbines when they pose an immediate risk to an eagle has also been shown to potentially reduce eagle mortality.³⁴ Curtailment has been implemented in at least three different ways. First, human bio-monitors have been used to detect approaching eagles and then cut operations of a turbine if an eagle gets too close.³⁵ Second, automated radar-based detection systems have been developed, where a radar unit and associated software detects and identifies incoming birds and shuts down a turbine if a target identified as an eagle gets too close.³⁶ Finally, proactive seasonal curtailment of turbines situated close to nest sites or migration corridors, or diurnal curtailment in high eagle density locations, have been proposed as a means to reduce eagle mortalities.³⁷ The effectiveness of curtailment has been the subject of several recent and ongoing studies, and while there seems little doubt that they do reduce fatalities, by how much remains debatable.³⁸

3. Mitigation limits

The USFWS has established overall regional take limits for bald and golden eagle permits, and any authorized take that exceeds these limits must be offset with mitigation.³⁹ Because of the species' status, the take limit for golden eagles is currently set at zero. Thus, all permits for take of this species require compensatory mitigation to achieve a "no-net loss" threshold (that is, for each golden eagle authorized to be taken by a permit, the permittee must fund or

³² AVIAN POWER LINE INTERACTION COMM., SUGGESTED PRACTICES FOR AVIAN PROTECTION ON POWER LINES: THE STATE OF THE ART IN 2006 (2006).

³³ EAGLE CONSERVATION PLAN GUIDANCE, *supra* note 12.

³⁴ Christopher J. W. McClure et al., *Eagle Fatalities are Reduced by Automated Curtailment of Wind Turbines*, 58 J. APPLIED ECOLOGY 446 (2021) [hereinafter McClure et al., *Automated Curtailment*].

³⁵ See Edward B. Arnett & Roel F. May, *Mitigating Wind Energy Impacts on Wildlife: Approaches for Multiple Taxa*, 10 HUMAN-WILDLIFE INTERACTIONS 28 (2016).

³⁶ Christopher J.W. McClure et al., *Automated Monitoring for Birds in Flight: Proof of Concept With Eagles at a Wind Power Facility*, 224 BIOLOGICAL CONSERVATION 26 (2018).

³⁷ EAGLE CONSERVATION PLAN GUIDANCE, *supra* note 12.

³⁸ *E.g.*, McClure, et al., *Automated Curtailment*, *supra* note 34.

³⁹ ENVIRONMENTAL IMPACT STATEMENT, *supra* note 31.

undertake work to eliminate another predictable golden eagle fatality). The concept behind this requirement is to offset the permitted unavoidable mortality of eagles by commensurately reducing take from another cause for which solutions exist.

The only offsetting mitigation measure implemented so far for eagle take permits is electrocution abatement. The USFWS estimates that around 500 golden eagles are electrocuted annually in the western United States.⁴⁰ There are proven methods to greatly reduce electrocution rates of eagles and other raptors on power distribution lines, but because these measures are expensive, electric utility companies are only practicably able to retrofit a small fraction of their poles annually. Golden eagle wind energy incidental take permittees accomplish their mitigation requirements by providing supplemental funds to electric utilities so that the rate of power-pole retrofitting is increased from what the electric utilities alone can accomplish. Current regulations also allow permittees to accomplish their mitigation using approved third parties and in-lieu fee programs.⁴¹ Two such programs have been established so far.⁴² The USFWS uses a resource equivalency analysis (REA) to determine the amount of mitigation that must be delivered to offset the authorized take.⁴³

There is considerable interest in developing other forms of mitigation for golden eagles.⁴⁴ Two other golden eagle mortality factors show promise in this regard. First, golden eagles are susceptible to secondary lead poisoning by ingesting lead bullet fragments from big game remains left in the field by hunters. Jean Fitts Cochrane and her coauthors developed a model that can be used to predict the benefits of voluntary lead bullet replacement programs, paving the way for development of an REA for this mitigation

⁴⁰ MILLSAP ET AL., *supra* note 14.

⁴¹ ENVIRONMENTAL IMPACT STATEMENT, *supra* note 31.

⁴² *Bald Eagle and Golden Eagle Electrocution Prevention in-Lieu Fee Program*, EAGLE ELECTROCUTION SOLUTIONS, <https://www.eaglemitigation.com/>; *Eagle Protection and Offset Program*, MITIGATION BANKING USA, <https://info.burnsmcd.com/mitigationbankingusa/projects/eagle-protection-and-offset-program>.

⁴³ EAGLE CONSERVATION PLAN GUIDANCE, *supra* note 12.

⁴⁴ See, e.g., Taber D. Allison, *A Review of Options for Mitigating Take of Golden Eagles at Wind Energy Facilities*, 51 J. RAPTOR RSCH. 319 (2017).

measure.⁴⁵ Second, a large number of golden eagles are killed annually on highways and train tracks while feeding on vehicle-killed animals.⁴⁶ Eric Lonsdorf and his coauthors proposed an approach for quantifying the benefits of a program to remove carrion from highways to reduce this form of golden eagle mortality.⁴⁷ The USFWS anticipates that both approaches will soon be additional mitigation options for eagle incidental take permittees.

III. Current legal framework and guidelines

A. Guidelines

1. Land-based wind energy guidelines

In 2012, after working with a federal advisory committee that included industry, conservation non-governmental organizations, federal and state agencies, tribes, and academia, the USFWS released the Land-Based Wind Energy Guidelines (WEGs).⁴⁸ The WEGs promote communication between developers and government entities and are intended as a tool for conserving species of concern, specifically including migratory birds; bats; bald and golden eagles and other birds of prey; prairie chickens and sage grouse; and species that are candidates, proposed, or listed under the Endangered Species Act, and their habitats. Adherence to the WEGs is voluntary.⁴⁹

The WEGs create a tiered approach for a developer to identify, assess, and minimize the potential risks to wildlife. Under tiers I–III, the developer gathers data in increasing detail to inform the decision to develop, or not to develop, a particular wind energy project and works with government entities to minimize impacts from the project. These tiers are to be completed before operations begin. Under tiers IV and V, post-construction studies are conducted to document and

⁴⁵ See Jean Fitts Cochrane et al, *Modeling with Uncertain Science: Estimating Mitigation Credits from Abating Lead Poisoning in Golden Eagles*, 25 *Ecological Applications* 1518 (2015).

⁴⁶ See MILLSAP ET AL, *supra* note 14, at 13.

⁴⁷ See Eric Lonsdorf et al, *Modeling Golden Eagle-Vehicle Collisions to Design Mitigation Strategies*, 82 *J. Wildlife Mgmt.*, no. 8, 2018.

⁴⁸ U.S. FISH & WILDLIFE SERV., *LAND-BASED WIND ENERGY GUIDELINES* (2012).

⁴⁹ *Id.* at vii.

better estimate actual impacts and, if needed, identify additional steps to take to reduce impacts. The WEGs also provide best management practices; guidance on mitigation and effective implementation; and refer developers of projects with identified risk to eagles to the Eagle Conservation Plan Guidance.

2. Eagle conservation plan guidance

The USFWS issued Eagle Conservation Plan (ECP) Guidance in draft in January 2011 and in final in April 2013. Like the WEGs, adherence to the ECP Guidance is voluntary.⁵⁰

The ECP Guidance provides specific instructions for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities. It is also intended to assist the industry in providing the biological data needed to support eagle take permit applications for facilities that may pose a risk to eagles under the Bald and Golden Eagle Protection Act (BGEPA). Because, as discussed below, the BGEPA prohibits take of eagles without a permit rather than requires a facility predicted to take eagles to obtain a permit, adherence to the ECP Guidance, like the WEGs, is voluntary. However, adherence, or a lack thereof, may be a factor considered when prosecutors determine how to exercise their discretion.

B. Bald and Golden Eagle Protection Act

1. Prohibitions

The BGEPA prohibits the take of bald eagles and golden eagles either knowingly or with wanton disregard for the consequences of one's actions, except pursuant to federal regulations.⁵¹ "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb."⁵²

The first violation is a misdemeanor, but any second or subsequent conviction, even within the same charging document, is a felony.⁵³

The BGEPA authorizes the Secretary of the Interior to issue regulations to permit the "taking" of eagles for various purposes, including the protection of "other interests in any particular locality," provided the taking is "compatible with the preservation of the bald

⁵⁰ EAGLE CONSERVATION PLAN GUIDANCE, *supra* note 12, at ii.

⁵¹ 16 U.S.C. § 668–668d.

⁵² 50 C.F.R. § 22.3; 16 U.S.C. § 668c.

⁵³ *United States v. Street*, 257 F.3d 869 (8th Cir. 2001).

eagle or the golden eagle.”⁵⁴ Federal regulations define “compatible with the preservation of” eagles to mean “consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units and the persistence of local populations throughout the geographic range of each species.”⁵⁵

2. Permitting framework

The BGEPA’s implementing regulations provide for permits to take or possess eagles for limited purposes authorized by the statute. Under the BGEPA, incidental take includes disturbance as well as injuring or killing. BGEPA regulations provide that the USFWS may issue permits authorizing the incidental take of eagles where the taking is associated with, but not the purpose of, an activity; cannot practicably be avoided; and is compatible with the preservation of eagles.

To comply with the statutory and regulatory requirement that permitted take be compatible with eagle preservation, each permit under consideration is evaluated for its impact on eagle populations at two scales, the regional and the local. At the regional scale, the USFWS manages take within relatively large eagle management units (EMUs). The geographic boundaries of the EMUs for both species are based on, but diverge somewhat from, the four administrative flyways the USFWS and its partner agencies use to manage many other migratory birds, which are, in turn, “based on specific migratory route paths within North America (Atlantic, Mississippi, Central, and Pacific).”⁵⁶ To meet the preservation standard, cumulative permitted take cannot exceed take limits the USFWS establishes and periodically updates within the applicable EMU.

In addition to EMU take limits, permitted take is also subject to local area population (LAP) thresholds to prevent long-term negative consequences to breeding or wintering eagle populations at the local scale.⁵⁷ Before issuing a permit, the USFWS must consider all ongoing authorized take and any new take under consideration for a permit. “The [USFWS] has identified LAP take-rates of $\geq 1\%$ as being of

⁵⁴ 16 U.S.C. § 668a.

⁵⁵ 50 CFR § 22.3.

⁵⁶ ENVIRONMENTAL IMPACT STATEMENT, *supra* note 31, at 27.

⁵⁷ *Id.* at 19–20.

concern, and rates of 5% [as] being the maximum of what should be considered.”⁵⁸ The LAP is unique to each prospective permit and is comprised of the eagle population within an established biologically based radius from the project, estimated based on the average density of eagle populations within the EMU.⁵⁹

When actual take exceeds the established sustainable take limits in the EMU, applicants must reduce the effect of remaining permitted mortality through compensatory mitigation. To address potentially declining golden eagle populations without imposing a moratorium on issuance of golden eagle take permits, golden eagle take must be mitigated at a 1.2 to 1 ratio.⁶⁰ Compensatory mitigation must be through an action that reduces another ongoing form of mortality by an equal (bald eagles) or greater (golden eagles) amount or by an increase in carrying capacity (number of individual eagles supported by a given habitat) that allows the eagle population to grow by an equal or greater amount.⁶¹

The incidental take permit regulations require that permittees undertake avoidance and minimization measures to the maximum degree practicable.⁶² For any type of activities, avoidance and minimization measures may consist of well-known, industry-accepted best management practices or may be scientifically supportable

⁵⁸ MILLSAP ET AL, *supra* note 14, at vi. Subsequent analyses the agency conducted for numerous bald eagle take permits, however, have demonstrated that most bald eagle populations are still growing fast enough to allow for additional take within the LAP. *See, e.g.*, MIGRATORY BIRD MGMT. OFF. U.S. FISH AND WILDLIFE SERV., FINAL ENVIRONMENTAL ASSESSMENT FOR THE ISSUANCE OF AN EAGLE INCIDENTAL TAKE PERMIT TO GARRETT CONSTRUCTION COMPANY LLC (2018).

⁵⁹ MILLSAP ET AL, *supra* note 14.

⁶⁰ ENVIRONMENTAL IMPACT STATEMENT, *supra* note 31, at 30.

⁶¹ The population baseline against which a decline in eagle populations would be measured is the population size (in the applicable eagle management unit) of bald eagles or golden eagles that was present in 2009, the year the Service established the current management framework based on the preservation standard. Thus, permits for facilities that were in operation before 2009 that pose a risk to golden eagles do not necessarily require compensatory mitigation for eagle take that has been ongoing since 2009. *Id.* An exception applies where such take would result in a decline in the local area population, in which case compensatory mitigation would be required to bring the permit into compliance with the BGEPA preservation standard.

⁶² 50 C.F.R. § 22.26(f)(4).

actions tailored to reduce impacts based on the specific circumstances of the project. Examples of such measures include siting considerations, project design, spatial buffers, habitat management, operation timing, and employing technology designed to reduce risk to eagles. As discussed earlier, developing technology-based measures to reduce eagle take at wind energy facilities has largely focused on curtailing operations when eagles are observed by humans or radar or are more likely to be present (seasonal curtailment).

The USFWS issues eagle incidental take permits as either “short-term” (5 years) or “long-term” (from 5 to 30 years), depending on the type and duration of the activity. A 5-year permit for a discrete action that occurs within a limited, identifiable time is considered a short-term permit. Short-term permits are not available for take associated with long-term activities, such as wind energy generation.

By regulation, long-term permits entail additional permit conditions to provide for adaptive management over the duration of the permit. Permit conditions include “triggers,” which are specific circumstances that, should they occur, warrant additional or modified conservation measures or monitoring methods. The regulations require permit conditions for long-term permits to specify what actions will “be taken if take approaches or reaches the amount authorized and anticipated within a given time frame”.⁶³ Long-term permits are subject to permit reviews at least every five years, which provides the USFWS with the opportunity to assess whether any triggers have been met or appear to be imminent and implement the modifications specified in the permit.

The other regulatory requirement that applies only to long-term permits is that monitoring to assess the impacts of the permitted activity on eagles must be conducted by an independent third party that reports to the USFWS.⁶⁴

In addition to conditions specific to long-term permits, the incidental take permit regulations also establish standardized preapplication eagle survey requirements.⁶⁵ In the preamble to the final regulations, the USFWS described two objectives for including these provisions in the regulations: (1) to expedite the permit process by avoiding time-consuming negotiations with applicants; and (2) to support adaptive development and improvement of tools used by the USFWS to

⁶³ 50 C.F.R. § 22.26(c)(7)(ii).

⁶⁴ 50 C.F.R. § 22.26(c)(7)(i).

⁶⁵ 50 C.F.R. § 22.26(d)(3)(ii).

measure impacts on eagles.⁶⁶ The standards represent “the minimum level of information and the least sophistication in sampling design that will be acceptable for the [USFWS] to evaluate and decide whether to issue an eagle take permit for a wind facility.”⁶⁷ The USFWS may allow exceptions to the survey requirements if it “has data of sufficient quality to predict the likely risk to eagles” or if waiving the requirement and thereby expediting permit issuance “will benefit eagles” (presumably through implementation of conservation measures and/or compensatory mitigation).⁶⁸ The USFWS can also waive the specific survey standards if it is able to determine the overall project risk to eagles is relatively low.⁶⁹

C. Migratory Bird Treaty Act

1. Prohibitions and interpretations

On its face, the Migratory Bird Treaty Act (MBTA) makes it “unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill . . . any migratory bird.”⁷⁰

Migratory bird means any bird, whatever its origin and whether or not raised in captivity, which belongs to a species listed in [50 C.F.R.] § 10.13, or which is a mutation or a hybrid of any such species, including any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof.

. . . .

Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.⁷¹

⁶⁶ ENVIRONMENTAL IMPACT STATEMENT, *supra* note 31.

⁶⁷ Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests, 81 Fed. Reg. 91,494, 91,501 (Dec. 16, 2016).

⁶⁸ 50 C.F.R. § 22.26(d)(3)(iii).

⁶⁹ *Id.*

⁷⁰ 16 U.S.C. § 703.

⁷¹ 50 C.F.R. § 10.12.

A violation of this provision that does not involve sale or barter is a strict liability misdemeanor punishable by not more than six months in prison and a fine of up to \$15,000 or twice the gross gain or loss derived from the offense.⁷² Sale or barter violations are punishable by not more than two years in prison and a fine of up to \$250,000 or twice the gross gain or loss derived from the offense.⁷³

Since the early 1970s, the Department of Justice (Department) applied this prohibition to takings caused incidental to otherwise legal industrial activity. More recently, this application was challenged. By 2015, the Tenth Circuit and the Fifth Circuit had issued conflicting opinions on the issue.⁷⁴

The scope of the MBTA has also been the subject of diametrically opposed opinions of the Solicitor of the Department of the Interior (DOI). Solicitor's Opinion M-37050 (December 22, 2017) found that the MBTA applies only to hunting and poaching and vacated Solicitor's Opinion M-37041 (January 10, 2017), which had reached the opposite conclusion. Solicitor's Opinion M-37050 was, in turn, vacated by the Southern District of New York in August 2020 as contrary to the MBTA.⁷⁵ On January 7, 2021, the DOI promulgated regulations based on reasoning similar to that of the vacated legal opinion,⁷⁶ which were immediately challenged in two lawsuits.⁷⁷

On March 8, 2021, the DOI formally withdrew Solicitor's Opinion M-37050. On May 7, 2021, DOI published a notice of intent to revoke

⁷² 16 U.S.C. § 707(a); 18 U.S.C. § 3571(d).

⁷³ 16 U.S.C. § 707(b); 18 U.S.C. § 3571(b)(3), (d).

⁷⁴ See *United States v. Apollo Energies, Inc.*, 611 F.3d 679 (10th Cir. 2010) (holding that the MBTA applied to the incidental taking of birds in oil production equipment); *United States v. CITGO Petroleum Corp.*, 801 F.3d 477 (5th Cir 2015) (holding that the MBTA taking prohibition did not apply to incidental take, but not reaching the issue of whether the prohibition on killing is similarly limited).

⁷⁵ *Natural Res. Def. Council v. U.S. Dep't of the Interior*, 478 F. Supp. 3d 469 (S.D.N.Y. 2020).

⁷⁶ *Regulations Governing Take of Migratory Birds*, 86 Fed. Reg. 1134 (Jan. 7, 2021).

⁷⁷ See *Nat'l Audubon Soc'y v. U.S. Fish and Wildlife Serv.*, No. 21-cv-00448 (S.D.N.Y.); *New York v. U.S. Dep't of the Interior*, No. 21-cv-00452 (S.D.N.Y.).

the January 7 rule.⁷⁸ On October 4, 2021, DOI published a final rule revoking the January 7, 2021, regulation. That revocation becomes effective December 3, 2021, at which time the MBTA may once again be applied to acts not intentionally directed migratory birds.

2. Permitting framework

Permits are available under the MBTA for particular activities, such as import and export, scientific collecting, taxidermy of migratory game birds, and raptor propagation and rehabilitation.⁷⁹ The only regulatory permitting provision applicable to the type of takings caused by wind turbines or other renewable energy activities would be for special purpose permits described in 50 C.F.R. § 21.27. To date, however, this provision has not been utilized for this purpose. On October 4, 2021, DOI published an advance notice of proposed rulemaking requesting public input on potential alternatives for authorizing incidental take of migratory birds.⁸⁰

D. Endangered Species Act

1. Prohibitions

Relevant to the energy sector, the Endangered Species Act (ESA) makes it unlawful for any person subject to the jurisdiction of the United States to take any endangered species of fish or wildlife within the United States, its territorial sea, or on the high seas, or to violate any regulation pertaining to any endangered or threatened species.⁸¹ The ESA also makes it unlawful to maliciously damage or destroy any endangered plant species on any area under federal jurisdiction or to remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any state or in the courts of a state criminal trespass law, or to violate any regulations pertaining to any such endangered or threatened species.⁸² Threatened species listed on or before September 26, 2019, enjoy the same protections as endangered species unless a species-

⁷⁸ Regulations Governing Take of Migratory Birds; Proposed Rule, 86 Fed. Reg. 24573 (May 7, 2021).

⁷⁹ See 50 C.F.R. Part 21.

⁸⁰ Migratory Bird Permits; Authorizing the Incidental Take of Migratory Birds, 86 Fed. Reg. 54,667 (Oct. 4, 2021).

⁸¹ 16 U.S.C. §§ 1538(a)(1)(B), (C), (G).

⁸² 16 U.S.C. § 1538(a)(2)(B), (E).

specific regulation provides otherwise.⁸³ Threatened species listed after September 26, 2019, are protected only to the extent that a species-specific rule so provides.⁸⁴

If critical habitat is designated for a listed species, there are no prohibitions or protections afforded to such habitat. The prohibitions attach to the species therein, not to the habitat itself. Thus, it is illegal to take a fish or wildlife species by harming it, which includes significantly modifying or degrading habitat (including designated critical habitat) if such act “actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”⁸⁵

Endangered and threatened species are listed in 50 C.F.R. §§ 17.11–17.12. Species-specific rules are found in 50 C.F.R. §§ 17.40–17.48.

2. Permitting framework

A permit to take an endangered or threatened species incidental to an otherwise lawful activity may be obtained by a private entity, such as a wind power operator, through one of two processes. Under section 10 of the ESA, the USFWS can issue an incidental take permit to a private entity after the entity submits a conservation plan.⁸⁶ Under section 7 of the ESA, the USFWS can issue an incidental take permit through an inter-agency consultation process where a private entity requests a permit from another federal agency for an activity that is likely to affect a listed species.⁸⁷

IV. Prosecution implications

A. Factors for consideration

Enforcement in the context of a developing industry, within a legal framework that is modified over time as the industry develops, is particularly complicated. Prosecutors face a myriad of considerations as they weigh whether the illegal activity at issue is truly criminal conduct and, if so, what charges are appropriate.

After a preliminary determination that the conduct at issue is in fact illegal (for example, no permit authorized the eagle taking),

⁸³ 50 C.F.R. § 17.31(a).

⁸⁴ 50 C.F.R. § 17.31(c).

⁸⁵ 50 C.F.R. § 17.3.

⁸⁶ 16 U.S.C. § 1539(a)(2)(A).

⁸⁷ 16 U.S.C. § 1536(a)(3).

numerous factors impact whether prosecutors might determine that criminal charges are appropriate, including:

- Is the defendant in the process of obtaining any required and available permit? Why does the defendant not already hold such a permit? Are those reasons within the defendant's control?
 - Was the wind power facility conceived and constructed before the issuance and implementation of the eagle take permit regulations? If so, and if the violation is of the BGEPA, is the facility in the process of obtaining an eagle take permit?
- Did the defendant follow the voluntary guidelines and recommendations of the USFWS and the industry itself as it chose the site for its facility, the site for each turbine within the facility, the minimization efforts to be made, and the mitigation measures to be implemented?
- Has the defendant followed recommendations made to it to minimize impacts on wildlife?
- Did the defendant accurately report anticipated/predicted levels of take?
- How severe is the level of take? How often is taking occurring?
- How avoidable is, or was, the take? Were all known and even some experimental minimization methods used?
- Are the species at issue of particular conservation concern, or did the level of take present a risk to the species population?
- What measures did the company take to remedy the violations after they occurred? Has mitigation been made?
- Are the violations continuing? If so, was that avoidable either through obtaining authorization for the takes or by taking measures that would stop the takings, such as curtailment?
- Was the company afforded an opportunity to come into compliance with the relevant wildlife laws? Does it have prior violations?
- What analogous prosecutions exist, and how were those resolved?

- What enforcement remedy is sufficient deterrence both for the potential defendant and for others that are, or will be, similarly situated?

The answers to these and other questions inform the determination of which potential enforcement avenue to follow. Available options include a criminal notice of violation, an administrative settlement, civil injunctive relief, criminal charges, or none of the above.

B. Administrative settlement

1. Scope of relief and limitations

The ESA and the BGEPA authorize the Secretary (of Interior, of Commerce, or of Agriculture, depending on the species at issue) to impose civil administrative penalties.⁸⁸ The maximum amount of the financial penalty is low—\$25,000 for the ESA and \$5,000 for the BGEPA. Those amounts, however, are subject to adjustment for inflation, and the updated maximum penalty amounts are in 50 C.F.R. § 11.33. For example, the current maximum civil monetary penalty for the BGEPA is \$13,685.⁸⁹

To put this in context, a recent study conducted to establish the value of a golden eagle determined that the cost to retrofit enough power poles to prevent the future take of a golden eagle to effectively replace one eagle illegally taken would range from \$15,200 to \$38,000.⁹⁰ The civil administrative penalty is less than the value of the asset lost and less than the fee to apply for an eagle take permit. Assessing such civil penalties, without more, simply becomes a cost of doing business. It creates little deterrent since it would cost the company significantly less to violate the statute than to comply with it.

That said, administrative settlements have been effectively used to resolve potential criminal exposure where prosecutors exercised their discretion not to move forward. In the BGEPA context, this has been done several times where a facility, built or planned before the 2009 eagle take permits were fully implemented, killed eagles before submitting an application for an eagle take permit. In addition to the

⁸⁸ 16 U.S.C. §§ 1540(a), 668(b).

⁸⁹ 50 C.F.R. § 11.33(b).

⁹⁰ ABT ASSOC., PROXIES FOR THE MARKET VALUE OF BALD AND GOLDEN EAGLES: FINAL REPORT (2017); Michael J. Evans et. al., *Unpacking the Eagle Collision Risk Model: Practical Guidance for Wind Energy*, BIORXIV (2020).

administrative penalty amount, these settlements all include a requirement that an eagle take permit be pursued and that corrective actions be taken to reduce or terminate the conditions and practices causing the violations. Typically, a minimum expenditure amount is established for those corrective actions.

2. Case example

In September 2012, the USFWS referred for administrative enforcement the Shiloh Wind Project 2, constructed in 2008 in Solano County, California. The company that controlled this facility, EDF Renewables, had two other facilities in Solano County as well as four more facilities in the Altamont Wind Resource Area in northern California. All the facilities were constructed between 1985 and 2012. EDF Renewables was already in the process of obtaining an eagle take permit for the project constructed in 2012, known as Shiloh IV. Ultimately, a civil settlement was reached that covered all seven facilities. Under the settlement, effective October 2015, EDF Renewables paid a \$10,000 civil penalty and committed to a schedule for submitting applications for eagle take for three of its facilities (it obtained a take permit for Shiloh IV in 2014). The other three facilities ceased operations in 2016 and, under the settlement, would be dismantled. In addition, the company was required to undertake corrective actions at a minimum cost of \$405,000.⁹¹

C. Civil judicial enforcement

Neither the BGEPA nor the ESA provide for civil judicial enforcement by the government. The ESA does provide for civil injunctive relief for citizen claimants.⁹² Civil injunctive relieve should be available to the government through the All Writs Act (AWA).⁹³ Rarely used, the AWA applies where a legislative scheme is unclear or incomplete. The statutory language grants courts power to issue “necessary or appropriate” writs and, thus, operates as a gap-filler for the unprovided-for case. Due to its infrequent use, clear precedent is lacking, but a strong argument can be made that the government,

⁹¹ *Civil Settlements Advance Eagle Conservation*, U.S. FISH AND WILDLIFE SERV., https://www.fws.gov/cno/newsroom/featured/2016/eagle_settlements/ (updated Jan. 9, 2018).

⁹² 16 U.S.C. § 1540(g).

⁹³ 28 U.S.C. § 1651.

through the AWA, has the authority to pre-empt or halt statutory violations. The novel legal theory has not been tested in court.

1. Relief available

Injunctive relief could prove draconian. In circumstances where it could take months if not years to obtain a permit to authorize the actions in question, and where a facility is poorly sited or installing an effective curtailment system could take months, an injunction could mean the shutdown of an entire facility. However, such relief may be appropriate if there are egregious facts, and an injunction is necessary to deter future egregious violations.

D. Criminal prosecution

Criminal prosecution is an option for both BGEPA and ESA violations committed by wind power facilities or other sustainable energy operations. Criminal prosecutions have been brought when the defendant failed to follow the Wind Energy Guidelines, failed to implement available avoidance and minimization measures, knew that the turbine operations were predicted to kill eagles but did not apply for an eagle take permit, failed to apply for an eagle take permit after an initial eagle take, and/or caused the deaths of eagles at a relatively high rate.

1. Sentencing options

To date, criminal charges have been brought only against corporate defendants for the deaths of eagles due to wind power facility operations. As with administrative settlements, in each case, the defendant was required to submit an application for an eagle take permit within a limited period. The sentences also have included fines, community service, interim compliance plans, and restitution. The compliance plans ensure that take is minimized while an eagle take permit is sought, provide the probation officer a basis for not finding that the defendant violated probation if an eagle take occurs, and provide the prosecutor a clear line for whether and when to initiate additional criminal charges—if another eagle dies despite defendant's best efforts.

V. Conclusion

We are witnessing a paradigm shift in the energy sector driven by climate change concerns. Renewable energy sources, just like traditional sources, have adverse impacts on wildlife. In many instances, there are no laws that protect wildlife from these impacts. Where laws apply, such as the BGEPA, ESA, and MBTA, enforcement can benefit not just eagles and endangered species, but others that share that environment. Prosecutors need to be sensitive to the limitations of current known avoidance and minimization methods, yet fully enforce existing legal prohibitions. Enforcement actions under the BGEPA, ESA, and MBTA can help ensure that wind power facilities are sited and operated in a manner that avoids, minimizes, and mitigates take. A balance must be found between the need for clean energy and the legal and moral imperative to conserve wildlife.

About the Authors

Elinor Colbourn is the Senior Counsel for Wildlife Programs for the Environmental Crimes Section, Environment and Natural Resources Division, U.S. Department of Justice. After joining the Division as an attorney in the Wildlife and Marine Resources Section, and then completing a detail in the Appellate Section, for approximately 25 years Ms. Colbourn has specialized in cases involving criminal violations related to plants and animals and has prosecuted numerous cases under the Lacey Act, the Endangered Species Act, and the Migratory Bird Treaty Act. Ms. Colbourn earned her law degree from Yale Law School, her masters in Environmental Science from Johns Hopkins University, and her Bachelor of Arts from Wake Forest University. Ms. Colbourn clerked for the late federal district court judge James B. McMillan and worked in the private sector before joining the Department in 1992.

Brian Millsap is the National Raptor Coordinator for the USFWS. As such, Brian is the senior technical and policy advisor on matters pertaining to birds of prey. Brian started his career with the USFWS in 2002, when he was hired as the Chief of the Division of Migratory Bird Management in the Washington Office. Brian moved from Washington to the Southwest Region in 2006, where he served as the New Mexico State Administrator, Assistant Regional Director for the Division of Ecological Services, and Deputy Regional Director. Before joining the USFWS, Brian worked for 16 years with the Florida Fish

and Wildlife Conservation Commission, mostly as the Chief of the Bureau of Wildlife Diversity Conservation. Brian holds a BS in Wildlife Biology from Colorado State University, an MS in Biology from George Mason University, and a PhD in Biology from New Mexico State University.

Eliza Savage is retired from the Division of Migratory Bird Management, USFWS. Eliza has an MSL in Environmental Law from Vermont Law School and a BA from Dartmouth College.

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The Past May Be Prologue: Energy Credit Fraud and its Lessons for Carbon Credit Systems

Wayne D. Hettenbach

Assistant Chief

Environment and Natural Resources Division

Lauren D. Steele

Trial Attorney

Environment and Natural Resources Division

On January 20, 2021, newly inaugurated President Joseph R. Biden signed Executive Order 13990, “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis.”¹ In EO 13990, President Biden emphasized the United States’ “abiding commitment to . . . promote and protect our public health and the environment.”² He announced the policy of the Biden Administration to “reduce greenhouse gas emissions” and to take additional actions to address climate change and promote principles of environmental justice.³ He further directed all departments and agencies within the executive branch to “immediately commence work to address the climate crisis.”⁴ Executive Order 14008, signed one week later, reiterated the Biden Administration’s commitment to taking action in response to the climate crisis and noted that such a response “will require both significant short-term global reductions in greenhouse gas emissions and net-zero global emissions by mid-century or before.”⁵ The order created a White House Office of Domestic Climate Policy, as well as a National Climate Task Force, chaired by the National Climate Advisor and including the Attorney General, Secretaries of the Treasury, Defense, Agriculture, Commerce, Labor, Health and Human Services, Housing and Urban Development,

¹ Exec. Order No. 13990, 86 Fed. Reg. 7037 (2021).

² *Id.* at 7037.

³ *Id.*

⁴ *Id.*

⁵ Exec. Order No. 14008, 86 Fed. Reg. 7619 (2021).

Transportation, Energy, and Homeland Security departments, as well as the Administrator of the Environmental Protection Agency (EPA).⁶

On June 24, 2021, the Senate passed, in a bipartisan 98–2 vote, the Growing Climate Solutions Act.⁷ The bill tasks the U.S. Department of Agriculture with creating a certification program to help farmers, ranchers, and foresters participate in programs to make money by selling carbon credits. A companion bill is already pending in the House of Representatives as of the writing of this article, and the Senate bill’s sponsors are confident it can be passed by the House.⁸ Given the Administration’s avowed dedication to combatting the climate crisis and likely congressional action, an increase in federal efforts to reduce greenhouse gas emissions appears likely. One approach that has been discussed is the expanded use of the cap-and-trade model for carbon emissions reductions, an approach currently used only on the state and regional levels and in some foreign countries. Such a program could be overseen by the EPA given its recognized authority to regulate greenhouse gases.⁹

There are currently twelve U.S. state-based trading programs as well as several foreign national ones. While carbon or emission credit trading programs can play important roles in tackling reductions in greenhouse gas emissions, the federal government’s experience discovering and prosecuting widespread fraud in its fuel credit trading program offers important lessons for designing, implementing, and regulating state and future federal carbon or emissions credit trading schemes. It also sounds a warning that focusing on investigating and prosecuting credit producers’ and traders’ fraud is necessary to deter carbon credit offset fraud, to protect a carbon credit plan’s integrity, and to ensure its ability to achieve promised emission reductions.

This article provides a brief overview of the fifteen-year-old federal fuel credit trading program and discusses the discovery and prosecution undertaken by the Department of Justice Environmental Crimes Section (ECS) and U.S. Attorneys’ offices of large-scale fraud

⁶ *Id.* at 7622–23.

⁷ S. 1251, 117th Cong. (2021).

⁸ Helena Bottemiller Evich and Tatyana Monnay, *In a Rare Bipartisan move, Senate Approves Bill to Help Farmers Profit on Climate Action*, POLITICO (June 24, 2021), <https://www.politico.com/news/2021/06/24/senate-farmers-carbon-agriculture-496029>.

⁹ *Massachusetts v. Env’t Prot. Agency*, 549 U.S. 497 (2007) (affirming EPA’s authority to regulate greenhouse gases).

in that program spanning the last eight years. We overview some features of current state emission credit trading programs that potential federal programs would likely include and highlight lessons from the biodiesel fuel credit fraud prosecutions to consider when designing future, or investigating current, emissions credit trading systems.

I. Overview of the federal renewable fuels standard

The Energy Policy act of 2005 and the Energy Independence and Security Act of 2007 created requirements under the Clean Air Act for a minimum volume of renewable fuels to be used nationwide for transportation. EPA created the Renewable Fuel Standards (RFS) to carry out mandates that Congress included in these statutes.¹⁰ These acts and RFS require refiners and importers of petroleum fuels (called “obligated parties”) to introduce renewable fuels into the nation’s fuel mix based on the volume of petroleum fuel they produce or import. Exporters of renewable fuel are also obligated to offset their exports with credits when exporting volumes of renewable fuel out of the country. Renewable fuels are fuels produced from renewable biomass,¹¹ called “feedstocks,” that also meet other regulatory requirements, including those set out at Table 1 of 40 CFR § 80.1426. Such fuels include corn-based ethanol and biodiesel derived from certain plant oils and animal fats.¹²

EPA created a credit trading program in which registered renewable fuel producers create tradable “renewable identification numbers” (RINs) that obligated parties are required to give or “retire” with EPA to satisfy their renewable fuel obligations. Obligated parties obtain those RINs (1) by producing renewable fuel themselves (which generates RINs); (2) by importing renewable fuel produced by approved foreign producers (which generates RINs); (3) by purchasing renewable fuel (with associated RINs) from approved domestic producers; or (4) by purchasing RINs without the underlying renewable fuel. Under the regulations, once renewable fuel is blended into petroleum fuel, in any concentration, the blender can “separate”

¹⁰ The RFS regulations appear generally at 40 C.F.R Part 80, Subparts K & M.

¹¹ 40 C.F.R. § 80.1401.

¹² *Id.*

the RIN from the fuel and then trade it as its own independent commodity.

EPA regulations require that all RINs generated after July 1, 2010, be transferred only through the EPA Moderated Transaction System (EMTS), an internet-accessible transaction platform used by regulated parties to generate, separate, sell, and retire RINs. All EMTS activity is conducted through a Central Data Exchange (CDX) account where users must create an individual user identity. For example, a renewable fuel producer could log on, electronically register a volume of renewable fuel produced, and declare the number of RINs that are generated for, and assigned to, that volume. After a buyer and seller reach an agreement to trade RINs, the seller posts the sale of the RINs on EMTS at the agreed upon price. The buyer logs into EMTS, verifies that the information matches the deal the buyer made with the seller, and accepts the transaction. Upon acceptance, the RINs are transferred from the seller's RIN account to the buyer's account. EPA does not guarantee the validity of RINs, nor is money transferred through any EPA system involving RINs. In addition, RIN transactions must be certified quarterly to the EPA.

The program also imposes reporting and record keeping requirements on all producers of renewable fuel. Any RIN-generating producer must retain product transfer documents (PTDs), copies of all reports submitted to EPA, records related to each RIN transaction, and records related to the generation and assignment of RINs, and all commercial documents related to details of RIN generation for five years.¹³ The retained records include information such as batch volume, batch number, type and quantity of feedstocks, type and quantity of fuel used for process heat, and feedstock energy calculations.¹⁴

When a renewable fuel trade includes assigned RINs, those RINs must transfer along with the ownership of that fuel. An assigned RIN cannot be transferred to a buyer without simultaneously transferring a volume of renewable fuel to that same buyer. The transfer of ownership of assigned RINs must be documented either (1) on the PTD that conveys the fuel to its new owner or (2) on a separate PTD that is transferred to the new owner on the same day as the PTD used to convey the fuel.

¹³ 40 C.F.R. § 80.1454.

¹⁴ *Id.*

A separated RIN is a RIN that is no longer assigned to a volume of renewable fuel. Separated RINs can be transferred any number of times. RINs can only be separated if all regulatory conditions are met. Those conditions are most commonly satisfied through blending the renewable fuel with petroleum fuel or after an obligated party purchases the fuel with attached RINs. Per EPA regulations, upon, and after, separation of a RIN from its associated volume of renewable fuel, the fuel that is sold must be accompanied by a PTD that states, “No assigned RINs transferred.” The purpose of this requirement is to allow EPA to match a PTD to a specific transaction recorded in EMTS and to allow EPA to trace later transactions of fuel and RINs. EMTS do not generate PTDs; they are produced by parties to a transaction. All parties must keep all PTDs for at least five years.

One example of how RINs are used is as follows: A fuel marketer buys pure biodiesel (commonly referred to as B100) from a biodiesel producer, together with assigned RINs. The retailer then blends the biodiesel with conventional diesel and sells the resulting mix to truckers and other diesel users.¹⁵ Often the biodiesel producer will “splash blend” a very small quantity of diesel with biodiesel to create a blend called B99, which is 99% biodiesel and 1% or less of diesel. By blending the fuel, the retailer or producer is able to separate the RINs. The retailer or producer can then sell the RINs in the RIN market. Eventually, the RINs will be obtained by an obligated party, which will use them to show the EPA that it fulfilled its renewable volume obligation (RVO), and then the RINs will be retired with the EPA.

II. Market incentives failed to ensure program integrity

The legislation and regulations implementing the RFS program relied on market incentives inherent in the system to ensure that actors would comply with its requirements. By setting up a “buyer-beware” system in which transportation fuel producers were responsible for meeting their renewable fuel obligations, the RFS program architects believed there would be sufficient market incentives for these obligated parties to ensure that the RINs they

¹⁵ Typical blends used for transportation fuel are diesel with 20% biodiesel, known as B20.

were buying would be valid.¹⁶ In practice, however, as demonstrated by the many large-scale fraud cases discovered many years into the program, the complexity of the program and the market trading of RINs stood in the way of the incentives obligated parties had to police RIN provenance.¹⁷ After RINs were separated from renewable fuel, they could be sold to intermediary traders. These RINs were then traded on an unregulated secondary commodities market and often passed through several brokers before being bought by obligated parties.¹⁸ This system created distance between the RIN producer and the RIN buyer such that it was difficult for an obligated party to ensure the RIN they were buying was not fraudulent.¹⁹

Purported producers' ability to fraudulently generate RINs was aided not only by program complexity and market trading, but also by the absence of regulatory inspections by a state or federal entity to determine if the paperwork submitted to EPA matched a real-world facility or operation. As discussed below, while RIN generators were required to receive EPA approval before they could introduce RINs into the program, EPA relied almost exclusively on documentation submitted by these RIN generators when granting approval, with virtually no attempt to determine the accuracy or truthfulness of the information at the time it was submitted. Likewise, regulators made few attempts to inspect generation facilities to ensure continued operation. As the government later learned from investigating and

¹⁶ See RIN Fraud: EPA's Efforts to Ensure Market Integrity in the Renewable Fuels Program: Hearing Before the Subcomm. on Oversight and Investigations of the H. Comm. on Energy and Commerce, 112th Cong. (2012).

¹⁷ See The American Energy Initiative, Part 26: The Role of Federal Agencies in Alternative Transportation Fuels and Vehicles: Hearing Before the Subcomm. on Energy and Power of the Comm. on Energy and Commerce, 112th Cong. 57 (2012) (questioning of Margo Oge, Director of the Office of Transportation and Air Quality of the EPA, about obligated parties reluctant to do business with small RIN generators because they do not know what they are required to do to verify RIN validity).

¹⁸ See Background on Renewable Identification Numbers Under the Renewable Fuel Standard: Hearing Before the Subcomm. on Env't of the H. Comm. on Energy and Commerce, 115th Cong. (2018).

¹⁹ Oversight Hearing on Domestic Renewable Fuels: Joint Hearing Before the Subcomm. on Clean Air and Nuclear Safety of the Comm. on Env't and Pub. Works, 113th Cong. 86 (2013) (statement of Christopher Grundler, Director of the Office of Transportation and Air Quality).

prosecuting cases arising from fraudulently generated RINs, criminals readily and easily exploited these factors on a massive scale. At one point, there were so many fraudulent RINs discovered in the program that they not only affected the market price for RINs, but also threatened to undermine the entire program by creating a potential shortfall of non-fraudulent RINs available to obligated parties to meet their obligations.²⁰

III. Fraud runs rampant

After the first fraud cases were discovered—largely by accident—a closer analysis of RIN generation data flagged several generators’ production as suspicious, suspicions that were borne out by further investigation. The early RIN production fraud cases revealed completely fabricated operations and companies that existed only on paper. Later prosecutions involved far more sophisticated fraudulent schemes, including actual production facilities, multiple related corporate entities, and complex financial transactions.

In one of the earlier RIN fraud cases, *United States v. Hailey*,²¹ the defendant registered a business called Clean Green Fuel with EPA as a biodiesel production company. In his registration, he identified a business address and submitted the other required production description paperwork mandated by EPA’s regulations. Over the next two years, Hailey claimed to manufacture, blend, and sell approximately 23 million gallons of biodiesel, generating, separating, and selling RINs worth approximately \$42 million dollars. After Hailey’s sudden purchase of luxury items drew the attention of a local state–federal task force investigating potential drug related offenses, further investigation revealed that his purported business location and production facility were a residential home and a vacant warehouse. The information contained in the paperwork Hailey submitted to EPA, including his claim to have functioning production facilities, was never verified. Even a cursory inspection of Hailey’s supposed facilities would have revealed his fraudulent scheme. But for his ostentatious displays of new-found wealth, Hailey could have

²⁰ The Renewable Fuel Standard: Implementation Issues: Hearing Before the Subcomm. on Energy and Power of the Comm. On Energy and Commerce, 114th Cong. 71 (2016) (statement of Chet Thompson, President of American Fuel and Petrochemical Manufacturers).

²¹ No. 11-cr-0540, 2012 WL 2339275 (D. Md. June 13, 2012).

operated for a substantially longer period. Hailey was convicted by a jury and sentenced to 151 months' incarceration, ordered to forfeit over \$9 million in property and cash, and ordered to pay restitution in the amount of over \$42 million to those obligated parties who purchased his RINs.

The earliest RIN fraud cases that came to light involved schemes similar to Hailey's: They created wholly fictitious production facilities that existed only on paper or had a physical structure with no real production capability. For example, in *United States v. Gunselman*,²² the defendant registered non-existent facilities for Absolute Fuels LLC and, in one year, claimed to produce over 32 million gallons of renewable fuel worth over \$55 million in RINs.²³ Like in *Hailey*, even a cursory inspection or attempt to verify paperwork claims would have revealed that this producer was non-existent in the real world.

At the same time these naked fraud schemes were being discovered, EPA began employing data analytics to identify potential false claims by analyzing production data submitted to EPA through EMTS, registration documentation, and company information. Using this information to target potentially fraudulent claims, further on-the-ground investigation revealed many larger-scale criminal enterprises that made substantially greater efforts to conceal their illegal activities.

For example, later defendants utilized actual facilities with production equipment but no operations and established multiple front companies to create the appearance of actual renewable fuel production and sale. In *United States v. Rivkin*,²⁴ Rivkin operated companies called Green Diesel LLC, Fuel Streamers, Inc., and Petro Constructors LLC. While Green Diesel had an actual facility with production equipment that could have generated renewable fuel, it was not used, and no product flowed through the facility. It also had almost no employees to operate its alleged production facility, generated no actual sales, and no production by-products. Over the course of a year, the defendant earned over \$50 million selling RINs.

²² No. 12-CR-078-C, 2012 WL 12921419 (N.D. Tex. Sept. 11, 2012), *aff'd*, 498 F. App'x 456 (5th Cir. 2012).

²³ Gunselman was sentenced in 2013 to 188 months' imprisonment, a \$175,000 fine, and over \$54 million in restitution. *United States v. Gunselman*, 643 F. App'x 348, 350 (5th Cir. 2016).

²⁴ No. 14-CR-00250 (S.D. Tex. June 13, 2016); *see also* Press Release, Dep't of Just., Houston Man Charged with Biofuels Fraud Scheme (June 19, 2014).

After being extradited from Guatemala, where he fled to avoid prosecution, Rivkin entered into a plea agreement and was sentenced to 121 months' incarceration, ordered to forfeit \$51 million, and ordered to pay \$87 million in restitution.

More sophisticated fraud schemes involved defendants who operated actual facilities that produced small quantities of renewable fuel but used closely held companies to move volumes of various feedstocks and fuels through their facilities without creating renewable fuel. Three significant cases following this approach were the Global E Marketing/City Farm Biodiesel case,²⁵ the E-Biofuels/Caravan Trading case,²⁶ and the Gen-X Energy Group/Southern Resources Commodity Group case.²⁷ The defendants in each of these cases utilized numerous co-conspirators, employed significant numbers of people, and invested in actual production and transportation infrastructure and personnel to conceal fraudulently sold RINs.²⁸ cursory inspection may not have easily revealed the fraudulent schemes in these cases (and the facilities were never in fact inspected for this purpose), but more sophisticated spot auditing and preliminary investigations of their operations, once targeted, quickly raised red flags. But in each case, in-depth criminal and financial investigation was needed to unravel the intricate schemes.

In the Global E Marketing/City Farm Biodiesel case, three defendants operated biodiesel production and feedstock supply

²⁵ *United States v. Stoliar*, No. 14-CR-6 (D. Nev. Aug. 25, 2015); *see also* Press Release, Dep't of Just., Two Men Charged in Las Vegas with Biofuels Fraud Scheme (Jan. 16, 2014).

²⁶ *United States v. Ducey*, No. 13-CR-00189 (S.D. Ind. Dec. 08, 2016); *United States v. Carmichael*, No. 13-CR-00194 (S.D. Ind. Dec. 18, 2015).

²⁷ *United States v. Garza*, No. 17-CR-06020 (E.D. Wash. Jan. 24, 2020); *United States v. Cha*, No. 17-CR-6046 (E.D. Wash. June 28, 2018); *United States v. Davanzo*, No. 15-CR-00141 (M.D. FL Jan. 16, 2020); *United States v. Holmes*, No. 15-CR-06044 (E.D. Wash Jan. 29, 2020); *United States v. Bush-Estes*, No. 15-06047 (E.D. Wash. June 28, 2018); *United States v. Estes*, No. 15-cr-06048 (E.D. Wash June 28, 2018); *United States v. Bernard*, No. 17-CR-00061 (M.D. FL Feb. 6, 2018).

²⁸ These cases also involved the defendants taking available tax credits for those that blended renewable fuel with petroleum fuel. The tax credit, like a RIN, was predicated on the creation and blending of renewable fuel, so while the profitability of the scheme was derived from a separate program administered by the Internal Revenue Service, the underlying fraud was the same, with the U.S. as the tax fraud victim.

facilities in Canada that claimed to generate renewable fuel, to import the fuel into the United States to Global E Marketing, then to separate and sell the resulting RINs. The defendants directed employees to physically move previously produced biodiesel to and from City Farm, Canada Feedstock, and Global E Marketing facilities. The same material was repeatedly passed through the City Farm facility, and each time that occurred, the defendants claimed it was newly produced fuel created from newly supplied feedstock, allowing them to generate new RINs after they imported to themselves in the United States.

The seven E-Biofuels/Caravan Trading defendants employed a similar scheme, moving renewable fuel from one state to another, passing it through a functioning facility, and claiming it was newly created biodiesel, allowing them to generate new RINs each time. Several of the E-Biofuels defendants also defrauded investors when they solicited financing for their facility knowing that it was fraudulently claiming to produce new biodiesel when, in fact, it was just moving previously produced renewable fuel through the facility and representing it as new.

At least 11 defendants in the Gen-X case similarly conspired to recirculate large quantities of previously produced biodiesel through a facility, claiming it to be new renewable fuel and then generating RINs. In this case, the defendants employed an actual arms-length company to physically truck the product from facility to facility. The trucking company figured out the scheme and demanded to be brought into the conspiracy for a greater share of the revenue. The defendants utilized a series of front companies in various states to generate paperwork and move money to make it appear that they were generating and selling renewable fuel. In all these cases, the defendants utilized multiple front companies in different states or outside of the United States and numerous bank accounts. The complexity of the schemes made effective state-based inspection or enforcement nearly impossible and greatly complicated federal enforcement efforts.

The final general type of sophisticated fraud scheme uncovered as part of the renewable fuels prosecution initiative in which ECS engaged involved defendants who used production facilities to produce something new from feedstock (as opposed to circulating old product), but the product that was created did not meet the specifications required to generate RINs in one way or another. The Smarter Fuel

case,²⁹ the Keystone Biofuels case,³⁰ and the New Energy Fuels/Chieftain Biofuels case³¹ are examples of this kind of scheme.³²

In the Smarter Fuel case, two defendants coordinated two closely held corporations that collected food waste oil and grease and processed it into a more refined organic oil product that could be used in a further process to create renewable fuel. While the product that the Smarter Fuel defendants produced could be used to create renewable fuel, it did not meet the requirements set forth in EPA regulations for RIN generation.³³ In the Keystone Biofuels case, three codefendants operated a facility that processed feedstock into renewable fuel. That renewable fuel, however, did not meet the specifications for legitimate RIN creation, and the defendants inflated their actual production amounts. By knowingly generating and selling RINs when the material they produced did not meet the required specifications, the defendants engaged in fraud.

Finally, in the New Energy/Chiefton Fuels case, four defendants used their production facilities to process low-grade feedstock into higher-grade feedstock that could be used for renewable fuel production. The defendants generated RINs on this processed material even though it did not meet the standards for renewable fuel for which RINs could be generated. In each of these cases, the defendants had actual facilities that took in a substance and processed it, resulting in a finished product. Only through examination and testing of the product, close scientific examination of the processes employed, and tracing of the end use of the product could the fraud be proven. In addition, proving and quantifying that a defendant inflated production numbers was substantially more labor intensive than proving fraud in a situation where no production occurred, requiring analysis and argument over the process employed.

Overall, the fraud cases arising from the various schemes discussed above have netted more than 210 years' incarceration combined, \$3.5

²⁹ United States v. Tommaso, No. 15-CR-602 (E.D. Pa. Dec. 01, 2020).

³⁰ United States v. Keystone Biofuel, No. 17-CR-143 (M.D. Pa Oct. 21, 2020).

³¹ United States v. Bradley, No. 15-CR-44 (S.D. Ohio Sept. 10, 2015).

³² Again, these schemes also involved claiming available tax credits that were premised on the defendant's creation of a qualifying renewable fuel under EPA standards, which they did not meet.

³³ In addition to producing non-qualifying "fuel," these defendants also inflated the quantities that they claimed to be producing allowing them to generate more RINs than they were allowed.

million in fines, \$360 million in restitution, and \$168 million in forfeiture. In addition, the introduction of a significant number of fraudulent RINs to the RFS program increased the supply of RINs, thereby negatively affecting their price and harming the value and profitability of legitimate renewable fuel producers.³⁴

IV. Current state-based approaches to carbon trading

A program that sets limits on the permissible level of carbon emissions and permits regulated parties to offset their emissions with credits generated through specified activities deemed beneficial is commonly referred to as “cap-and-trade.”³⁵ In the United States, two state-operated programs seek to reduce carbon emissions through a cap-and-trade approach: the Regional Greenhouse Gas Initiative (RGGI), which eleven states participate in,³⁶ and California’s AB-32 Cap-and-Trade Program, operated by the California Environmental Protection Agency’s Air Resource Board (CARB).³⁷ The RGGI focuses on reducing CO₂ emissions by the power sector by setting emissions limits and distributing allowances, which are purchased at auctions or traded. Each state operates its own CO₂ Budget Trading Program with regulations based on the RGGI Model Rule.³⁸

³⁴ See United States Expert Disclosure, *United States v. NGL Crude Logistics, LLC*, No. 16-CV-1038 (N.D. Iowa) (Economist Affidavits); see also RIN Fraud: EPA’s Efforts to Ensure Market Integrity in the Renewable Fuels Program: Hearing Before the Subcomm. on Oversight and Investigations of the H. Comm. on Energy and Commerce, 112th Cong. 2 (2012).

³⁵ INTERNATIONAL CRIMINAL POLICE ORGANISATION (INTERPOL), GUIDE TO CARBON TRADING CRIME 2 (2013).

³⁶ The participating states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia. *Elements of RGGI*, REG’L GREENHOUSE GAS INITIATIVE, <https://www.rggi.org/program-overview-and-design/elements> (last visited Oct. 08, 2021).

³⁷ See *Emissions Trading Resources*, ENV’T PROT. AGENCY, <https://www.epa.gov/emissions-trading-resources> (updated July 8, 2021); *Elements of RGGI*, *supra* note 36; *Cap-and-Trade Program*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/about> (last visited Oct. 08, 2021).

³⁸ *Elements of RGGI*, *supra* note 36.

CARB's Cap-and-Trade program, instituted in 2013, sets greenhouse gas emissions limits on entities identified as responsible for approximately 80% of California's emissions.³⁹ The program model features a declining annual emissions cap and an increasing minimum price to purchase allowances at auction.⁴⁰

Under CARB's Cap-and-Trade program, regulated parties can also use offset credits to satisfy up to 8% of their compliance obligations.⁴¹ Offsets can be generated through projects in the United States related to forestry, urban forestry, dairy digesters, destruction of ozone depleting substances, mine methane capture, and rice cultivation.⁴² Credits are generated by projects based on emissions reductions or "removal enhancements."⁴³ Parties seeking to generate credits must show that such reductions or enhancements are "real, additional, quantifiable, permanent, verifiable, and enforceable."⁴⁴

The program requires independent verification of an offset project, and CARB describes its verification methods as "the strictest and most rigorous in the world."⁴⁵ Among other requirements, parties seeking to claim offset credits for a project must be audited by an offset verification body or offset verifier, which must be accredited by CARB.⁴⁶ In turn, entities seeking to perform verification services under the program must themselves meet specific requirements, undergo training, and pass examinations that demonstrate their

³⁹ *Cap-and-Trade Program*, *supra* note 37.

⁴⁰ *Cap-and-Trade Program*, *supra* note 37.

⁴¹ *Compliance Offset Program*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/about> (last visited Oct. 08, 2021).

⁴² Specific protocol for each type of project can be found at *Compliance Offset Protocols*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/compliance-offset-protocols> (last visited Oct. 08, 2021).

⁴³ *ARB Offset Credit Issuance*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/arb-offset-credit-issuance> (last visited Oct. 08, 2021).

⁴⁴ CAL. CODE REGS. tit. 17, § 95970(a)(1).

⁴⁵ *FAQ Cap-and-Trade Program*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/resources/documents/faq-cap-and-trade-program> (last visited Oct 12, 2021).

⁴⁶ Offset verifiers are accredited individuals, while offset verification bodies are corporate entities. (or use another term).

competency to receive such accreditation.⁴⁷ They must further provide notice before being approved to act as a verifier for specific projects and are required to disclose any conflicts of interest to CARB.⁴⁸ Offset Project Operators (OPOs) must report prospective projects to an Offset Project Registry (OPR), where it will be approved and listed. OPOs must monitor and report the purported benefits claimed by the project through emissions reduction or removal enhancement. If the OPR is satisfied that the project satisfies the conditions set forth under the program's regulations,⁴⁹ it may issue registry offset credits. After obtaining registry offset credits, an OPO applies for CARB offset credits, the issuance of which requires CARB to fully review documentation of the project's benefits and the retirement of the registry offset credits.⁵⁰

Key to cap-and-trade programs like CARB's that enable participants to generate offset credits is the concept of additionality. CARB's cap-and-trade regulations define "additional" as referring to "greenhouse gas emission reductions or removals that exceed any greenhouse gas reduction or removals otherwise required by law, regulation, or legally binding mandate and that exceed any greenhouse gas reductions or removals that would otherwise occur in a conservative business-as-usual scenario."⁵¹ The regulations further provide that, to meet the program's requirement of additionality, "[t]he GHG reductions and GHG removal enhancements resulting from the offset project exceed the project baseline calculated by the applicable version of the Compliance Offset Protocol."⁵² Each type of offset project has its own protocol for calculating the amount of emissions reductions or removal

⁴⁷ See CAL. CODE REGS. tit. 17, § 95978.

⁴⁸ See CAL. CODE REGS. tit. 17, § 95979.

⁴⁹ CAL. CODE REGS. tit. 17, §§ 95801–96022.

⁵⁰ *Offset Verification*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/offset-verification> (last visited Oct. 12, 2021).

⁵¹ CAL. CODE REGS. tit. 17, § 95802(a); see also CAL. CODE REGS. tit. 17, § 95973(a)(2)(A) (Specifying that, along with other additionality requirements delineated in § 95973, "[t]he activities that result in GHG reductions and GHG removal enhancements are not required by law, regulation, or any legally binding mandate applicable in the offset project's jurisdiction, and would not otherwise occur in a conservative business-as-usual scenario.").

⁵² CAL. CODE REGS. tit. 17, 95973(a)(2)(C).

enhancements represented by the project.⁵³ For example, the Compliance Offset Protocol Livestock Projects prescribes the specific formulas to be used to quantify baseline emissions, the amount of emissions expected to be generated in a “business-as-usual scenario,” and the actual emissions generated by the project.⁵⁴ In performing these calculations, a wide range of data is required, including the average monthly population of livestock and the average monthly ambient temperature. The protocol requires input of site-specific information for certain categories of data.⁵⁵

V. Identifying the potential for fraud in carbon trading programs based on past experiences with RIN fraud

Carbon offset credits like those utilized in CARB’s cap-and-trade program share some similarities with RINs, and the federal government’s experiences with RIN fraud may offer some insight into preventing and detecting fraud in programs that utilize such credits. When examining similar foreign programs, INTERPOL noted in a 2013 report that, “emerging carbon markets, like any market, are at risk of exploitation through criminal means and therefore require proper monitoring and enforcement to ensure environmental and financial integrity.”⁵⁶ The U.S. renewable fuel experiences and the INTERPOL report demonstrate the potential for parties to claim to generate credits that they are not entitled to through simple data manipulation⁵⁷ and more sophisticated schemes.

⁵³ *Id.*

⁵⁴ See CAL. ENV’T PROT. AGENCY, COMPLIANCE OFFSET PROTOCOL LIVESTOCK PROJECTS: CAPTURING AND DESTROYING METHANE FROM MANURE MANAGEMENT SYSTEMS (2014).

⁵⁵ *Id.*

⁵⁶ GUIDE TO CARBON TRADING CRIME, *supra* note 35, at 2.

⁵⁷ The report identified four other general categories of potential carbon crime, in addition to fraudulent credit claims: “(ii) Sale of carbon credits that either do not exist or belong to someone else; (iii) False or misleading claims with respect to the environmental or financial benefits of carbon market investments; (iv) Exploitation of weak regulations in the carbon market to commit financial crimes, such as money laundering, securities fraud or tax fraud; and (v) Computer hacking/ phishing to steal carbon credits and theft of personal information.” *Id.* at 11.

One obvious lesson from the RFS enforcement experience is that “buyer beware” market incentives alone are not sufficient to prevent fraud. While market incentives may be useful as part of a multi-faceted approach to ensure compliance with program regulations, they are not alone effective at preventing fraud. Credits are intangible commodities that derive from a tangible project, and therefore, the only way to verify their validity is to examine the project for its compliance with a set of complex regulatory requirements. As the RIN experience demonstrated, buyers at the end of a long trading chain were hard-pressed to be able to examine the factories and processes of the RIN generator. Carbon offset credits are perhaps more vulnerable to fraudulent activity than RINs because they are not tied to the creation of an actual physical product. “Carbon as an intangible asset leads to a separation between ownership of the investment project and the rights to trade the emissions that are offset. This makes tracing the origin of carbon credits more difficult than for other credits derived from physical commodities.”⁵⁸ Credit buyers may source credits from many different generators at the same time. These generators can be scattered around the United States, all of which creates impediments for buyer due diligence.

Requiring entities claiming offset credits to submit underlying qualitative data is one fraud deterrent, as the difficulty of falsifying all the qualitative information underlying the creation of the credit increases the likelihood that individuals seeking to submit false data will raise red flags for auditors and investigators. Analysis of fraudulent RIN generators’ data suggested that an entity may be misrepresenting the quantities of renewable fuel being generated, meriting further investigation. It also yielded useful evidence to support charges against them after that further investigation. By requiring details on generation, business operation, and sales relating to renewable fuel, the RFS program created a rich source of information from which evidence could be derived to show fraud. For example, examining records submitted in the RFS program allowed investigators to ascertain that purported producers were claiming that they operated their facilities at maximum capacity 24 hours a day, seven days a week, for extended periods. Such perfect performance is unlikely over a long period and was a useful indicator for further investigation, such as calculating raw material and energy

⁵⁸ *Id.* at 25.

needs, waste generation, and other costs associated with full production. Comparing those with a target's actual consumption and generation provided significant evidence of invalid generation. The identity of renewable fuel purchasers was another useful piece of data for investigators to have access to since it provided a known universe of potential outlets for the generator's product so that each could be investigated.

California's cap-and-trade program regulations require similar potentially useful data. For example, OPOs must routinely submit offset project data reports containing specified data and a certification that the data submitted is accurate and collected in accordance with the program's protocols. OPOs are further obligated to retain records containing a wide range of data relating to an offset project for a minimum of 15 years and to submit such data to CARB or an OPR upon request.⁵⁹ The regulations further require the registries to which such offset project data reports are submitted to retain records for 15 years.⁶⁰ They also impose records retention and certification requirements on verifiers, who must attest that verification services were performed in compliance with program requirements.⁶¹ In addition to the crucial evidence such data can provide to investigators, such provisions help make individuals accountable for false statements. Furthermore, just as in the RFS program, records retention requirements support criminal investigators' probable cause to believe that such records will be found in the possession of an entity required to keep them when seeking search warrant approvals. The ability to obtain records from sources other than a project operator is also useful because it allows for comparison of raw data with submitted data, a process that can detect discrepancies and potential false representations by an operator.

Another takeaway from the RIN fraud investigations described above is the need for individual accountability for information submitted to program administrators. One feature that aided criminal investigators was the unique login information required to access the CDX exchange. This information was useful for locating witnesses and holding responsible individuals accountable who entered fraudulent information into the system to generate RINs. However, it was still

⁵⁹ CAL. CODE REGS. tit. 17, § 95976(e).

⁶⁰ CAL. CODE REGS. tit. 17, § 95988.

⁶¹ CAL. CODE REGS. tit. 17, § 95977.1(f).

necessary to link false submissions under a computer login to an actual person, and frequently in a complex fraud operation, the actual data submission is completed by a low-level employee at the direction of the scheme's primary beneficiary. In those situations, the quarterly summary reports that generators were required to submit were valuable because they required a "wet-ink" signature by the responsible party. These reports contained summaries of the CDX submitted data, so even in those situations where agency and knowledge of the false generation submissions was difficult to establish, the quarterly report submissions could be used as a basis for a fraud allegation. In addition, the requirement to retain PTDs aided investigators in tracing a particular quantity of fuel that a generator claimed to create to determine if it existed and what its ultimate use was.

While data and records are useful in detecting fraud, they must be combined with actual oversight of the physical sites of projects to verify the activities claimed by project operators. For several RIN fraud defendants, such as in the Clean Green Fuels case,⁶² a cursory visit to a site at which renewable fuel was purportedly being produced would have revealed the falsity of such claims. Others utilized facilities that could be made to appear functional even though they were not. Therefore, project inspections that occur before initial approval of their additions to an OPR or its equivalent should be combined with periodic surprise inspections to prevent operators that make fraudulent claims about projects the notice they need to create the appearance of legitimacy.

Another crucial tool for combatting fraud, adopted later by EPA to address issues in the RFS program, was the use of third-party auditors. In the RFS context, auditors provided additional oversight and reassurance to obligated parties that purchased RINs were legitimately generated. Fully instituted in 2015 after a transition period, the Quality Assurance Program (QAP) utilized such auditors to verify compliance with program requirements, with the goal of promoting market confidence and liquidity.⁶³ Under the program, a

⁶² *United v. Hailey*, No. 11-0540, 2012 WL 2339275 (D. Md. June 13, 2012).

⁶³ 40 C.F.R. Part 80, subpart M; see *Quality Assurance Plans under the Renewable Fuel Standard Program*, ENV'T PROT. AGENCY, <https://www.epa.gov/renewable-fuel-standard-program/quality-assurance-plans-under-renewable-fuel-standard-program> (updated May 11, 2021). The voluntary QAP program includes: verification of feedstocks, verification that

RIN generator could have their RINs certified as having been audited by a quality auditor, one approved by EPA. Buyers would have the option to then buy non-certified or certified RINs and gain some level of protection from having to replace those RINs if they are later found to be fraudulently generated. INTERPOL's Guide to Carbon Crime points out that oversight for auditors is a crucial complement to oversight for those claiming carbon credits and is needed to ensure that required audits are actually performed and that the entities conducting them are doing so with the required expertise.⁶⁴ Additionally, requirements such as that included in California's program that offset verifiers rotate periodically serves as a check on potential coordination or conspiracy between project operators and verifiers.⁶⁵

Related to the need for understandable regulations that enable parties to assess whether they are purchasing valid offset credits, specific guidelines for additionality are necessary to ensure that it serves as a meaningful limitation leading to the issuance of offset credits for projects that do in fact cause a reduction in carbon emissions. It is crucial that designers of a cap-and-trade program utilizing offsets "establish clear guidelines on determining additionality," as well as "procedures to ensure the measurement process, methodologies and calculations of emissions reductions are conducted transparently and are easily verifiable, including use of indicators or types of data that are difficult to manipulate, clearly defined and easy to verify objectively."⁶⁶ Unlike the physical quantities of renewable fuel produced in the RFS program, additionality is a concept that is difficult to independently measure. Due to the challenge inherent in attempting to verify the accuracy of

volumes produced are consistent with amount of feedstocks processed, mass and energy balances, and verification that RINs are categorized appropriately and match volumes of fuel produced. It includes site visits by auditors to examine facilities and processes. 40 C.F.R. 80.1472; *see also* 79 Fed. Reg. 42078.

⁶⁴ In 2008 and 2009, the UN suspended two auditing companies operating within the EU's Emissions Trading Scheme (ETS). Investigations found that both companies had certified projects as compliant without actually performing in-person surveys. GUIDE TO CARBON TRADING CRIME, *supra* note 35, at 13.

⁶⁵ CAL. CODE REGS. tit. 17, § 95977.1(a).

⁶⁶ GUIDE TO CARBON TRADING CRIME, *supra* note 35, at 2.

claims of additionality, prosecuting a fraud on the sole ground that the requirement of additionality was not met could prove difficult. Future investigations into carbon credit fraud claims could also be difficult when carbon credit systems involve some level of review and approval of additionality claims by project verifiers before generating carbon credits. It would likely be insufficient, therefore, in a potential criminal case to show that additionality did not (or even could not) result from a generator's claim. Such a case would require additional evidence that an entity claiming to be entitled to offset credits had intentionally used false data or manipulated the data to generate inaccurate results or show that they took affirmative steps to hide or misrepresent facts during the audit initially approving the ability to generate credits. These difficulties were not factors in prior RIN fraud prosecutions.

Other potential avenues for fraud in a carbon credit program could stem from the covered entities themselves, rather than from a generator of offset credits. For example, a covered entity could seek to free itself from an obligation to buy carbon credits by underreporting its emissions, allowing it to sell credits that it possessed that it would have otherwise needed to fulfill its compliance obligations. This type of fraud was not uncovered at a large scale in the RFS program. In the RFS program, an obligated party's need for RINs is tied to its sale of a valuable product, such as transportation fuel. But in a carbon credit program, the need for a credit is tied to a party's disposal of a waste into the air. Underreporting fuel sales in significant quantities would be readily detectable and require the falsification of many kinds of records, the cooperation of multiple unaffiliated business, as well as financial underreporting. The risk of discovery of such a scheme is high and very quickly implicates other financial and disclosure crimes. In contrast, underreporting carbon emissions requires the involvement of no additional entities, no new paper trail is needed, and no complex financial manipulation is required. These factors may make this kind of "fraud" more attractive in a carbon credit scheme than in a fuel credit program.

VI. Conclusion

Our experience as ECS prosecutors teaches us that novel programs that offer financial incentives to participation often go hand in hand with novel fraudulent schemes to exploit the potential for profit created by those programs without complying with their requirements. Awareness of possible means of manipulation and falsification can help program administrators create safeguards for detecting and deterring fraud. While hindsight is 20/20, our hope is that a look back at the RFS program can assist in providing some foresight on the ways in which carbon credit trading programs could be manipulated by bad actors and methods that could be used to combat that manipulation. Identifying the potential for criminal conduct and providing the tools needed to deter that conduct serves to preserve limited program resources, to protect the integrity of incentive-based approaches to combatting climate change, and to avoid harm to law-abiding participants fulfilling their obligations under such programs.

About the Authors

Wayne D. Hettenbach is an assistant chief with the United States Department of Justice, Environment and Natural Resources Division's Environmental Crimes Section. In his over 20 years with the Department, he has prosecuted numerous domestic and international environmental cases. He helped develop and implement the Department's national Clean Air Act energy credit fraud initiative as well as prosecuting and supervising cases involving these violations. He has also been involved, throughout his tenure with the Department, in prosecuting complex wildlife trafficking cases, fisheries violations, vessel pollution crimes, and smuggling activities. Mr. Hettenbach currently advises the Financial Action Task Force on money laundering's relationship with environmental crimes, is a representative on the President's Wildlife Trafficking Task Force, and helped craft the United States National Strategy to Combat Wildlife Trafficking and its Implementation Plan. He is a regular presenter at the Federal Law Enforcement Training Center, the National Advocacy Center, and for international law enforcement academies around the world.

Lauren D. Steele is a trial attorney with the Environmental Crimes Section. Since joining the Department in 2014, she has investigated and prosecuted cases arising from illegal fishing, international smuggling of marine mammal parts, oyster trafficking, and illegal discharges of oil into U.S. waters in violation of the Clean Water Act, as well as fraud against the Renewable Fuel Standard Program. She has also trained members of federal, state, and local law enforcement at the Federal Law Enforcement Training Center and the National Conservation Training Center and served as faculty for the Wildlife Crime Mock Trial Competition in Nairobi, Kenya.

Court-Appointed Corporate Monitors in Environmental Crimes Cases

Lana N. Pettus
Assistant Section Chief
Environmental Crimes Section

I. Introduction

The general terms “monitor” and “corporate monitor” are often used interchangeably to describe significantly different types of external monitoring arrangements for corporations. In the context of a criminal case, a monitor is generally an independent third party. The monitor may be imposed by a court as part of a criminal sentence pursuant to a plea agreement or after a trial and conviction. Alternatively, the monitor may function subject to an agreement between the government and the defendant corporation, such as a deferred prosecution agreement (DPA). The monitor may perform a combination of oversight, consultant, expert, trustee, investigatory, and auditor functions.¹ Similar roles include special masters and independent auditors.² The goal of appointing a monitor, generally in combination with a requirement to develop and adhere to a compliance plan, is to prevent the recurrence of criminal conduct and ensure future compliance with the law through a combination of enhanced detection and verification, prevention or incapacitation, and rehabilitation.³ Whether to impose a monitor and the role, duties, and obligations of a corporate monitor in any particular case is a fact-

¹ Veronica Root has undertaken the most thorough review and categorization of types of corporate monitors. Veronica Root, *Modern-Day Monitorships*, 33 YALE J. ON REG. 109, 116–117, 123–124, 144–145, 151–152 (2016); see also Veronica Root, *The Monitor-“Client” Relationship*, 100 VA. L. REV. 523, 524–525 (2014); Eugene Soltes, *Evaluating the Effectiveness of Corporate Compliance Programs: Establishing a Model for Prosecutors, Courts, and Firms*, 14 N.Y.U. J. L. & BUS. 965, 1010 (2018); W. Robert Thomas, *Incapacitating Criminal Corporations*, 72 VAND. L. REV. 905, 951 (2019).

² Root, *Modern-Day Monitorships*, *supra* note 1, at 116.

³ See *id.*; Mihailis E. Diamantis & William S. Laufer, *Prosecution and Punishment of Corporate Criminality*, 15 ANN. REV. L. & SOC. SCI. 453, 464 (2019); Thomas, *supra* note 1, at 951; Soltes, *supra* note 1, at 1010.

specific decision requiring consideration of the criminal conduct being addressed as well as the nature and structure of the corporate defendant and its industry, among other factors.⁴

As in other types of corporate prosecutions, corporate monitors can be a useful and important part of sentences in environmental crimes prosecutions. Environmental crimes cases often involve defendant corporations involved in highly regulated and complex chemical, physical, and technical processes that generate voluminous data and other records that are beyond the capacity of an ordinary probation office to review and supervise. Prosecutors and government agencies also may not have sufficient resources to perform the level of monitoring, oversight, and supervision necessary for the situation while continuing to monitor, investigate, and prosecute other cases. In that circumstance, a monitor can be instrumental in helping to determine whether a corporation is complying with its regulatory obligations and any other conditions of probation that a court may impose. In recent environmental crime prosecutions of large corporations, monitors have also been given authority to oversee the defendant corporations' development and implementation of ethics and compliance plans more broadly and to help mediate remediation claims between the defendant and local governments.⁵

The Biden administration has declared two priority areas for environmental enforcement in which a corporate monitor might have particular usefulness: climate change and environmental justice.⁶ Both issues have cumulative aspects—at least in part, the harms to be addressed are a function of continuous or repetitive releases of pollutants.

Climate change is a function of the addition of greenhouse gases into the atmosphere from numerous anthropogenic sources over time.⁷

⁴ See, e.g., Anthony S. Barkow & Michael W. Ross, *Introduction*, in *THE GUIDE TO MONITORSHIPS* (Anthony S. Barkow, et al. eds. 2nd ed. 2020).

⁵ Plea Agreement at 33–35, *United States v. Volkswagen AG*, No. 16-cr-20394 (E.D. Mich. Mar. 10, 2017), ECF No. 68 [hereinafter *Volkswagen AG Plea Agreement*]; Memorandum of Plea Agreement at 30–32, *United States v. Duke Energy Carolinas, LLC*, No. 15-cr-67 (E.D.N.C. May 14, 2015), ECF No. 57.

⁶ Exec. Order No. 14,008, 86 Fed. Reg. 7,619 (Jan. 27, 2021); Email from Michael S. Regan, Adm'r, Env'l Prot. Agency, to Emps. (Apr. 7, 2021).

⁷ See, e.g., ROYAL SOC'Y & U.S. NAT'L ACAD. OF SCIS., *CLIMATE CHANGE: EVIDENCE & CAUSES: UPDATE 2020* at B2 (2020).

Under most proposed regulatory strategies, climate change will require each of these sources to consistently adhere to requirements designed to reduce the release of greenhouse gases. Compliance failures by sources will undermine progress and necessitate offsetting reductions to maintain progress.⁸

Achieving environmental justice involves recognizing and meaningfully addressing disparities between communities in exposure to harmful pollutants and other forms of environmental degradation.⁹ In communities overburdened by pollution sources, environmental crimes, especially those involving additional or elevated emissions, can have particularly harmful effects on individuals who are vulnerable as a result of past pollution exposures.¹⁰ Consequently, measures that can prevent future violations by defendants, including the use of corporate monitors as a part of criminal sentences, are of heightened importance in the context of both climate change and environmental justice.

Existing literature has not closely examined the use of corporate monitors in environmental crimes cases. Most academic articles and government reports discussing and critiquing the use of corporate monitors in criminal prosecutions of organizations have focused on the use of monitors in conjunction with DPAs and non-prosecution agreements (NPAs). While DPAs and NPAs are somewhat more commonly used in the context of financial and other fraud cases, they are extremely rare in the environmental crimes context.¹¹ Some

⁸ See, e.g., *id.* at 18, 22.

⁹ See, e.g., Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

¹⁰ See, e.g., *Addressing Environmental Justice to Achieve Health Equity*, AM. PUB. HEALTH ASS'N, (Nov. 5, 2019), <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2020/01/14/addressing-environmental-justice-to-achieve-health-equity> (Policy Number 20197).

¹¹ David M. Uhlmann, *Deferred Prosecution and Non-Prosecution Agreements and the Erosion of Corporate Criminal Liability*, 72 MD. L. REV. 1295, 1316, 1318–19 (2013); BRANDON L. GARRETT, TOO BIG TO JAIL 65–66, 128–129 (2014) (noting that 25% of federal corporate prosecutions between 2001 and 2012 were environmental prosecutions but only 6 of 255 deferred prosecution agreements in that time period were in environmental crimes prosecutions); Diamantis, *supra* note 3, at 459 (suggesting that “[t]he level of scholarly attention DPAs and NPAs receive may seem disproportionate to the rate of such agreements, i.e., just 30 to 40 a year”); Thomas, *supra* note 1, at 915–16

common issues arise anytime parties in a criminal case consider using a corporate monitor; however, imposing a corporate monitor as part of a plea agreement or a post-trial sentence in an environmental crimes case poses unique considerations for prosecutors.¹²

II. The historical and current use of corporate monitors in environmental crimes prosecutions

In a typical corporate environmental crime prosecution, a corporation has failed to comply with the terms of a permit, regulation, or statute in managing a waste stream (through discharges to water; emissions to air; or other forms of storage, treatment, or disposal) or in consuming or destroying a natural resource. This conduct is frequently repetitive, and the substantive environmental crime is often accompanied by obstructive behavior, such as a failure to report, making false statements, coaching witnesses, or concealing and destroying evidence.¹³

(noting that between 2000 and December 2018 environmental prosecutions made up 24% of federal organizational prosecutions and that “coverage notwithstanding, there continues to be “far more corporate convictions, chiefly in the form of guilty pleas, than deferred and non-prosecution agreements”). One of the reasons for the less frequent use of DPAs and NPAs in environmental crimes cases is that compliance plans and monitorships can be, and are, imposed through civil and administrative environmental enforcement processes.

¹² For example, the source of authority for imposing a monitor is different under a DPA or NPA than in a plea agreement or post-trial sentencing order. Under a DPA or NPA, the monitor is imposed as a contractual obligation backed by the prosecutors’ broad authority to bring or decline charges. *See, e.g., United States v. Fokker Servs. B.V.*, 818 F.3d 733, 738–39, 741, 743–44 (D.C. Cir. 2016); Memorandum from Craig S. Morford, Acting Dep. Att’y Gen., U.S. Dep’t of Just., to Heads of Dep’t Components and U.S. Att’y’s, 1 n.2 (Mar. 7, 2008) [hereinafter Morford Memorandum]. When a monitor is imposed as part of a plea agreement or after a trial, the authority for doing so comes from 18 U.S.C. § 3563(b)(22) and U.S. SENT’G GUIDELINES MANUAL §§ 8D1.4(b)(1), (5), 8D1.4 cmnt. n. 1 (U.S. SENT’G COMM’N) [hereinafter U.S.S.G.].

¹³ *See* David M. Uhlmann, *Prosecutorial Discretion and Environmental Crime Redux: Charging Trends, Aggravating Factors, and Individual Outcome Data for 2005–2014*, 8 MICH. J. ENV’T & ADMIN. L. 297, 302, 336–38, 340–41 (2019).

One of the ultimate goals of an environmental crime prosecution is to prevent the recurrence of the charged crime and similar violations to protect the environment and public health. Prevention can be achieved by implementing specific technical fixes to equipment or processes, making it harder for bad actors within a company to remain undetected through specific organizational and reporting changes, or by inducing changes to the corporate culture such that compliance and ethics are valued within the company and officers, employees, and agents conduct themselves accordingly.¹⁴ Monitors can and have played a role in each of these means of prevention in environmental crimes prosecutions.

A. Early examples of court-appointed monitors: *Ionia Management and Atlantic States*

In *United States v. Ionia Management, S.A.*, the court appointed a special master as a condition of probation following the trial and conviction of a recidivist vessel operating company on multiple violations of the Act to Prevent Pollution from Ships and Obstruction.¹⁵ As part of its probation, Ionia Management was required to develop effective procedures for keeping “written records which account for the generation, storage, processing, transfer and disposal of waste oil, oily bilge water, sludge, and other oil-contaminated waste generated in the engine room;” an effective methodology and procedures to analyze and compare these shipboard records with the electronic records generated by specialized equipment on the company’s vessels; and “effective, systematic procedures for continuous assessment and improvement of IONIA’s compliance efforts . . . designed to foster a culture of compliance . . . and change.”¹⁶ The special master was charged with conducting and reporting at biannual evidentiary hearings to ensure the company’s compliance with the law and the accuracy of its waste

¹⁴ See, e.g., Memorandum from Lisa O. Monaco, Dep. Att’y Gen., U.S. Dep’t of Just., Corporate Crime Advisory Group and Initial Revisions to Corporate Criminal Enforcement Policies (Oct. 28, 2021).

¹⁵ Special Master Appointment and Scope of Work, *United States v. Ionia Mgmt., S.A.*, No. 07-cr-134 (D. Conn. Apr. 23, 2008), ECF No. 282; Judgment, *Ionia Mgmt., S.A.*, No. 07-cr-134, ECF No. 226; United States’ Sentencing Memorandum at 11–14, *Ionia Mgmt., S.A.*, No. 07-cr-134, ECF No. 199 (describing Ionia Management’s prior conviction for similar conduct).

¹⁶ Special Master Appointment and Scope of Work, *supra* note 15, at 1–2.

records, “evaluat[ing] the results of any audits or assessments performed under th[e court’s] order, and assess[ing] the adequacy of [Ionia’s] procedures to” improve its compliance efforts.¹⁷

The court’s order also provided for an “independent environmental consultant” (IEC) to provide assistance to the special master with technical matters and an “independent corporate consultant” (ICC) to provide assistance to the special master in “assessing company practices” related to compliance.¹⁸ Both the IEC and the ICC were also available to “advise IONIA employees” in their relevant areas of expertise.¹⁹ The court selected the special master from a group of candidates nominated by both the defendant and the government at the court’s direction. While Ionia Management committed a probation violation within just a few months of being sentenced by failing to have required monitoring equipment installed on at least one of its ships,²⁰ it completed the remainder of the probation period without further violations.

At the time, the *Ionia Management* special master was an anomaly in environmental crimes cases. While other environmental prosecutions had involved the appointment of auditors and other third parties to help monitor specific aspects of a defendant’s operations and records, no prior auditor or monitor had been involved in systematic, iterative efforts to improve a company’s compliance policies. Further, no monitorship or other monitoring arrangement in an environmental prosecution before or since involved biannual evidentiary hearings.

Just over a year after the appointment of the special master in *Ionia*, a court, in *United States vs. Atlantic States Cast Iron Pipe Co.*, appointed a monitor for the corporate defendant as part of a four-year term of probation following Atlantic States’s 2006 trial conviction on a conspiracy to defraud the United States and multiple counts of making false statements, obstruction of the Occupational Safety and Health Administration, and violations of the Clean Air and Clean Water Acts, and an unsuccessful appeal of its conviction by Atlantic States.²¹ Atlantic States was just one of five prosecuted subsidiaries of

¹⁷ *Id.* at 2.

¹⁸ *Id.* at 3.

¹⁹ *Id.*

²⁰ See Finding of Violation of Probation and Order Related to Further Proceedings, *Ionia Mgmt., S.A.*, No. 07-cr-134, ECF No. 252.

²¹ Order Appointing Samuel P. Moulthrop as Monitor as to Atlantic States Cast Iron Pipe Company, *United States v. Atl. States Cast Iron Pipe Co.*, No.

McWane Industries, “one of the world’s largest makers of cast-iron water and sewer pipes” with “subsidiaries located throughout the United States and Canada,” for criminal violations involving discharges to water, emissions to air, and numerous worker deaths and injuries.²² The *Atlantic States* monitor’s role was “to report to the Court on Atlantic States’ reasonable compliance with all environmental and worker health and safety laws and regulations” similar to a probation officer.²³ The monitor was to report potential violations of law outside the scope of environmental protection and worker safety to the probation office for further investigation or determination.²⁴ The monitor was directed to prepare and submit written reports on Atlantic States’s compliance with the terms of probation and environmental and health and safety laws and regulations on April 1 and October 1 of every year during the period of probation.²⁵ These reports were initially ordered to be publicly filed²⁶ but do not appear on the publicly available docket for the case.

In 2010, David Uhlmann, the former chief of the Environmental Crimes Section at the time of the prosecution, described McWane as having “brought in an A team of environmental and safety people,” though he also pointed out, “It’s not what you say, it’s what you do over . . . a long period of time.”²⁷ Thus far, there have been no further environmental crimes prosecutions at a McWane pipe manufacturing facility.

03-cr-852 (D.N.J. June 30, 2009), ECF No. 813 [hereinafter Order Appointing Monitor]; Judgment, *Atl. States Cast Iron Pipe Co.*, No. 03-cr-852, ECF No. 770.

²² U.S. ENV’T PROT. AGENCY, FACT SHEET: *UNITED STATES V. ATLANTIC CAST IRON PIPE COMPANY, ET AL.*, No. 03-CR-00852 (D.N.J.) 1 (2009).

²³ Order Appointing Monitor, *supra* note 21, at 1–2.

²⁴ *Id.* at 2–3.

²⁵ *Id.* at 5.

²⁶ *Id.*

²⁷ *10 Essentials of McWane’s Culture Change*, INDUS. SAFETY & HYGIENE NEWS (June 3, 2010), <https://www.ishn.com/articles/89805-10-essentials-of-mcwanes-culture-change> (quoting David Uhlmann, *McWane* prosecutor).

B. Current practices for monitors in environmental crimes prosecutions

1. Legal authority and policy guidance

Like monitorships in other federal criminal contexts, monitorships in environmental crimes prosecutions are bound by law and guided by Department of Justice (Department) policy. Courts are authorized to impose court-appointed monitors as a special condition of probation.²⁸ A court-appointed monitor can help satisfy the requirement that a criminal sentence “protect the public from further crimes of the defendant” and provide the defendant with the organizational equivalent of “correctional treatment.”²⁹ The United States Sentencing Guidelines further contemplate that, as part of imposing a compliance and ethics program as a special condition of probation, “the court may employ appropriate experts who shall be afforded access to all material possessed by the organization that is necessary for a comprehensive assessment of the proposed program” to “assess the efficacy of a compliance and ethics program submitted by the organization.”³⁰ When included as part of a plea agreement, like any other term, a court can decline to incorporate a monitorship or reject a plea agreement offered under Federal Rule of Criminal Procedure 11(c)(1)(C) if the judge concludes that the proposed terms of the monitorship do not adequately reflect the nature and seriousness of the offense, do not serve the purposes of a criminal sentence, or otherwise undermine faith in the fairness of the justice system.³¹ As

²⁸ 18 U.S.C. § 3563(b)(22) (as part of probation, a court may order that a defendant “satisfy such other conditions as the court may impose” as long as “such conditions are reasonably related to the factors set forth in section 3553(a)(1) and (a)(2)”).

²⁹ 18 U.S.C. § 3553(a)(2)(C)–(D).

³⁰ U.S.S.G. § 8D1.4 cmt. n.1.

³¹ FED. R. CRIM. PRO. 11(c); *Santobello v. New York*, 404 U.S. 257, 262 (1971) (“A court may reject a plea in [the] exercise of sound judicial discretion”); *United States v. Ammidown*, 497 F.2d 615, 622 (D.C. Cir. 1973); *United States v. Severino*, 800 F.2d 42, 46 (2d. Cir. 1986); *United States v. Moore*, 916 F.2d 1131, 1135–36 (6th Cir. 1990); *United States v. Bean*, 564 F.2d 700, 703–04 (5th Cir. 1977) (“A decision that a plea bargain will result in the defendant’s receiving too light a sentence under the circumstances of the case is a sound reason for a judge’s refusing to accept the agreement.”); *United States v. Carrigan*, 778 F.2d 1454, 1458 (10th Cir. 1985). In an

with all of their duties, prosecutors involved in selecting a monitor are required to “be mindful of their obligation to comply with the conflict-of-interest guidelines set forth in 18 U.S.C. § 208 and 5 C.F.R. Part 2635.”³²

The earliest Department-wide policy on monitors issued to date is a 2008 guidance memorandum titled “Selection and Use of Monitors in Deferred Prosecution Agreements and Non-Prosecution Agreements with Corporations,” also known as the “Morford Memorandum.”³³ While the specific requirements detailed in the Morford Memorandum apply only to DPAs and NPAs and expressly do not apply to plea agreements,³⁴ the issues the memorandum seeks to address and the objectives it sets for monitorships are helpful to consider even when designing a monitorship as part of a criminal sentence. The Morford Memorandum provides guidance grouped in three topics: the selection process, the appropriate scope of the monitor’s duties, and the duration of the monitorship.³⁵

With respect to the selection of a monitor, the Morford Memorandum advises that the parties “should discuss the necessary qualifications for a monitor based on the facts and circumstances of the case” to help ensure that the monitor selected is “highly qualified and . . . suitab[le] for the assignment and all of the circumstances.”³⁶ The terms of a monitorship should emphasize the independence of the monitor from the defendant and the government while encouraging

Environmental Crimes vessel pollution case, one judge opted to ban the two corporate defendants from bringing vessels to port in the United States until its criminal penalties were paid, rather than impose an environmental compliance plan that would have included a monitor provision, as requested by the government. At sentencing defense counsel argued that one defendant corporation had gone out of business and planned to dissolve and that the other company was unable to pay a significant fine. United States’ Sentencing Memorandum at 20–22, *United States v. Ignacio*, No. 15-cr-108 (E.D.N.C. Jan. 4, 2017), ECF No. 138; Sentencing Transcript at 26–28, 42, 45, *Ignacio*, No. 15-cr-108, ECF No. 148.

³² Morford Memorandum, *supra* note 12, at 3.

³³ *Id.*

³⁴ *Id.* at 1 n.2. (“These Principles do not apply to plea agreements, which involve the formal conviction of a corporation in a court proceeding.”)

³⁵ *Id.* at 2.

³⁶ *Id.* at 3.

open communication.³⁷ To this end, monitorships often prohibit the monitor from working in other capacities for the defendant or entering into other contractual arrangements with the defendant for a period before and after the monitorship.³⁸

The Morford Memorandum identifies the “monitor’s primary responsibility” as assessing and monitoring “a corporation’s compliance with those terms of the agreement that are specifically designed to address and reduce the risk of recurrence of the corporation’s misconduct, including, in most cases, evaluating (and where appropriate proposing) internal controls and corporate ethics and compliance programs.”³⁹ In the environmental context, the terms designed to address and reduce the risk of recurrence of the corporation’s conduct are often found in the form of an environmental compliance plan (ECP) imposed as a special condition of probation. Thought must also be given, per the Morford Memorandum, to the monitor’s access to information about past misconduct and information concerning the company’s current activities to effectively carry out its duties.⁴⁰ The monitor’s focus should not be on investigating past behavior, but access to some background information can help “inform a monitor’s evaluation of the effectiveness of the corporation’s compliance with the agreement.”⁴¹ The Morford Memorandum also advises prosecutors to thoughtfully consider how the monitor, corporation, and government will communicate with one another during the monitorship, including whether the monitor will produce written reports, how the corporation should communicate disagreement with a monitor’s recommendation, and how the monitor should report previously undisclosed or new misconduct by the corporation.⁴²

In the years following the Morford Memorandum, the Criminal Division released a number of additional memoranda providing more

³⁷ *Id.* at 4–5.

³⁸ *See, e.g., Volkswagen AG Plea Agreement, supra* note 5, at 35; Environmental Compliance Plan, at 21, *United States v. Princess Cruise Lines, LTD*, No. 16-cr-20897 (S.D. Fla. Dec. 1, 2016), ECF No. 2-2 [hereinafter *Princess Cruise Lines ECP*] (requiring the “contractual independence” of the third party monitor).

³⁹ Morford Memorandum, *supra* note 12, at 5.

⁴⁰ *Id.* at 5–6.

⁴¹ *Id.* at 6.

⁴² *Id.* at 6–7.

detailed procedures for its attorneys to follow in implementing the principles set out in the Morford Memorandum. In 2009, it issued a memorandum titled “Selection of Monitors in Criminal Division Matters,” also known as the “Breuer Memorandum,” which provided more detailed instructions to Criminal Division attorneys on complying with the Morford Memorandum.⁴³ The Breuer Memorandum was superseded by an October 2018 memo of the same title issued by then-Assistant Attorney General of the Criminal Division Brian Benzckowski.⁴⁴

In 2010, the Department-wide “Grindler Memorandum” directed that DPAs and NPAs must address, in writing, the role of the Department in dispute resolution between monitors and corporations. In particular, it clarified that the Department should not arbitrate “contract disputes” between the monitor and the corporation because the Department is not a party to the contracts used to hire the monitor.⁴⁵ A court-appointed monitor largely avoids the issue

⁴³ Memorandum from Lanny A. Breuer, Assistant Att’y Gen., U.S. Dep’t of Just., to Criminal Division Personnel (June 24, 2009).

⁴⁴ Memorandum from Brian A. Benzckowski, Assistant Att’y Gen., U.S. Dep’t of Just., to Criminal Division Personnel (October 11, 2018) [hereinafter Benzckowski Memorandum]; Press Release, Dep’t of Just., Assistant Attorney General Brian A. Benzckowski Delivers Remarks at NYU School of Law Program on Corporate Compliance and Enforcement Conference on Achieving Effective Compliance (October 12, 2018) (“The goal of the new guidance is to further refine the factors that go into the determination of whether a monitor is needed, as well as clarify and refine the monitor selection process. Importantly, the new policy supersedes the guidance contained in the 2009 Breuer Memorandum regarding the selection of corporate monitors, but it does not replace prior guidance contained in the memorandum issued in 2008 by then Acting Deputy Attorney General Morford.”). The Benzckowski Memorandum was recently superseded by a memorandum issued by Deputy Attorney General Lisa O. Monaco. Press Release, Dep’t. of Just., Deputy Attorney General Lisa O. Monaco Gives Keynote Address at ABA’s 36th National Institute on White Collar Crime (October 28, 2021) (“To the extent that prior Justice Department guidance suggested that monitorships are disfavored or the exception, I am rescinding that guidance.”).

⁴⁵ Memorandum from Gary G. Grindler, Acting Dep. Att’y Gen., U.S. Dep’t of Just., Additional Guidance on the Use of Monitors in Deferred Prosecution Agreements and Non-Prosecution Agreements with Corporations (May 25, 2010) [hereinafter Grindler Memorandum].

addressed by the Grindler memo as the court is the obvious arbitrator of any disputes, though court-appointed monitorships may provide mechanisms for parties to confer and attempt to resolve disagreements before involving the court.⁴⁶

Most recently, on October 28, 2021, Deputy Attorney General Lisa O. Monaco issued a Department-wide memorandum titled “Corporate Crime Advisory Group and Initial Revisions to Corporate Criminal Enforcement Policies.”⁴⁷ Among other corporate criminal enforcement issues, it addressed and modified “standards, policies, and procedures for evaluating the necessity of monitors in corporate criminal matters being handled by Department attorneys” and applied to both plea agreements and corporate diversionary agreements.⁴⁸ Significantly, it commits the Department to “imposing monitors where appropriate in corporate criminal matters” and directs Department attorneys to determine the appropriateness on a case-by-case basis by evaluating “(1) the potential benefits that employing a monitor may have for the corporation and the public, and (2) the cost of the monitor and its impact on the operations of a corporation.”⁴⁹ A monitor’s potential benefits are clear when an “investigation reveals that a compliance program is deficient or inadequate in numerous or significant respects” such as being “untested, ineffective, inadequately resourced, or not fully implemented.”⁵⁰

2. In practice

Not every case involving an ECP includes a monitorship. Whether to include a monitor as part of a sentence depends on multiple factors, such as the nature and complexity of the ECP, the size and resources of the defendant, and the degree of oversight exercised by other entities, such as regulatory agencies, in addition to the considerations set forth in Department policy.

⁴⁶ See, e.g., Monitorship Order at 6, United States v. Pac. Gas & Elec. Co., No. 14-cr-175 (N.D. Cal. Jan. 26, 2017), ECF No. 916 (providing a process for the parties and the monitor to discuss and reach agreement on the monitors proposed annual budget).

⁴⁷ Memorandum from Lisa O. Monaco, Dep. Att’y Gen., U.S. Dep’t of Just., Corporate Crime Advisory Group and Initial Revisions to Corporate Criminal Enforcement Policies (Oct. 28, 2021) [hereinafter Monaco Memorandum].

⁴⁸ *Id.* at 2.

⁴⁹ *Id.* at 2.

⁵⁰ *Id.* at 2–3.

Since 2010, the most common model for monitoring in environmental crimes prosecutions has been more similar to the McWane monitor than the Ionia Management special master—a monitor or auditor (or sometimes both) tasked with verifying that the defendant complies with its legal obligations under environmental statutes and regulations as well as any special conditions of probation, such as the terms of an ECP.⁵¹ In a few cases, the defendant was required to pay for a third-party consultant to develop or to help develop a compliance plan for the company.⁵²

Monitors in environmental crimes cases have been lawyers and non-lawyers. ECPs and other sentencing provisions in environmental crimes cases may be highly technical. They may involve detailed

⁵¹ See, e.g., Plea Agreement, *United States v. Selective Structures, L.L.C.*, No. 10-cr-61 (E.D. Tenn. May 11, 2010), ECF No. 2; Plea Agreement, *United States v. Miami Air Int'l, Inc.*, No. 10-cr-20901 (S.D. Fla. Jan. 18, 2011), ECF No. 13; Environmental Compliance Plan, *United States v. Pelican Ref. Co.*, No. 11-cr-227 (W.D. La. Dec. 15, 2011), ECF No. 10; Judgment, *United States v. Conopco, Inc.*, No. 13-cr-223 (D. Conn. Apr. 3, 2014), ECF No. 31; Judgment, *United States v. Airgas Doral, Inc.*, No. 16-cr-20270 (S.D. Fla. May 26, 2015), ECF No. 26; Minute Entry: Sentencing of Mark Pullyblank, *United States v. Pullyblank*, No. 13-cr-198 (N.D.N.Y. Aug. 4, 2015), ECF No. 103; Sentencing, *United States v. Lumber Liquidators, Inc.*, No. 15-cr-126 (E.D. Va. Feb. 1, 2016), ECF No. 20; Statement in Advance of Plea, *United States v. Young Living Essential Oils*, No. 17-CR-00541 (D. Utah Sept. 18, 2017), ECF No. 5; Sentencing Memorandum, *United States v. Tyson Poultry, Inc.*, No. 17-cr-5041 (W.D. Mo. Feb. 20, 2018), ECF No. 18; Plea Agreement, Exhibit C at 1–2, *United States v. Monsanto Co.*, No. 19-cr-162 (D. Haw. Nov. 21, 2019), ECF No. 3-3; Plea Agreement, *United States v. Joon, LLC*, No. 20-CR-93 (M.D. Ala. Nov. 9, 2020), ECF No. 16.

⁵² See Judgment at 3, *United States v. Mazza & Sons, Inc.*, No. 11-cr-264 (July 15, 2013, N.D.N.Y.), ECF No. 309 (“The Environmental Compliance Plan should be formulated, implemented, and administered through a third-party environmental auditor approved by the Court. No later than September 1, 2013, the parties are to submit the names of three independent third-party auditors to the Court and the probation officer for review and selection.”); Plea Agreement at 6–7, *United States v. Chem-Solv, Inc.*, No. 15-cr-106 (W.D. Va. Dec. 22, 2015), ECF No. 8 (“CHEM-SOLV will develop, fund, and implement a comprehensive Environmental and Safety Compliance Plan (‘ECP’) to prevent future violations at any facility at which CHEM-SOLV and/or any of its owners, principals, or officers have an interest consistent with U.S.S.G. § 8D1.4(c). The ECP will be prepared by an outside and independent environmental consultant acceptable to the United States.”).

safety measures for complex processes within a facility and related measures for handling, transporting, storing, and disposing of both hazardous and non-hazardous waste streams and byproducts. Monitors may need scientific, industry-specific, or regulatory expertise (or the ability to obtain team members with such expertise), or all three if the ECP involves monitoring physical, chemical, or biological emissions and conditions or compliance with overlapping and extensive federal, state, local, or international legal requirements. A well-designed and well-selected monitorship has technical and other resources that allow the monitor to effectively and efficiently fulfill the oversight role and reduce the potential resource burdens on the court, probation officer, and government.

Most environmental crimes monitorships require monitors to produce written reports at least annually to the government, defendant, and the probation office. New misconduct or previously undisclosed misconduct is generally required to be reported to the government and the probation office as soon as is practicable. Because monitors in environmental crimes cases are imposed as special conditions of probation, courts, rather than prosecutors, become the arbiters of disputes between monitors and defendants over topics such as billing, access to information, and implementing the monitors' recommendations, largely eliminating the need for complicated dispute resolution protocols distinguishing between contractual and substantive disagreements.⁵³ Further, if a defendant obstructs the monitor's work or otherwise fails to comply with the ECP, that is a potential probation violation, rather than requiring the government to potentially proceed to a trial on the underlying charges to address the company's continued misbehavior, as might be necessary under a DPA or NPA.

Monitors and third-party auditors are routinely used in the Environmental Crimes Section's vessel pollution cases. The ECPs and associated duties of the monitor and third-party auditor have evolved as prosecutors have observed vessel pollution monitorships and their results in cases over time. Currently, in most vessel pollution cases, the monitors and third-party auditors are non-lawyer technical experts. A slate of monitor and third-party auditor candidates are nominated by the defendant and the government selects one of each

⁵³ The focus of the Grindler Memorandum. See Grindler Memorandum, *supra* note 45.

from the defendant's nominations. The monitor's name and work plan are then presented to the court along with the rest of the plea papers for approval.⁵⁴

During probation, the third-party auditor's tasks include conducting audits of defendants' vessels and shore-side office operations, surveying ship engineering personnel for additional information and feedback regarding the efficacy of defendant's compliance policies and practices, and reporting at least annually on the audit findings and recommended changes to the defendant's policies and procedures. The audits generally include an assessment of the adequacy and condition of the equipment used in waste management and pollution prevention, the competence of the engineering crew and other relevant staff, and the adequacy of the defendant's policies, procedures, and practices related to environmental compliance.⁵⁵

The monitor reviews the relationship between the third-party auditor and the defendant to ensure the third-party auditor's independence. The monitor is also given the discretion to report on any other information relevant to the defendant's ability to comply with the ECP and other marine environmental protection requirements. If the monitor becomes aware of any potential violations of law, the monitor is required to report that information to the government.⁵⁶

⁵⁴ See, e.g., Plea Agreement, *United States v. Pac. Carriers Ltd.*, No. 20-cr-87 (E.D.N.C. Dec. 1, 2020), ECF No. 28 [hereinafter *Pacific Carriers Plea Agreement*]; Plea Agreement at 24–25, 30–34, *United States v. Misuga Kaiun Co. Ltd.*, No. 20-cr-103 (M.D. Fla. Jul. 10, 2020), ECF No. 3 [hereinafter *Misuga Kaiun Plea Agreement*]; Environmental Compliance Plan at 5–6, 11–20, *United States v. Bernhard Schulte Shipmanagement (Singapore) PTE LTD.*, No. 20-cr-4 (D. Haw. Feb. 10, 2020), ECF No. 18 [hereinafter *Bernhard Schulte ECP*]; Environmental Compliance Plan at 5–6, 11–20, *United States v. Interorient Marine Servs. Ltd.*, No. 18-cr-366 (W.D. La. Feb. 6, 2019), ECF No. 13-5 [hereinafter *Interorient ECP*].

⁵⁵ See *Pacific Carriers Plea Agreement*, *supra* note 54; *Misuga Kaiun Plea Agreement*, *supra* note 54; *Bernhard Schulte ECP*, *supra* note 54; *Interorient ECP*, *supra* note 54.

⁵⁶ See *Pacific Carriers Plea Agreement*, *supra* note 54; *Misuga Kaiun Plea Agreement*, *supra* note 54; *Bernhard Schulte ECP*, *supra* note 54; *Interorient ECP*, *supra* note 54.

C. Examples of complex monitorships in environmental crimes prosecutions

Over the past decade, in five significant environmental crimes prosecutions of large companies, monitors were given broader authority, focusing more on rehabilitating corporate culture and other unique mandates while retaining the auditing and specific task oversight function of earlier monitors. These cases include the prosecutions against BP Exploration & Production, Inc.,⁵⁷ three subsidiaries of Duke Energy Corporation,⁵⁸ Princess Cruise Lines, LTD,⁵⁹ Volkswagen AG,⁶⁰ and Pacific Gas and Electric Company.⁶¹ The terms of each of these monitorships vary substantially based on the facts and needs of each case.

1. BP Exploration & Production

The *United States v. BP Exploration & Production* prosecution arose from the April 20, 2010 explosion and oil spill at the Macondo Well in the Gulf of Mexico, commonly known as the Deepwater Horizon incident after the drilling rig where eleven men died. BP Exploration & Production (BP E&P), a subsidiary of the multinational company BP plc, pleaded guilty to 11 counts of seaman's manslaughter,⁶² a negligent Clean Water Act count,⁶³ a Migratory Bird Treaty Act count,⁶⁴ and an obstruction of Congress count.⁶⁵

As part of its guilty plea, BP E&P agreed to a five-year probation period and an order appointing two monitors for four-year terms and a

⁵⁷ Proposed Plea Agreement and Factual Basis, *United States v. BP Exploration & Prod., Inc.*, No. 12-CR-292 (E.D. La. Nov. 15, 2012), ECF No. 2; Order for Accepting Plea Agreement, *BP Exploration & Prod., Inc.*, No. 12-CR-292, ECF No. 65.

⁵⁸ Notice of Filing of Original Guaranty, *Duke Energy Carolinas, LLC*, No. 15-cr-67, ECF No. 61.

⁵⁹ Princess Cruise Lines ECP, *supra* note 38.

⁶⁰ Plea Agreement, Exhibit 3, *Volkswagen AG*, No. 16-cr-20394, ECF No. 68.

⁶¹ Order at 7–8, *Pac. Gas & Elec. Co.*, No. 14-CR-175, ECF No. 916.

⁶² 18 U.S.C. § 1115.

⁶³ 33 U.S.C. §§ 1319(c)(1)(A), 1321(b)(3).

⁶⁴ 16 U.S.C. §§ 703, 707(a).

⁶⁵ 18 U.S.C. § 1505; Guilty Plea Agreement at 2–3, *United States v. BP Exploration & Prod.*, No. 12-cr-292 (E.D. La. Nov. 15, 2012), ECF No. 2-1.

third-party auditor.⁶⁶ One monitor was designated a “Process Safety Monitor” and directed to “review evaluate and provide recommendations for the improvement of defendant’s process safety and risk management procedures.”⁶⁷ The other monitor was designated an “Ethics Monitor” and directed to “review and provide recommendations for improvement of BP plc’s Code of Conduct and its implementation and enforcement for the purpose of preventing future criminal and ethical violations with respect to dealings with regulatory and enforcement authorities.”⁶⁸ The third-party auditor’s role was to “sample or test the defendant’s compliance” with the special terms of probation through “reviewing documentation and taking such other reasonable measure as may be appropriate.”⁶⁹ The monitors were selected by the government from “no more than five” candidates proposed by the defendant and presented to the Assistant Attorney General of the Criminal Division in order of the defendant’s preference.⁷⁰ The third-party auditor was selected similarly.⁷¹ This selection methodology was consistent with the procedures set forth in the Breuer Memorandum.

The monitors were required to perform an initial review and up to three follow-up reviews and produce a report to be shared with the parties and probation office after each review. The monitors were “encouraged to consult with the defendant concerning the monitors’ findings and recommendations on an ongoing basis” and required to “promptly report” any potential violations to the probation office, government, and defendant.⁷² The third-party auditor also conducted annual audits and produced annual reports to the parties and the probation office.⁷³

The plea agreement also directed BP E&P to create a public website. The website was required to contain:

⁶⁶ Guilty Plea Agreement, *supra* note 65 at 6–7, 20–22, 33; Order at 1–3, *BP Exploration & Prod.*, No. 12-cr-292, ECF No. 66-3.

⁶⁷ Guilty Plea Agreement, *supra* note 65, at 20–21; Order *supra* note 65, at 1–2.

⁶⁸ Guilty Plea Agreement, *supra* note 65, at 21; Order, *supra* note 65, at 1–2.

⁶⁹ Guilty Plea Agreement, *supra* note 65, at 33; Order, *supra* note 65 at 1–2.

⁷⁰ Guilty Plea Agreement, *supra* note 65, at 22; Order, *supra* note 65 at 3.

⁷¹ Guilty Plea Agreement, *supra* note 65, at 33; Order, *supra* note 65 at 14.

⁷² Guilty Plea Agreement, *supra* note 65, at 24–25; Order, *supra* note 65 at 5–6.

⁷³ Guilty Plea Agreement, *supra* note 65, at 33; Order, *supra* note 65, at 14.

- a. Lessons learned from the Deepwater Horizon incident;
- b. Annual progress reports on its compliance with the special terms of probation . . . ;
- c. Annual summaries of recordable safety incidents, days away from work, hydrocarbon spills and the volume thereof; and
- d. An annual list of all incidence of non-compliance with BSEE or BOEM regulations or probation⁷⁴

The monitors' reports, however, were not made public.

Academic literature is divided on the wisdom of making monitors' reports public. On one hand, some argue that publicly available monitor reports increase accountability for the monitor and the defendant, allow independent analysis of the utility of monitorships, and build public confidence in monitorships and criminal resolutions against corporations. Others counter that publishing monitor reports may negatively impact the candor and cooperativeness of corporations and corporate employees who may be concerned about the potential exposure of confidential business information, personal embarrassment, or both, and limit the amount and accuracy of information available to monitors, which, in turn, would yield a less productive monitorship.⁷⁵ The disclosures mandated in the BP Exploration plea agreement are one way to partially bridge the divide.

⁷⁴ Guilty Plea Agreement, *supra* note 65, at 32; Order, *supra* note 65, at 13.

⁷⁵ See, e.g., Veronica Root, *The Monitor-“Client” Relationship*, 100 VA. L. REV. 523, 574–77 (2014) (discussing the need to balance the deterrent effect and “[t]he public’s interest in having full access to the monitor’s reports . . . against the possibility that there is a class of companies . . . who will balk at the imposition of a corporate compliance monitor without assurances of confidentiality” and proposing possible ways to achieve such a balance); Brandon L. Garrett, *The Public Interest in Corporate Settlements*, 58 B.C. L. REV. 1483, 1529–30 (2017) (advocating for reports of monitors to be made public “so affected parties have enough information to know whether to intervene if compliance is lacking,” to allow other corporations “[to] benefit from best practices and success stories described in monitor reports, as well as from the difficulties monitors encounter,” and to otherwise serve the public interest); Daniel W. Levy & Doreen Klein, *Privilege and Confidentiality*, in THE GUIDE TO MONITORSHIPS 252–53 (Anthony S. Barkow, et al. eds. 2020)

In her publicly issued “Reasons for Accepting Plea Agreement,” Judge Sarah S. Vance discussed the monitors and third-party auditors as “meaningful conduct remedies” that addressed the concern of victims “that BP could return to business as usual while on probation.”⁷⁶ She noted that, with respect to the defendant’s failure to comply with the corrective actions imposed as conditions of probation that might be uncovered by the third-party auditor, “[u]ltimately, there will be access to this Court to punish probation violations.”⁷⁷

2. Duke Energy Business Services, LLC, Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc.

On February 2, 2014, one of two stormwater pipes under the primary coal ash basins at the Dan River Steam Station, a coal-fired power plant in Eden, North Carolina, owned by Duke Energy Carolinas, LLC, failed and released millions of gallons of coal ash wastewater and coal ash into the Dan River.⁷⁸ The ensuing federal investigation uncovered negligent Clean Water Act crimes not only at the Dan River Steam Station but also at other coal-fired power plants owned by Duke Energy Carolinas and Duke Energy Progress, Inc., across the state of North Carolina.⁷⁹

As part of their plea agreements, Duke Energy Carolinas, Duke Energy Progress, and Duke Energy Business Services, LLC, a subsidiary that assisted in staffing and operating the facilities owned by the other two companies, agreed to a five-year probation period with both national and state-level ECPs and a court-appointed monitor.⁸⁰ The monitor had legal, fact-finding, administrative, and technical tasks and was required to “have staff, or be able to retain

(explaining that the corporation, monitor, and the government each have a “high level of interest . . . in maintaining confidentiality”).

⁷⁶ Reasons for Accepting Plea Agreement at 18, *BP Exploration & Prod.*, No. 12-cr-292, ECF No. 65.

⁷⁷ *Id.* at 20.

⁷⁸ Joint Factual Statement at 2, *United States v. Duke Energy Bus. Servs., LLC, et al.*, No. 15-cr-68 (May 14, 2015 E.D.N.C.), ECF No. 63.

⁷⁹ *Id.* at 2–4.

⁸⁰ Plea Agreement at 3–4, *Duke Energy Bus. Servs., LLC*, No. 15-cr-68, ECF No. 60; Plea Agreement at 4–5, *Duke Energy Bus. Servs., LLC*, No. 15-cr-68, ECF No. 61 [hereinafter *Duke Energy Carolinas Plea Agreement*]; Plea Agreement at 4–5, *Duke Energy Bus. Servs., LLC*, No. 15-cr-68, ECF No. 62.

staff,” with expertise and competence in environmental laws and regulatory programs, evaluating management systems for adequacy to ensure regulatory compliance, and reviewing claims for reimbursement.⁸¹

The monitor’s legal and fact-finding tasks included the following:

- Determining the materiality of civil violations with penalty assessments between \$5,000 and \$15,000 to aid the court in determining the types of conduct that would rise to the level of a probation violation;⁸²
- Determining whether the defendants were using best efforts to fulfill their obligations under the ECPs and advising the court;⁸³
- Reviewing and approving environmental training programs tailored to employee job descriptions, including receipt and review of written training materials and curricula;⁸⁴
- Reviewing defendants’ reports on efforts to excavate and close the coal ash basins at four specific facilities and assessing defendants’ diligence and good faith in meeting the closure and excavation obligations, including the impact of any conflicts that might arise between rapidly changing state and federal laws regulating coal ash;⁸⁵
- Receiving and reviewing reports from defendants’ compliance officers detailing the companies’ efforts to comply with applicable environmental requirements and the ECPs;⁸⁶
- Determining the adequacy of defendants’ existing toll-free hotline for reporting complaints and issues by reviewing reports of possible environmental violations received by defendants through the hotline and evaluating the defendants’ follow-up actions;⁸⁷
- Establishing and administering a claims process by which local governments could submit documentation of impacts from

⁸¹ See, e.g., Duke Energy Carolinas Plea Agreement, *supra* note 80, at 20.

⁸² See, e.g., *id.* at 14–15.

⁸³ See, e.g., *id.* at 19.

⁸⁴ See, e.g., *id.* at 27.

⁸⁵ See, e.g., *id.* at 16–17.

⁸⁶ See, e.g., *id.* at 23.

⁸⁷ See, e.g., *id.* at 26.

bromide discharges on their drinking water systems and make claims for restitution;⁸⁸ and

- Receiving and reviewing information on the availability of funds to the defendants for compliance with the judgment and notifying the parties and court of any concerns.⁸⁹

The monitor's administrative tasks included the following:

- Establishing schedules for conducting environmental audits of Duke Energy Corporation's facilities with coal-ash basins within North Carolina and nationwide;⁹⁰
- Reviewing and approving redactions of confidential business information from publicly posted audits and other reports;⁹¹ and
- Ensuring and facilitating the posting of copies of any environmental compliance audits, annual reports, other reports, or a combination of these documents prepared pursuant to the ECPs on a company web page with public access.⁹²

The monitor's primary technical task was conducting environmental audits of the defendants' facilities and other Duke Energy Corporation-affiliated facilities with coal-ash basins.⁹³

The ECPs and monitorship required a relatively large number of written reports, all of which were required to be posted on the companies' websites with necessary redactions and provided to the parties and the court.⁹⁴ The court selected the monitor from a panel nominated by the defendants and vetted by the government.⁹⁵ The monitor submitted its invoices to the court, which reviewed them and, if approved, issued an order directing defendants to pay the monitor as invoiced.⁹⁶

⁸⁸ See, e.g., *id.* at 30.

⁸⁹ See, e.g., *id.* at 6–8.

⁹⁰ See, e.g., *id.* at 24, 28.

⁹¹ See, e.g., *id.* at 21–22.

⁹² *Id.*

⁹³ See, e.g., *id.* at 24–25, 28–29.

⁹⁴ See, e.g., *id.* at 21–22.

⁹⁵ See, e.g., *id.* at 20–21.

⁹⁶ See, e.g., Order, *Duke Energy Bus. Servs., LLC*, No. 15-cr-68, ECF No. 81.

The defendant's probation ended in May 2020.⁹⁷ The court-appointed monitor's final annual report noted, "What I have observed to date indicates a significant change in Duke's corporate culture surrounding environmental compliance," stemming from "[r]evamping and implementing the company's Environmental, Health, and Safety Management System," "[i]nternal training of employees to understand and identify risk, implement all compliance systems, and take ownership of Duke's compliance efforts," and "[s]enior officers' and the Board of Directors' provision of the manpower and financial resources necessary."⁹⁸ He also noted the company's shift from being "reticent to bring problems to me" at the beginning of the monitorship to "proactively notifying me about issues" and quickly developing action plans to address them.⁹⁹

The monitor attributed the success of the monitorship to "a high emphasis on two important components of Duke's environmental management system: the conduct of rigorous root cause analysis to evaluate issues as they are discovered, and the application of the results of that analysis to corrective and preventative actions," which he further described as an "iterative process."¹⁰⁰ Even with the improvements the defendants made during probation and the monitorship, the monitor included additional suggestions for future improvements in his final report, reflecting that "environmental compliance is a continual quest."¹⁰¹

3. Princess Cruise Lines, LTD.

In August 2013, an engineer on the *Caribbean Princess*, operated by Princess Cruise Lines, LTD., reported to the United Kingdom's Maritime and Coastguard Agency (MCA) that the ship illegally discharged oily water from its bilges through an unauthorized and covertly installed "magic pipe" designed to bypass the ship's pollution prevention equipment.¹⁰² The MCA began an investigation of the whistleblowing engineer's allegations, but the investigation was

⁹⁷ Order, *Duke Energy Bus. Servs., LLC*, No. 15-cr-68, ECF No. 146.

⁹⁸ Court Appointed Monitor's 2020 Annual Report at 5–6, *Duke Energy Bus. Servs., LLC*, No. 15-cr-68, ECF No. 145.

⁹⁹ *Id.* at 6–7.

¹⁰⁰ *Id.* at 6.

¹⁰¹ *Id.* at 6, 18–20.

¹⁰² Joint Factual Statement at 2, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 2–1.

obstructed by a cover-up by the ship's senior engineering officers, including the Chief Engineer and Senior First Engineer.¹⁰³ Because the ship's eventual destination was the United States, the MCA referred the information it had to the U.S. Coast Guard (USCG).¹⁰⁴

The ensuing investigation in the United States uncovered multiple additional illegal discharges of oily waste from the *Caribbean Princess* along with false Oil Record Books intended to conceal the illegal discharges, unlawful discharges of oily bilge water from four other Princess Cruise Line-operated ships, and continuing obstructive conduct.¹⁰⁵ Ultimately, the company pleaded guilty to conspiring to violate the Act to Prevent Pollution from Ships (APPS), falsifying documents, and obstructing an agency proceeding; four substantive counts of violating the APPS; and two substantive counts of obstructing an agency proceeding.¹⁰⁶

The ECP accompanying the plea agreement in *United States v. Princess Cruise Lines, LTD.* defined the roles of the court-appointed monitor and third-party auditor (TPA).¹⁰⁷ It applied not only to the defendant, Princess Cruise Lines, but also to the defendant's parent corporations, Carnival Corporation and Carnival plc, which signed the plea agreement and obligated themselves to the ECP.¹⁰⁸

The TPA's duties included performing annual audits of "[a]ll of the shore-side environmental-related operations subject to [the] ECP," "[a]ll of the Covered vessels that are operated by Defendant," and "[t]wenty percent . . . of the Covered Vessels not operated by Defendant."¹⁰⁹ The TPA was to have "full access to Covered Personnel, company records, Covered Vessels [with limited exceptions for safety and security], and shore-side facilities," and the audits were to cover nearly every aspect of ship engineering operations, including the nature and extent of waste streams and leakages, the performance of

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 3.

¹⁰⁶ Plea Agreement at 5–7, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 2-2.

¹⁰⁷ Princess Cruise Lines ECP, *supra* note 38.

¹⁰⁸ *Id.*; see also Government's Sentencing Memorandum in Support of the Plea Agreement and Motion for a Whistleblower Award at 12, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 26 [hereinafter Government's Princess Cruise Lines Sentencing Memorandum].

¹⁰⁹ Princess Cruise Lines ECP, *supra* note 38.

pollution prevention equipment, the accuracy and adequacy of documentation and record-keeping, the adequacy of policies and procedures for waste management and environmental compliance, the adequacy and abilities of each vessel's crew, the sufficiency of reporting mechanisms, and the company's "continual improvement systems, including procedures for ensuring that CARNIVAL policy and procedures reflect updates to MARPOL and other Marine Environmental Protection Requirements."¹¹⁰ The TPA was directed to develop an annual "report of findings summarizing the audits" and providing "any recommendations to improve . . . [CARNIVAL's environmental management system], including recommendations for follow-up audits where considered necessary."¹¹¹ The Carnival companies were then required to provide a written response to the TPA's annual report and respond to negative audit findings with corrective action, preventative action, or both.¹¹²

The government envisioned the court-appointed monitor as "serv[ing] as the eyes and ears for the Court and the Office of Probation during the period of probation."¹¹³ As in other vessel cases, the court-appointed monitor's responsibilities included reviewing "the relationship between Carnival and the TPA" and evaluating "the adequacy of measures taken to ensure that the TPA acts with independence" by reviewing records, speaking with auditing personnel, and attending shore-side and shipboard audits or otherwise visiting covered vessels and shore-side facilities.¹¹⁴ After reviewing the TPA's annual audits, the court-appointed monitor was to submit his own report on the adequacy of the audits and "any other information of which the CAM becomes aware pertaining to CARNIVAL's capabilities to meet the objectives of this ECP" to Carnival; the government, including the USCG; and the probation office.¹¹⁵ The ECP also provided that the court-appointed monitor could "[p]rovide any additional reports to CARNIVAL and the Interested Parties, as requested by the Court or as appropriate, concerning any of the issues

¹¹⁰ *Id.* at 26–31.

¹¹¹ *Id.* at 34. The TPA's annual reports for the second and third years of probation years can be found on the court's docket at ECF Nos. 153 and 193.

¹¹² *Id.* at 34–35.

¹¹³ Government's Princess Cruise Lines Sentencing Memo, *supra* note 108, at 13.

¹¹⁴ Princess Cruise Lines ECP, *supra* note 38.

¹¹⁵ *Id.*

discussed in the preceding paragraphs,” giving the monitor the independent authority to report on issues in a timely fashion if they arose between the reporting intervals otherwise set out.¹¹⁶ The court-appointed monitor’s annual reports were publicly filed on the case’s docket.¹¹⁷

In the summer of 2019, halfway into its period of probation, the defendant admitted to six probation violations.¹¹⁸ The violations involved interfering with the implementation of the ECP and the TPA’s audits, failing to provide sufficient authority to the corporate officer responsible for implementing the ECP, falsifying employee training records on two ships, attempting to lobby the Coast Guard to try to modify a portion of the ECP without following the protocol for modifications through the court set out in the ECP, and committing additional pollution violations by discharging plastic garbage in water from a ship in the Bahamas and failing to maintain a required garbage log.¹¹⁹ In remarks to the court during the probation violation hearing, the court-appointed monitor questioned the “commitment of

¹¹⁶ *Id.* at 24.

¹¹⁷ *See, e.g.*, First Annual Report of the Court Appointed Monitor (2017–2018), *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 105; Second Annual Report of the Court Appointed Monitor (April 19, 2018–April 18, 2019), *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 150; Third Annual Report of the Court Appointed Monitor (April 19, 2019–April 18, 2020), *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 191. The court ordered the monitor to publicly file the quarterly reports following an unopposed motion by Miami Herald Media Company, Order Granting Motion to Intervene and Request Filing of Quarterly Reports, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 113, and can be found at docket numbers 114, 115, 116, 166, 172, 183, and 215.

¹¹⁸ Proposed Agreement for the Court’s Consideration Resolving Superseding Petition for Summons for Offender Under Supervision Dated April 26, 2019 at 1, 10–11, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 134 [hereinafter *Princess Cruise Lines Proposed Agreement*]; Transcript of June 3, 2019, Status Conference at 99–104, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 145 [hereinafter *Princess Cruise Lines June 3, 2019, Status Conference*].

¹¹⁹ *Princess Cruise Lines Proposed Agreement, supra* note 118, at 10–11.

upper, most senior leadership to this issue in a way that is real.”¹²⁰ He explained:

What we would expect . . . when we give criticism, rather, is that the person receiving it hear it for what it is, an effort to improve; not something to defend, to defeat, to mitigate, to reason-away. But too often in the past two years when the TPA and myself have confronted the senior leadership of this company with serious criticism that’s the treatment we’ve received. And that, more than anything, I think, has brought the Court to this point.¹²¹

The monitor further suggested, based on over 40 ship and shore visits and speaking to a few thousand people in the company, that the company’s employees were “well-trained professional, subject-matter experts, deeply loyal to the company, who want the company to succeed and are deeply frustrated with the failure of the most senior levels of management to get on board with this issue.”¹²²

Following the hearing, the court accepted a modification to the terms of probation and the ECP jointly agreed to by the government and the Carnival companies. The modified requirements included additional audits and court-appointed monitor visits to ships and shore-side facilities; a further restructuring of the company’s compliance functions to ensure a direct line of communication with the CEO and Board of Directors, as well as more adequate funding; an additional financial penalty of \$20 million; additional improvements to the company’s waste management practices for plastic garbage; and a statement by the CEO to all Carnival employees personally accepting management responsibility for the probation violations.¹²³

¹²⁰ Princess Cruise Lines June 3, 2019, Status Conference, *supra* note 118, at 85.

¹²¹ *Id.* at 87.

¹²² *Id.* at 88.

¹²³ Order Accepting Proposed Settlement, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 143; Princess Cruise Lines Proposed Agreement, *supra* note 114, at 1–7.

4. Volkswagen AG

In April 2017, Volkswagen AG was sentenced pursuant to a plea agreement¹²⁴ following a public scandal in which it marketed its diesel-fuel passenger vehicles as environmentally friendly while equipping them with emissions system “defeat devices” that increased the levels of harmful nitrous oxides emitted from the vehicles’ tailpipes under normal driving conditions.¹²⁵ Volkswagen pleaded guilty to a conspiracy with three objects: defrauding the Environmental Protection Agency, committing wire fraud, and violating the Clean Air Act. It also pleaded guilty to one count of obstruction of justice and one count of entry of goods by false statements.¹²⁶

In parallel with the criminal investigation and prosecution, Volkswagen also faced a coordinated civil enforcement action by the federal government and the state of California, among others. In addition to the plea agreement, Volkswagen entered into a series of

¹²⁴ Judgment, *Volkswagen AG*, No. 16-cr-20394, ECF No. 82 [hereinafter Volkswagen Judgment]; Plea Agreement, *Volkswagen AG*, No. 16-cr-20394, ECF No. 68 [hereinafter Volkswagen Plea Agreement].

¹²⁵ See, e.g., Geoff Colvin, *5 Years In, Damages From the VW Emissions Cheating Scandal are Still Rolling In*, FORTUNE (Oct. 6, 2020 10:00 AM), <https://fortune.com/2020/10/06/volkswagen-vw-emissions-scandal-damages/>; Russell Hotten, *Volkswagen: The Scandal Explained*, BBC NEWS (Dec. 10, 2015), <https://www.bbc.com/news/business-34324772>; Clifford Atiyeh, *Everything You Need to Know about the VW Diesel-Emissions Scandal*, CAR & DRIVER (Dec. 4, 2019), <https://www.caranddriver.com/news/a15339250/everything-you-need-to-know-about-the-vw-diesel-emissions-scandal/>; Kalyeena Makortoff, *What You Need to Know about the Volkswagen Scandal*, CNBC (Sep. 22, 2015, 4:54 PM), <https://www.cnbc.com/2015/09/22/what-you-need-to-know-about-the-volkswagen-scandal.html>; Nathan Bomey, *Volkswagen Emission Scandal Widens: 11 Million Cars Affected*, USA TODAY (Sept. 22, 2015, 5:40 PM), <https://www.usatoday.com/story/money/cars/2015/09/22/volkswagen-emissions-scandal/72605874/>; Vanitha Swaminathan & Suyun Mah, *What 100,000 Tweets About the Volkswagen Scandal Tell Us About Angry Customers*, HARVARD BUS. REV. (Sept. 2, 2016), <https://hbr.org/2016/09/what-100000-tweets-about-the-volkswagen-scandal-tell-us-about-angry-customers?autocomplete=true>.

¹²⁶ Volkswagen Judgment, *supra* note 124; Volkswagen Plea Agreement, *supra* note 120, at 2–3.

three negotiated partial consent decrees with the United States and California in the civil matter.¹²⁷

Both the plea agreement and the third partial consent decree imposed a monitor on Volkswagen. The plea agreement named its monitor the “Independent Compliance Monitor,”¹²⁸ while the third partial consent decree titled its monitor as the “Independent Compliance Auditor,”¹²⁹ reflecting the differing scopes of the tasks set out by each document. Each agreement specified that the Independent Compliance Monitor and Independent Compliance Auditor would be the same individual, barring exceptional circumstances.¹³⁰ The monitor was to serve for three years under each agreement, although the plea agreement allowed the monitorship to be extended for one year or terminated early under certain conditions and as approved by the government.¹³¹

The “Monitor’s Mandate” was described in the Plea Agreement as:

to assess, oversee, and monitor the Company’s compliance with the terms of the Agreement, so as to specifically address and reduce the risk of any recurrence of the Company’s misconduct, and to oversee the Company’s obligations under Section V (Injunctive Relief for VW Defendants) of the Third Partial Consent Decree During the Term of the Monitorship, the Monitor will evaluate . . . the Company’s implementation and enforcement of its compliance and ethics program for the purpose of preventing future criminal fraud and environmental violations by the

¹²⁷ See Third Partial Consent Decree, *In re: Volkswagen “Clean Diesel” Marketing, Sales Practices, and Products Liability Litigation*, No. 15-md-02672 (N.D. Cal. Jan. 11, 2017), ECF. No. 2758-1 [hereinafter Volkswagen Third Partial Consent Decree].

¹²⁸ Volkswagen Plea Agreement, *supra* note 124, at 33–35.

¹²⁹ Volkswagen Third Partial Consent Decree, *supra* note 127, at 20–27.

¹³⁰ Volkswagen Plea Agreement, *supra* note 124, at 33; Volkswagen Partial Consent Decree, *supra* note 127, at 22–23. If the civil and criminal proceedings had not proceeded in parallel, the tasks assigned to the Independent Compliance Auditor in the third partial consent decree theoretically could have been included in the monitorship in the plea agreement.

¹³¹ Volkswagen Plea Agreement, *supra* note 124, at 3-9; Volkswagen Third Partial Consent Decree, *supra* note 127, at 20–21.

Company and its affiliates, including, but not limited to, violations related to the conduct giving rise to the Third Superseding Information filed in this matter, and will take such reasonable steps as, in his or her view, may be necessary to fulfill the forgoing mandate (the “Mandate”). This Mandate shall include an assessment of the Board of Management’s and senior management’s commitment to, and effective implementation of, the Company’s corporate compliance and ethics program.¹³²

Specifically, the Monitor was to conduct three “reviews” of Volkswagen’s ethics and compliance program and make recommendations “reasonably designed to improve the effectiveness of the Company’s program for ensuring compliance with anti-fraud and environmental laws.”¹³³ The reports drafted by the monitor in conjunction with the reviews were directed to remain non-public and confidential because the parties anticipated that they would include “proprietary, financial, confidential and competitive business information [and] . . . public disclosure of the reports could discourage cooperation or impede pending or potential government investigations and thus undermine the objectives of the Monitorship.”¹³⁴

Under the Third Partial Consent Decree, the Independent Compliance Auditor was to annually draft an audit plan that it would submit to the Department for approval. The requirements for the audit plan included “a checklist of relevant compliance requirements, procedures for the exchange of any documents and information that the Independent Compliance Auditor needs to perform its duties, and any other terms that the Independent Compliance Auditor may deem necessary to effectuate its duties.”¹³⁵ Each audit was followed by an annual report that would “include, as applicable, findings that identify

¹³² Volkswagen Plea Agreement, *supra* note 124, at 3-1–3-2.

¹³³ *Id.* at 3-6–3-11.

¹³⁴ *Id.* at 3-14. Various parties have challenged the confidentiality in FOIA actions pending at the time of this article. *See, e.g., N.Y. Times Co. v. U.S. Dep’t of Just.*, No. 19 Civ. 1424, 2021 WL 371784 (S.D.N.Y. Feb. 3, 2021); *see also N.Y. Times Co. v. Dep’t of Just.*, No. 19-1424, 2021 WL 371784 (S.D.N.Y. Feb. 3, 2021) (Failla, J.), OFF. OF INFO. POL’Y, U.S. DEP’T OF JUST., <https://www.justice.gov/oip/ny-times-co-v-doj-no-19-1424-2021-wl-371784-sdny-feb-3-2021-failla-j> (updated Feb. 26, 2021).

¹³⁵ Third Partial Consent Decree, *supra* note 127, at 23.

any noncompliance . . . and shall recommend, as applicable, actions . . . to take to achieve compliance.”¹³⁶ The Independent Compliance Auditor reports were to be posted by VW on a public website, with links posted on VW company websites, in both English and German. The terms of the consent decree allowed VW to redact confidential business information and personal information pursuant to law from the publicly posted reports, but it was not allowed to claim emissions test methods or results as confidential business information.¹³⁷

5. Pacific Gas and Electric Company

On September 9, 2010, in San Bruno, California, a natural gas pipeline owned by Pacific Gas and Electric Company (PG&E) ruptured and caused a massive explosion and fire, killing eight people, injuring dozens more, and destroying or damaging nearly 150 homes.¹³⁸ After lengthy investigation, substantial pre-trial litigation, and an eight-week trial, a jury convicted PG&E of obstructing a National Transportation and Safety Board investigation into its practices following the explosion and five counts of violating the Natural Gas Pipeline Safety Act, though none were established as specifically having caused the explosion in the criminal trial.¹³⁹

In its sentencing memorandum, the government advocated for the “establishment of a corporate compliance and ethics monitorship as an indispensable component of PG&E’s probationary sentence” due to

¹³⁶ *Id.* at 21.

¹³⁷ *Id.* at 15.

¹³⁸ United States’ Sentencing Memorandum at 4, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 905 [hereinafter Pacific Gas Sentencing Memorandum].

¹³⁹ *See id.*; Jury Verdict, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 884; Transcript of Proceedings, January 23, 2017, at 7, *Pac. Gas & Elec. Co.*, ECF No. 923 (“So while I do not conclude that the criminal conduct at issue in this case caused the San Bruno explosion, or any other particular accident, I do find that the conduct makes such incidents more likely”). For purposes of administrative proceedings, the NTSB and California Public Utilities Commission did find that PG&E’s failures to follow the law and safety practices and the “systemic failure of PG&E’s corporate culture to emphasize safety over profits” were contributing causes of the San Bruno explosion. Pacific Gas Sentencing Memorandum, *supra* note 138, at 4. PG&E further conceded negligence regarding the explosion in a civil judicial proceeding. *See* Transcript of Proceedings, January 23, 2017, *supra* note 139, at 48.

PG&E’s “history of noncompliance with its regulatory obligations.” The government argued that imposing a corporate monitor would “achieve some measure of confidence that PG&E will comply with Pipeline Safety Act regulations to prevent future tragedies.”¹⁴⁰ The parties, with input from the Probation Office, ultimately negotiated the terms of a monitorship that the court incorporated into the judgment.¹⁴¹

The monitorship order sets a five-year term for the monitor.¹⁴² The monitorship order’s stated goals for the monitor are to “help ensure . . . [PG&E] takes reasonable and appropriate steps to maintain the safety of the gas transmission pipeline system, performs appropriate assessment testing on gas transmission pipelines, and maintains and effective ethics and compliance program and safety related incentive program.”¹⁴³ Given the highly regulated nature of pipelines, the agreement included language specifying that the monitor would not have the authority to “supplant” the state regulator’s “authority over, or decisions related to, gas transmission operations or pipeline safety” or to “directly or indirectly, require PG&E to take action contrary to the directives of its regulators.”¹⁴⁴ To help avoid such conflicts, the order lists 15 specific activities and standards to guide the scope of the monitor’s review of PG&E’s conduct.¹⁴⁵

The monitor was to be selected by mutual agreement between the defendant and the government. If the parties failed to reach an agreement within 90 days, they were to each submit two names to the court for a selection.¹⁴⁶

Once selected, the monitor was to perform an initial review, after consulting with the parties on a work plan for the review, and draft a written report.¹⁴⁷ The initial review and report was to be followed by ongoing consultation between the Monitor and PG&E on the monitor’s

¹⁴⁰ Pacific Gas Sentencing Memorandum, *supra* note 138, at 12.

¹⁴¹ *See id.* at 13; Monitorship Order, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 916; Transcript of Proceedings, January 23, 2017, *supra* note 139, at 36.

¹⁴² Monitorship Order, *supra* note 141, at 5. Five years corresponds to the maximum term of probation for a felony conviction.

¹⁴³ *Id.* at 1.

¹⁴⁴ *Id.* at 2.

¹⁴⁵ *Id.* at 2–4.

¹⁴⁶ *Id.* at 5.

¹⁴⁷ *Id.* at 8.

findings and recommendations and semi-annual reports thereafter.¹⁴⁸ Both the report of the initial review and the semi-annual reports were to be provided only to the defendant, government, and probation officer.¹⁴⁹ The monitorship order, however, directed that, “[a]t the conclusion of the monitorship, the Monitor shall prepare a final written report for public release setting forth the Monitor’s assessment of the monitorship and PG&E’s compliance with the goals of the monitorship.”¹⁵⁰

In 2019, the monitor publicly responded to a verbal inquiry from the court as to whether the monitorship should be modified to “remove the confidential treatment of the Monitor’s interim reports.”¹⁵¹ The monitor recommended against such a change because he had “represented to employees and contractors with whom his team speaks at PG&E that the interim reports and conversations with employees and others are confidential” and feared that changing course would damage the “candid and open dialogue” that existed between the monitor’s team and PG&E employees; “risk losing or undermining the trust and confidence of individuals who otherwise have felt empowered and willing to engage frankly with the Monitor team;” and “chill the exchange of information between PG&E employees and the Monitor team.”¹⁵²

A series of wildfires connected to PG&E’s electricity transmission lines caused a number of modifications to the terms and conditions of PG&E’s probation and the monitorship. Following a series of deadly fires in Northern California’s “wine country” in October 2017, the court and the parties agreed to expand the monitor’s work to include evaluation of “PG&E’s electric-distribution operations, including PG&E’s vegetation-management plan, and equipment maintenance and inspection programs.”¹⁵³

In November 2018, PG&E transmission and distribution lines again triggered a deadly wildfire, the Camp Fire in Butte County, California. PG&E pleaded guilty in state court to 84 counts of

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* at 9.

¹⁵¹ Letter from Monitor Re: Confidentiality of the Monitor’s Reports at 1, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1055.

¹⁵² *Id.* at 1–2.

¹⁵³ Order Modifying Conditions of Probation at 2, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1186.

manslaughter as a result of the Camp Fire and agreed to pay \$13.5 billion to a victim's compensation fund and \$4 million in fines and investigative costs.¹⁵⁴ In April 2019, the court added additional conditions of probation to PG&E's sentence, focusing on wildfire mitigation and record-keeping related to vegetation management around PG&E's power lines.¹⁵⁵ Among them was a requirement that the monitor engage in "regular, unannounced inspections of PG&E's vegetation management efforts and equipment inspection, enhancement, and repair efforts."¹⁵⁶

In April 2020, after noting that "PG&E remains years away from compliance with California law and with its own wildfire mitigation plan," PG&E's receipt of 40 notices of clearance violations from regulatory agencies in 2019, and numerous documented "missed hazards" around power lines discovered by the monitor's inspections, the court modified the conditions of probation again. It identified at least part of PG&E's failure to properly find, address, and document hazards related to its power lines as the result of outsourcing the work without proper in-house supervision.¹⁵⁷ The court also found that PG&E's inspections of its transmission tower hardware were inadequate to protect the public from potential future fires caused by tower part failures.¹⁵⁸ Among other modifications, the court required PG&E, "[i]n consultation with the monitor, [to] design a new inspection system for assessing every item of equipment on all transmission towers."¹⁵⁹

As of April 2021, the court ordered the monitor "to continue walking the PG&E distribution lines on a spot-check unannounced basis to vet PG&E's work done in removing vegetation and hazards from the lines

¹⁵⁴ *Id.* at 3.

¹⁵⁵ *Id.* at 4.

¹⁵⁶ Order Adopting New Conditions of Probation at 2, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1040.

¹⁵⁷ Order Modifying Conditions of Probation, *supra* note 153, at 6–8.

¹⁵⁸ *Id.* at 10–11.

¹⁵⁹ *Id.* at 11. PG&E initially appealed the court's April 29, 2020, order but subsequently filed a joint recommendation with the monitor and the government modifying the court's probation modifications. Notice of Appeal, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1188; Joint Supplemental Brief of PG&E, Federal Monitor, and United States Government Regarding Proposed Conditions of Probation, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1227.

and in prioritizing the work.”¹⁶⁰ The monitor is to plan the inspections in consultation with the Wildfire Safety Division of the California Public Utility Commission.¹⁶¹ The court also directed the monitor to submit its final public report on or before November 19, 2021, and to include in the report “the names and counties, ages and dates of all victims killed by PG&E in the San Bruno explosion and those killed in all wildfires attributed by Cal Fire to PG&E since the explosion, as well as state the number of structures and acres burned.”¹⁶² The court has continued to consider additional probation modifications and probation violations through the spring and summer of 2021.¹⁶³

III. The past as prologue to the future of monitors in environmental crimes cases

Court-appointed monitors will continue to be an important sentencing tool in environmental crimes prosecutions, including those with impacts on climate change and environmental justice. Prosecutors, courts, and defendants, in negotiated plea agreements, can look not only to the law and formal guidance issued by the Department, but to the terms included in past environmental crimes monitorships in designing effective monitorships in the future. Monitorships will continue to vary in their scope and terms as courts and parties respond to the specific circumstances of individual cases

¹⁶⁰ Request to Monitor Re: Line Inspections and for Final Report at 1, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1389. The monitor’s October 16, 2020, response to the court’s information request regarding monitor team field inspections reported that “On a per-mile basis, the Monitor team is finding more missed trees . . . in 2020 that we did in the later part of 2019.” Letter from Monitor to Judge Alsup at 1, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1247–1; *see also* Order Re Monitor Letter, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1247.

¹⁶¹ Request to Monitor Re: Line Inspections and for Final Report at 1, *supra* note 160 at 1.

¹⁶² *Id.* at 1–2.

¹⁶³ *See, e.g.*, Order Re Requests for Leave to file by Amicus and CPUC and Request for Contempt Finding, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1373; Clerk’s Notice Setting Zoom Videoconference, Status re: Supervised Release Violation Set for 6/2/2021, *Pac. Gas & Elec. Co.*, No. 14-cr-175, ECF No. 1393.

and continue to learn from experiences in past cases as well as critiques in academic literature.

In cases related to climate change, where legal obligations at the state, federal, and international level appear poised to undergo rapid change, we could see provisions similar to the requirement in the Duke Energy plea agreement that the monitor be apprised of and evaluate potential conflicts that might arise among changing legal obligations and the terms of a court-imposed environmental compliance plan.¹⁶⁴ Courts in climate change-related cases could also modify the scope and tasks assigned to a court-appointed monitorship, ECP, or both, as the courts in *Princess Cruise Lines* and *Pacific Gas and Electric Co.* did, if the monitorship itself uncovers a need for further actions to ensure compliance with a new or changing regulatory landscape.¹⁶⁵

In cases related to environmental justice, where overburdened communities are impacted by the conduct of a defendant, monitorships may include provisions to allow monitors to receive and analyze feedback from affected communities in evaluating the defendant's compliance efforts or even assist in resolving remediation claims, as in the *Duke Energy Business Services* monitorship. The heightened need for meaningful communication and trust-building with affected communities may also weigh in favor of making more information from the monitorship, ECP, or both public when there are environmental justice concerns. Approaches for increased transparency range from the public website required by the *BP Exploration* plea agreement for publication of annual progress reports by the company and annual summaries of safety and non-compliance incidents to the wholesale publication of the monitor's reports with redactions as needed, contemplated by the *Duke Energy Business Services* plea agreement and the *VW AG* civil third partial consent decree.

With careful consideration of the needs of each case, Department guidance, academic and other public critiques, and the approaches used in past cases, court-appointed monitors can be used to make

¹⁶⁴ See, e.g., Plea Agreement at 16–17, *Duke Energy Carolinas, LLC*, No. 15-cr-68, ECF No. 61.

¹⁶⁵ See, e.g., Order Accepting Proposed Settlement, *Princess Cruise Lines, Ltd.*, No. 16-cr-20897, ECF No. 143; Order Modifying Conditions of Probation, *supra* note 153; Order Adopting New Conditions of Probation, *supra* note 156.

lasting, meaningful impacts in criminal cases impacting climate change and environmental justice and more fully satisfy the goals of criminal prosecution and sentencing.

About the Author

Lana N. Pettus is an Assistant Section Chief in the Environmental Crimes Section of the Department of Justice where she has worked since 2004. She has prosecuted a number of cases resulting in the imposition of corporate monitors as part of probation, including *United States v. Ionia Management, S.A.*, 07-cr-134 (D. Conn. 2008), and *United States v. Duke Energy Business Services, LLC, et al.*, 15-cr-68 (E.D.N.C. 2015).

Refrigerant Smuggling Prosecutions Have Cooled Off. Will Hydrofluorocarbon Allocations Turn Up the Heat?

Thomas T. Ballantine
Assistant Section Chief
Environmental Crimes Section

I. Introduction

In May 2021, the Environmental Protection Agency (EPA) proposed regulations to phase down the production and consumption of hydrofluorocarbons (HFCs).¹ HFCs are the technological adaptation to earlier phase downs of ozone-depleting substances (ODSs), like chlorofluorocarbons and hydrochlorofluorocarbons.² Chemical manufacturers sell HFCs for a wide range of industrial uses, notably as refrigerants, to make foams (like Styrofoam), as propellants in aerosols (like inhalers and pepper spray), and for fire suppression.³ Unfortunately, while HFCs are much better for the ozone layer than other ODSs, they have a substantial negative impact on climate change because they have global warming potentials “hundreds to thousands of times” higher than carbon dioxide.⁴ To lessen their impact, international agreements and U.S. law call for a steady reduction of their manufacture and use.

¹ Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act, 86 Fed. Reg. 27150 (proposed May 19, 2021).

² *Id.* at 27154. HFCs also deplete stratospheric ozone but do much less ozone damage than the compounds they replace. For convenience, this article pulls out HFCs from the broad category of ODSs and discusses them separately.

³ *Id.* at 27151–52; *see also id.* at 27152, Table 1 (“NAICS Classification of Potentially Affected Entities”). Although HFCs have many uses, they are mostly used as refrigerants. For convenience, this article focuses on that use.

⁴ *Id.* at 27155. Global warming potential is a measure of how much a chemical contributes to atmospheric warming, which is indexed to carbon dioxide, the most prevalent greenhouse gas.

This planned reduction follows past regulation of other ODSs.⁵ When those ODSs were phased out—through taxes, tariffs, and bans—criminals sought to benefit by illegally supplying scarce compounds to anyone willing to break the law to avoid higher prices caused by unmet demand. Prosecutors worked to keep up with the criminals and brought several ODS smuggling and tax fraud cases. In recent years, the market settled, and fewer ODS prosecutions occurred.

Soon, there will be an HFC refrigerant phase down period. This article briefly describes the regulatory and technological landscape that will lead to HFC scarcity. Then, it reviews two ODS prosecutions, showing that there is no need to start from scratch in how we think about investigating and prosecuting HFC crimes. It applies recent experience in other smuggling and trafficking contexts to suggest ways of updating criminal enforcement work as the phase down progresses. Finally, it highlights a recent non-governmental organization (NGO) report on HFC crimes in Europe.

II. Where there is scarcity, there is crime

If past experience holds true, scarcity in HFC availability will lead to crime. Scarcity will flow from reduced supply caused by new regulatory controls and continuing demand due to technological challenges associated with HFC alternatives.

A. The legal landscape giving rise to HFC scarcity.

The international effort to curtail stratospheric ozone depletion is a broadly successful, cooperative approach to a deadly air pollution problem,⁶ even in the absence of acute impacts on eyes, noses, throats, and lungs. In the 1980s, scientists, diplomats, and lawmakers overcame the delayed acceptance of scientific consensus on damage to the ozone layer and rallied every member of the United Nations to accept the Montreal Protocol on Substances that Deplete the Ozone

⁵ See Final Rule Accelerating the Phaseout of Ozone-Depleting Substances, 58 Fed. Reg. 65018 (Dec. 10, 1993).

⁶ Philip Shabecoff, *U.S. Report Predicts Rise in Skin Cancer with Loss of Ozone*, N.Y. TIMES (Nov. 5, 1986), <https://www.nytimes.com/1986/11/05/us/us-report-predicts-rise-in-skin-cancer-with-loss-of-ozone.html>.

Layer (Montreal Protocol).⁷ This international framework greatly reduced the production and use of gases that break down stratospheric ozone. In 2019, the United Nations Environment Programme described the Montreal Protocol—which has been ratified by every member of the United Nations—as “one of the most successful” international environmental agreements.⁸ Because of this treaty, the hole in the ozone layer has stopped growing and has recently been characterized as “in recovery.”⁹ That is a good indicator that the ozone layer itself is on the mend.¹⁰

While the Montreal Protocol is concerned with stratospheric ozone depletion, the reality of global warming led to recent amendments that address the threat ODS replacements, specifically HFCs, pose to climate security. HFC-134a, for example, has a global warming potential 1,300 times stronger than carbon dioxide.¹¹ Thus, while HFC emissions are a small fraction of carbon dioxide emissions, they may have a disproportionate effect on Earth’s climate.

In 2016, the parties to the Montreal Protocol passed the Kigali Amendment, which mandates a worldwide phase down of HFCs. The amendment was signed by the United States in October 2016 and entered into force on January 1, 2019. The United States has not ratified the amendment; the Trump administration did not send it to the Senate for consideration. In an executive order issued in January 2021, however, President Biden directed the State

⁷ Montreal Protocol on Substances That Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1541 (entered into force Jan. 1, 1989).

⁸ *Thirty Years on, What Is the Montreal Protocol Doing to Protect the Ozone?*, UNITED NATIONS ENV’T PROGRAMME (Nov. 15, 2019), <https://www.unep.org/news-and-stories/story/thirty-years-what-montreal-protocol-doing-protect-ozone>.

⁹ Chelsea Harvey, *Shrinking Ozone Hole, Climate Change Are Causing Atmospheric “Tug-of-War”*, E&E NEWS (Mar. 26, 2020), <https://www.scientificamerican.com/article/shrinking-ozone-hole-climate-change-are-causing-atmospheric-tug-of-war/>.

¹⁰ MICHAELA I. HEGGLIN, ET AL., TWENTY QUESTIONS AND ANSWERS ABOUT THE OZONE LAYER: 2014 UPDATE 74 (Christine A. Ennis ed., 2014); *Ozone Facts*, NAT’L AERONAUTICS AND SPACE ADMIN., <https://ozonewatch.gsfc.nasa.gov/facts/hole.html> (last visited Oct. 19, 2021).

¹¹ See Xiang, Bin et al, *Global Emissions of Refrigerants HCFC-22 and HFC-134a: Unforeseen Seasonal Contributions*, 111 PROC. OF THE NAT’L ACAD. OF SCI. no. 49, 2014, at 17379.

Department to prepare a Senate transmittal package on the amendment.¹²

Whether the Senate ratifies the Kigali Amendment or not, Congress has already taken action requiring an HFC phase down. The American Innovation and Manufacturing (AIM) Act directs EPA to (a) calculate production and consumption baselines for HFCs and (b) reduce those amounts by fixed percentages over time through an “allowance allocation and trading program” administered by EPA.¹³ There was significant U.S. industry support for this legislation, stemming from the idea of creating a level international playing field for manufacturing that uses HFCs and coming HFC substitutes.¹⁴

EPA has proposed regulations to implement the AIM Act. Those regulations begin with the agency’s experience with prior ODS controls and add provisions specific to the AIM Act. EPA plans to calculate baseline industrial uses and forecast industrial needs and then issue HFC allocations based on those baselines.¹⁵ As discussed below, any knowing violation of the regulations is a crime. There are certified reporting requirements, meaning false statements can be prosecuted. Most of the participants are chemical producers and manufacturers that should be sophisticated players in this regulatory space. Thus, we can expect that international law, the AIM Act, and the AIM Act’s implementing regulations will converge to reduce the legal production and consumption of HFCs in the United States.

B. Technological drivers of demand

On the other side of the balance, demand for refrigerants will likely grow. The International Energy Agency states that the “world is facing a looming ‘cold crunch’” as cooling indoor spaces accounts for more and more energy use in buildings.¹⁶

Almost all cooling systems depend on a refrigerant, which moves heat from a cooled space to a space where heat can be dumped. In

¹² Exec. Order No. 140,008, 86 Fed. Reg. 7619 (Feb. 1, 2021).

¹³ H.R. 133, 116th Cong. § 103 (2021) (The AIM Act was enacted as section 103 in Division S, Innovation for the Environment, of the Consolidated Appropriations Act, 2021 (Pub. L. 116–260)).

¹⁴ Letter from Rachel Jones, Vice President, Energy & Res. Pol’y, Nat’l Ass’n of Mfrs., to United States Senators (Mar. 5, 2020).

¹⁵ Phasedown of Hydrofluorocarbons, *supra* note 1, at 27153–55.

¹⁶ INT’L ENERGY AGENCY, THE FUTURE OF COOLING: OPPORTUNITIES FOR ENERGY-EFFICIENT AIR CONDITIONING 11(2018).

addition to its ability to carry out that core function, a refrigerant must be assessed for toxicity, reactivity, and even explosivity so that leaks and maintenance work are not dangerous. And it should not slip past seals or cause equipment to deteriorate.

Old ODSs and the HFCs that replaced them were largely inert and had good refrigerant qualities, both in terms of moving heat around and secondary characteristics, like reactivity. In fact, a cause of the ozone depletion problem is that first-generation refrigerants do not react very much in the lower atmosphere—they tend to remain intact until they reach the stratosphere. There, the Sun’s energy does break them down, releasing their chlorine atoms in the ozone layer where they catalyze ozone destroying reactions.

New technologies have opened the door for new refrigerants. For instance, propane—obviously flammable—is EPA approved for some applications. It substitutes for the refrigerant R-22 in new, purpose-built refrigerators.¹⁷ Demand for HFCs will depend on how effective such replacements are. When older ODSs were phased out, much of the illegal demand came from maintenance on older equipment that could not use newer refrigerants or was expensive to retrofit.

Regardless, during the transition, the need to keep equipment running and to cool more and more spaces will maintain a high demand for refrigerants, particularly widely used HFCs.

III. Past experience

In past decades, meeting U.S. obligations under the Montreal Protocol led to refrigerant scarcity. EPA investigators and Department of Justice prosecutors uncovered smuggling, fraud, and tax evasion by criminals trying to profit from high prices caused by high demand. And they brought successful cases, resulting in significant prison sentences. Such cases offer a good foundation for new work. This section discusses two of them.

¹⁷ *Protection of Stratospheric Ozone: Revision to References for Refrigeration and Air Conditioning Sector to Incorporate Latest Edition of Certain Industry, Consensus-Based Standards*, 83 Fed. Reg. 38969 (Aug. 8, 2018).

A. *United States v. Alghazouli*

United States v. Alghazouli is a Ninth Circuit decision affirming convictions for crimes involving Freon, a predecessor to HFCs, in the Southern District of California.¹⁸ Alghazouli was sentenced to forty-one months' imprisonment for smuggling Freon, money laundering based on that smuggling, and a Clean Air Act crime for knowingly selling Freon to an "improperly certified person."¹⁹ Although the conduct in this case occurred twenty years ago, it presents a sound approach to the kinds of crimes investigators and prosecutors may expect as new refrigerants become scarce.

The core charges in *Alghazouli* were smuggling charges. Alghazouli and his brothers obtained Freon in Mexico, brought it into the United States without inspection, and sold it to automotive supply dealers at a substantial mark-up. They dealt within a range of prices, but at the high end, they bought at around \$185 per canister and sold at around \$450.²⁰ At the time, EPA regulations—part of the effort to phase out the use of Freon and related compounds—prohibited the import of Freon.

Through an undercover agent, the government established that Alghazouli knew his sales of Mexican Freon were illegal. The agent told Alghazouli that he did not have a required purchase license for Freon, and Alghazouli responded that he need not "worry about it" and that, if asked, he should just "play dumb."²¹

The jury convicted Alghazouli of smuggling, money laundering,²² and knowingly selling Freon to an uncertified purchaser. The court of appeals upheld the convictions and the forty-one-month prison sentence. Two holdings from this case are of particular interest to those looking at possible HFC crimes: (1) the nature of EPA's regulations implementing the Montreal Protocol as "law" for

¹⁸ 517 F.3d 1179, 1182 (9th Cir. 2008).

¹⁹ *Id.* at 1182, 1195.

²⁰ *Id.* at 1182. These sales prices left room for the automotive suppliers to make hefty profits themselves, since legitimately sourced cylinders of Freon sold for as much as \$1200. *Id.*

²¹ *Id.*

²² The Court of Appeals noted a problem with the money laundering jury instruction but upheld the money laundering convictions because the error was not plain and did not affect Alghazouli's substantial rights. *Id.* at 1189–92.

smuggling purposes and (2) the “knowing” mental state element for the illegal sales charge.

1. Smuggling

Chemical manufacturing and sales are international businesses. Where regulation and enforcement on one side of a border is not as strict as the other, smugglers may see the potential to profit from illegal importation. Section 545 of Title 18 is the anti-smuggling criminal statute. It authorizes up to 20 years of imprisonment for anyone who

fraudulently or knowingly imports or brings into the United States, any merchandise contrary to law, or receives, conceals, buys, sells, or in any manner facilitates the transportation, concealment, or sale of such merchandise after importation, knowing the same to have been imported or brought into the United States contrary to law.²³

On appeal, Alghazouli argued that, even if he violated EPA regulations forbidding the import of banned Freon, they were *only* regulations. So, he claimed, breaking them did not rise to the level of being “contrary to law.”²⁴ This kind of argument frequently appears in environmental crime prosecutions: defense counsel press the idea that agency regulations are too complex or too obscure to be punishable beyond an administrative fine. And in cases like *Alghazouli*, where the bad nature of a compound depends on how its chemistry is folded into a regulatory regime, that kind of argument may have some surface appeal.

Nevertheless, the Ninth Circuit, after close analysis, disagreed with Alghazouli.²⁵ On the one hand, the court recognized that some regulations, while legitimately enabled by statute, are not made *punishable* by that statute. For instance, the Commissioner of Internal Revenue can issue bookkeeping requirements to margarine dealers, but unless there is a law authorizing punishment for violating those regulations, a criminal prosecution for marginal records of margarine profit margins must fail.²⁶

²³ 18 U.S.C. § 545.

²⁴ *Alghazouli*, 517 F.3d at 1183.

²⁵ *Id.* at 1184–85.

²⁶ *Id.* (citing *United States v. Eaton*, 144 U.S. 677 (1882)).

But Congress often passes laws that *do* contemplate criminal punishment for violating regulations,²⁷ and the Clean Air Act is one such law:

Criminal enforcement of regulations promulgated under [a subchapter of the ozone protection section of the Clean Air Act] is explicitly granted in another provision of the [Clean Air Act], 42 U.S.C. § 7413(c)(1), which provides “a fine . . . or imprisonment for not to exceed 5 years, or both” for “[a]ny person who knowingly violates . . . any requirement or prohibition of . . . title VI (relating to stratospheric ozone control), *including a requirement of any rule . . . promulgated or approved under such sections or titles, . . .*”²⁸

Having established that ODS import control regulations are laws that can be punished, the court concluded that “a violation of § 82.4 is a violation of a ‘law’ within the meaning of § 545” and upheld the smuggling convictions.²⁹

The *Alghazouli* analysis is useful for future refrigerant smuggling cases and, more broadly, for prosecutors faced with claims of over-criminalization. More than 170,000 people follow the amusing “A Crime a Day” Twitter feed.³⁰ Here is a sample:

21 USC § 331, 333 & 21 CFR § 133.102(b) make it a federal crime to deliver asiago cheese in interstate commerce unless it was cured in a well-ventilated room or has the same properties of asiago cheese that was cured in a well-ventilated room.³¹

To counter the facile perspective illustrated by this tweet, prosecutors need a firm grasp on the statutory basis for regulatory crimes and must be ready to explain how regulations address risk. Regulations put those working with refrigerants (or asiago cheese) on notice about what is or is not permitted, and failure to enforce those regulations would leave a vast swath of dangerous behavior

²⁷ *Id.* (citing *United States v. Grimaud*, 220 U.S. 506 (1911)).

²⁸ *Id.* at 1188 (emphasis added) (omissions in original).

²⁹ *Id.*

³⁰ A Crime a Day (@CrimeADay), TWITTER (Aug. 5, 2021, 10:35 AM), <https://twitter.com/CrimeADay/status/1423292410705027076>.

³¹ *Id.*

unaddressed. As such, it is important not to shy away from regulation-based prosecutions when a case otherwise meets appropriate charging criteria.³²

2. Mens rea

Alghazouli also claimed the government did not prove the mental state element of his crime. He argued that, to convict him of selling illegal Freon to the undercover agent, the government had to show that he knew his conduct was illegal, not just that he knew what he was doing.³³ The Ninth Circuit began its analysis of this argument with the Clean Air Act's criminal provision,³⁴ noting that "any person who knowingly violates any requirement or prohibition of subchapter VI of this chapter (relating to stratospheric ozone control)" is guilty of a crime.³⁵ The court went on to explain that

Section 82.154(m) [of Title 40 of the Code of Federal Regulations] is a regulation relating to stratospheric ozone control within the meaning of § 7413(c)(1). Subject to exceptions not relevant here, it provides that "[n]o person may sell or distribute, or offer for sale or distribution, any substance that consists in whole or in part of a class I or class II substance for use as a refrigerant to any person."³⁶

From there, the court reviewed both Ninth Circuit and sister circuit precedent on the issue of mens rea for regulatory crimes. Applying the Supreme Court's decision in *United States v. International Minerals & Chemical Corp.*,³⁷ as interpreted in Clean Air Act and Clean Water Act criminal prosecutions, the court held that *knowingly* means awareness of what one is doing, not awareness that one is doing something the law forbids, that is, willfulness.³⁸

As with the smuggling discussion above, this analysis is useful for future cases involving the illegal sale or use of HFCs or other controlled refrigerants and for pushing back on spurious arguments

³² See JUSTICE MANUAL 9-27.000 *et seq.* ("Principles of Federal Prosecution").

³³ *Alghazouli*, 517 F. 3d at 1192.

³⁴ 42 U.S.C. § 7413(c)(1).

³⁵ *Alghazouli*, 517 F. 3d at 1192 (quoting 42 U.S.C. § 7413(c)(1)) (cleaned up).

³⁶ *Id.* (quoting 40 C.F.R. § 82.154) (second alteration in original).

³⁷ 402 U.S. 558 (1971).

³⁸ *Alghazouli*, 517 F.3d at 1192.

about regulatory crimes generally. Like the U.S. Code, the Code of Federal Regulations provides sufficient notice of what the law is. Defendants who try claim that a willful mental state is required are really claiming ignorance of the law as an excuse. As the Supreme Court has held, where “dangerous or deleterious devices or products or obnoxious waste materials are involved,”³⁹ a knowing mental state is enough.

3. Recent experience

The same prosecutor who brought the Alghazouli case has, in the last year, teamed up with a prosecutor from the Environmental Crimes Section to ferret out illegal pesticide smuggling at the San Diego border.⁴⁰ The team, working with EPA’s Criminal Investigation Division and Homeland Security Investigations, have brought cases against 50 defendants caught at the border with commercially packaged pesticides that are banned in the United States but available for purchase in Mexico.⁴¹ There are lessons from this work that prosecutors interested in ODS/HFC prosecutions may find useful.

First, an instinct that demand for banned pesticides on the U.S. side of the border would lead to smuggling proved worth exploring. A quasi-legalized marijuana industry in California meant that illegal marijuana grows were rampant. The growers, already operating on the wrong side of the law, were known to use banned pesticides, and the source of those pesticides was logically Mexico.

Nevertheless, at the outset, border inspections were not turning up much in the way of smuggled pesticides. A second lesson from this pesticide experience is the value of changing up inspection schedules, cooperating with agencies, and training. To intercept the smuggled pesticides, agencies emphasized the significance of certain kinds of packaging and worked toward unpredictable inspection schedules. The number of prosecutable cases spiked.

³⁹ *Int’l Mins. & Chem. Corp.*, 402 U.S. at 565.

⁴⁰ *See, e.g.*, Press Release, Dep’t of Just., Apple Valley Resident Sentenced to 60 days in Custody and Ordered to pay \$1,200 for Smuggling Pesticides (Apr. 28, 2021).

⁴¹ *More than 50 People Prosecuted in San Diego for Pesticide Smuggling at Border*, TIMES OF SAN DIEGO (July 9, 2021), <https://timesofsandiego.com/crime/2021/07/09/more-than-50-people-prosecuted-in-san-diego-for-pesticide-smuggling-at-border/>.

Finally, the recent pesticide smuggling experience shows the importance of following through. Where there is high demand for a banned product and an enforcement push, prosecutors and prosecuting offices must be ready to back up the work of investigators. Happily, these smuggling crimes, while numerous, were not overly complex. Steady, organized effort led to many convictions, which should have a substantial deterrent effect. The key to an initiative like this is to recognize that even “small” cases, when part of a broader effort designed to effect general deterrence, are worth the effort (and the occasional raised eyebrow).

B. United States v. Shellef

Tax and tariff evasion prosecutions were another significant tool used to prosecute ODS crimes in the past. Excise taxes and “floor stock taxes” were used to drive out some of the worst ozone-depleting substances.⁴² While those kinds of taxes are not part of the current HFC regulatory regime, HFCs are subject to substantial tariffs at the border. These anti-dumping tariffs, based in trade law, are designed to prevent foreign importers (particularly China) from selling HFCs into the United States at below-market rates.⁴³ This behavior, called “dumping,” is anticompetitive and may drive out domestic manufacturers. To the extent we believe that U.S. manufactures are more likely to follow the requirements of the AIM Act than some subset of foreign HFC producers, import tariffs are an appropriate way to even the playing field and allow U.S. refrigerant manufacturers a fair chance to compete.

Regardless, tariff evasion is a crime. In *United States v. Shellef*, the Environmental Crimes Section successfully prosecuted a defendant for conspiracy and tax evasion involving CFC-113. Like *Alghazouli*, this case suggests fruitful avenues for HFC prosecutions.

Defendants Dov Shellef and William Rubenstein were business partners who dealt in chemicals and other products used in the defense industry.⁴⁴ One chemical they bought and sold was the ODS CFC-113. Like HFCs, CFC-113 was regulated under the Clean Air Act to fulfill U.S. treaty obligations. In addition, CFC-113 sales in the U.S.

⁴² 26 C.F.R. § 52.4682-4.

⁴³ See *Arkema, Inc. v. United States*, 393 F. Supp. 3d 1177 (Ct. Int'l Trade 2019).

⁴⁴ *United States v. Shellef*, 507 F.3d 82, at 88–89 (2d Cir. 2007).

were subject to high excise taxes, (which did not apply to inventory that was merely passing through the United States on its way to another country).⁴⁵

In two separate instances, Shellef and Rubenstein found themselves in possession of thousands of pounds of CFC-113 in the United States. If sold domestically, the refrigerant would have been subject to hundreds of thousands of dollars of tax.⁴⁶ The defendants' plans, marketing, and subterfuge were complex, but with respect to the core charges, "the 'essential nature of the alleged fraud' was that Shellef and Rubenstein misled [their suppliers] about the taxable status of their transactions."⁴⁷ Having obtained "large volume[s] of [untaxed] CFC-113 that had been produced and stockpiled in anticipation of the ban on production," Shellef and Rubenstein planned "to sell it to entities that would have difficulty obtaining it elsewhere thereafter."⁴⁸ Ultimately, to do that, they had to fraudulently work around large tax obligations that would have consumed their profits.

The court convicted Shellef and Rubenstein of fraud and other charges at trial. They appealed that conviction and won a remand because their substantive fraud charges were improperly joined with personal tax-cheating charges leveled at Shellef.⁴⁹ Before retrial, Rubenstein accepted a plea offer and agreed to testify against his co-defendant. A jury convicted Shellef at the end of the second trial, leading to a published decision ruling on his motion to dismiss under Rule 29 of the Federal Rules of Criminal Procedure.⁵⁰ Two interesting issues highlighted in that decision are discussed next.

1. Sufficient evidence of intent to defraud

As demand for HFCs rises and tariffs play a bigger role in how HFCs are priced, the issue of whether an importer intends to defraud the United States will move to the foreground since there are (sometimes) legal ways to avoid or minimize a tariff obligation. Trade law can be complex and, as with many environmental crimes, evidence of bad faith is often critical to obtaining convictions even when the required mental state element is merely "knowing."

⁴⁵ *Id.* at 90.

⁴⁶ *Id.* at 89–94.

⁴⁷ *Id.* at 104.

⁴⁸ *Id.* at 88–89.

⁴⁹ *Id.* at 103–04.

⁵⁰ *United States v. Shellef*, 732 F. Supp. 2d 42, 45 (E.D.N.Y. 2010).

The district court denied Shellef's motion for acquittal (except as to some money laundering counts), finding sufficient evidence to sustain the jury's verdict as to the most important charges.⁵¹ The first count against Shellef was a conspiracy to defraud the United States under 18 U.S.C. § 371. Specifically, a conspiracy to "interfere with or obstruct one of the United States' lawful governmental functions by deceit, craft or trickery, or at least by means that are dishonest, even if the Government is not subject to property or pecuniary loss by the fraud."⁵² Informally known as a *Klein* conspiracy—after a tax case alleging this kind of conspiracy directed against the Internal Revenue Service—the charge allowed the government to address Shellef's (and Rubenstein's) behavior across two charged and two uncharged schemes.

Tax (and tariff) programs often have built-in policy exceptions, which defendants use to hide their bad intent. For Shellef, these were a policy not to tax CFC-113 that was in the United States destined for re-export and a policy not to tax "reclaimed" CFC-113.⁵³ With those loopholes as a backdrop, Shellef defended against the charges by claiming that he thought his counterparties were responsible for seeing that the taxes were paid.

Shellef's "somebody else's problem" argument failed. The court credited evidence that Shellef knew that Rubenstein held the CFC-113 for export but failed to find buyers outside the United States. Nevertheless, Shellef offered to "get rid of" the material domestically. Shellef told Rubenstein to label the product as reclaimed while promoting it to his customers as "virgin." And when Rubenstein said he was putting false export labels on the gas cylinders, Shellef said to "put whatever you want on it."⁵⁴

These details were critical to sustaining Shellef's conviction because he challenged the proof of his mental state. In other cases, when targets benefit from a too-good-to-be-true tariff calculation with HFCs, similar indicators of their intent should be present. Although tax and tariff law may be obscure, the consequences of getting caught are expensive enough that targets will take steps to hide their illegal conduct. Those steps put the lie to their later claims of good faith.

⁵¹ *Id.*

⁵² *Id.* at 53 (cleaned up).

⁵³ *Id.* at 45.

⁵⁴ *Id.* at 54.

With bad faith established, the conspiracy and substantive fraud charges addressing how Shellef cheated his suppliers were sustained.

2. *Shellef* and “tariff engineering”

Shellef also implicates an issue that will likely be part of HFC crime and its detection: tariff engineering. Tariff engineering is the practice of designing imported products to compete against other imports while remaining outside of a specific tariff category.

Legitimate efforts to develop a useful, lower-tariff product that competes with a higher-tariff counterpart are legal, but using a “disguise or artifice” is not.⁵⁵ So, for example, when a company added molasses to sugar syrup to avoid a sugar tariff but removed the molasses after importing it, making it sugar syrup again, the Federal Circuit upheld a custom’s ruling that the tariff applied.⁵⁶

The *Shellef* analog is the tax exclusion for reclaimed CFC-113. Shellef raised a defense that the untaxed product he sold domestically was legal because it met the reclaimed product definition. The court explained:

Although it was virgin, the [CFC-113] had been mixed with some small percentage of alcohol during the manufacturing process. In 1995, Shellef told Rubenstein that the alcohol could easily be removed by a water wash process. Shellef also told Rubenstein that by removing the alcohol, the material would be considered “reclaimed” and, therefore, would be exempt from the excise tax. Rubenstein did not believe, based on his business experience, that such a process rendered the virgin CFC reclaimed, but there is no evidence that he told Shellef about this belief. There was considerable evidence that the industry considered material “reclaimed” and tax-exempt only if various impurities had been removed from already-used CFC-113, which [this batch of] material was not.⁵⁷

⁵⁵ See *Heartland By-Prods., Inc. v. United States*, 264 F.3d 1126, 1138 (Fed. Cir. 2001) (Friedman, J., concurring).

⁵⁶ *Id.*

⁵⁷ *Shellef*, 732 F. Supp. 2d at 50 (citations omitted).

The takeaway is that you should watch for tariff engineering and look for indicators that there was a willful effort to undermine the U.S. customs system through disguise and artifice.

IV. HFC crimes detected in Europe

What EPA's Criminal Investigation Division or the agency's other enforcement branches have planned for ferreting out cheaters is beyond the scope of this article. It is fair to assume they are preparing for the phase down and looking at how to detect and punish fraud. There is, however, some public-facing information about ongoing HFC crime in Europe.

An NGO called the Environmental Investigation Agency (EIA) has undertaken undercover work in Europe and found significant illegal trade.⁵⁸ Europe is ahead of the United States in terms of phasing down HFCs, having passed "F-Gas Regulations" in 2015.⁵⁹ As such, the European experience may be a leading indicator of what investigators and prosecutors in the United States should expect.

EIA reports that, in 2018, a 37% cut in legal HFC supply led to "skyrocket[ing]" HFC prices.⁶⁰ As with past ODS restrictions in the United States, scarcity drove demand, which drove higher prices. At those prices, EIA was able to find willing HFC sellers who showed signs of illegal trafficking, for example, sales in disposable cylinders, pricing at around half the market rate, and irregular shipping offers.⁶¹

When EIA staff, posing as HFC middlemen, inquired about purchasing HFCs without required allocations under the European Union's F-Gas Regulations, they were met with multiple offers and flagrant talk about hiding transactions from authorities.⁶² These interactions included dealers who admitted there was a black market, explained ways to avoid detection, and revealed knowledge of bribery at certain borders. The smugglers' gossip filled in a picture of bulk HFC coming from China to places like Ukraine, Romania, and Turkey.

⁵⁸ ENV'T INVESTIGATION AGENCY, *Europe's Most Chilling Crime: The Illegal Trade in HFC Refrigerant Gases 6* (2021). EIA states that it "shared its findings with the relevant enforcement agencies" before publishing its report. *Id.*

⁵⁹ *Id.* at 4.

⁶⁰ *Id.*

⁶¹ *Id.* at 6.

⁶² *Id.* at 6–13.

From there, dealers would offer illicit distribution to most countries in the European Union.⁶³

This report is available online and makes for interesting reading. It does not describe any prosecutions, but it does address seizures. At least EIA's efforts should trigger investigative brainstorming as U.S. HFC regulations take effect.

V. Conclusion

As HFCs become scarce, the United States should look carefully for the kinds of crimes that occurred during past ODS phase outs and that are already occurring in Europe. Experience should make investigation, prosecution, and litigation easier, especially when there is good cooperation. The Environmental Crimes Section has prosecutors who can assist or partner in cases as they arise and would be pleased to facilitate work among the offices on the lookout for illegal trade in HFCs.

About the Author

Thomas T. Ballantine has supervised environmental crimes cases since 2017. Before that, he prosecuted and tried cases ranging from dumping electroplating baths into the Las Vegas sewers to elephant ivory trafficking. He prosecuted false statements made by engineers to the Nuclear Regulatory Commission in relation to extreme reactor coolant vessel corrosion at the Davis-Besse Nuclear Power Station and a \$50 million renewable fuel scam in Indiana. Mr. Ballantine joined the Environmental Crimes Section in October 2000 as an Attorney General's Honor Graduate after clerking for the Alaska Supreme Court.

⁶³ *Id.*

NO_xious Tunes: Criminal Enforcement Against Aftermarket Defeat Devices

Kris S. Dighe
Senior Counsel
Environmental Crimes Section

Stephen J. Foster
Trial Attorney
Environmental Crimes Section

Linda S. Kato
Senior Regional Criminal Enforcement Counsel
Region 8
Environmental Protection Agency

I. Introduction

The history of congressional efforts to control harmful emissions from vehicles is longstanding. As early as 1960, Congress recognized that emissions from vehicle exhaust presented a growing threat to public health.¹ In 1965, the Motor Vehicle Air Pollution Control Act required vehicle manufacturers to design vehicles to meet tailpipe emission standards, leading to the installation of the first vehicular emission controls.² Enacted in 1970 and amended in 1990, the Clean Air Act (CAA)³ established and expanded the Environmental Protection Agency's (EPA) authority to regulate emissions from mobile sources, which is primarily accomplished through emission controls on vehicles and producing cleaner fuels. These efforts have led to new passenger vehicles being 98–99% cleaner for most emissions as

¹ Act of June 8, 1960, Pub. L. No. 86-493, 74 Stat. 162. This legislation was enacted “[t]o authorize and direct the Surgeon General of the Public Health Service to make a study and report to Congress, from the standpoint of public health, of the discharge of substances into the atmosphere from the exhausts of motor vehicles.” *Id.*

² Act of Oct. 19, 1965, Pub. L. No. 89-271, 79 Stat. 992.

³ 42 U.S.C. §§ 7401–7671q.

compared with vehicles from the 1960s, resulting in dramatically improved air quality in many urban areas.⁴

To ensure that these emission controls remain in operation throughout the “useful life” of each vehicle, the CAA makes it illegal to tamper with these control devices.⁵ Nevertheless, a growing industry has developed for tampering with, and disabling, these emission controls, resulting in significant adverse impacts to air quality. EPA estimates that emission controls have been removed from more than 550,000 diesel pickup trucks in the last decade, which is estimated to have an air quality impact equivalent of adding more than 9 million additional diesel pickup trucks on the road.⁶ To address this widespread problem, EPA made “Stopping Aftermarket Defeat Devices for Vehicles and Engines” a National Compliance Initiative for fiscal years 2020–2023.⁷ Civil and criminal enforcement resources at EPA and the Department of Justice are being directed to deter and reverse the spread of this practice. This article provides an overview of vehicle emission control systems; methods of tampering; public health and environmental justice impacts from tampering; and a discussion of 42 U.S.C. § 7413(c)(2)(C), the criminal provision of the CAA that addresses these violations.

II. Regulating vehicle emissions

The purpose of the CAA is, among other things, “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.”⁸ When enacting the CAA, Congress found that “the

⁴ *History of Reducing Air Pollution from Transportation in the United States*, ENV’T PROT. AGENCY, <https://www.epa.gov/transportation-air-pollution-and-climate-change/accomplishments-and-success-air-pollution-transportation> (updated Apr. 7, 2021).

⁵ 42 U.S.C. § 7522(a)(3).

⁶ ENV’T PROT. AGENCY, TAMPERED DIESEL PICKUP TRUCKS: A REVIEW OF AGGREGATED EVIDENCE FROM EPA CIVIL ENFORCEMENT INVESTIGATIONS 1 (2020).

⁷ Memorandum from Susan Parker Bodine, Assistant Adm’r for Enf’t and Compliance Assurance, Env’t Prot. Agency, to Regional Administrators (June 7, 2019) (“SUBJECT: FY2020–FY2023 National Compliance Initiatives”).

⁸ 42 U.S.C. § 7401(b)(1).

increasing use of motor vehicles . . . has resulted in mounting dangers to the public health and welfare.”⁹

The CAA strictly regulates the emission of harmful pollutants from motor vehicles and other sources of air emissions. The Act and its regulations require manufacturers of motor vehicles—generally referred to as original equipment manufacturers (OEMs)—to design their vehicles and engines to conform to established emission standards for particulate matter (PM), oxides of nitrogen (NO_x), non-methane hydrocarbons (NMHC), carbon monoxide (CO), and other pollutants.¹⁰

Under the regulatory scheme, to sell or offer to sell motor vehicles and motor vehicle engines, manufacturers must apply to EPA for, and obtain, a “certificate of conformity” with EPA’s emission standards.¹¹ The certificate of conformity application must describe, among other things, the emission-related “elements of design” of the motor vehicle or motor vehicle engine.¹² The CAA prohibits anyone from selling or offering to sell new motor vehicles or new motor vehicle engines without a certificate of conformity.¹³

A. Elements of design in diesel motor vehicles and diesel engines

An “element of design” is “any control system (*i.e.*, computer software, electronic control system, emission control system, computer logic), and/or control system calibrations, and/or the results of systems interactions, and/or hardware items on a motor vehicle or motor vehicle engine.”¹⁴ The CAA and its regulations do not specify any particular emission control equipment. Rather, it is up to the OEMs to design and build vehicles that comply with emission standards. Thus, manufacturers install a variety of hardware and software elements of design in motor vehicles to control pollutant emissions and comply with the Act to obtain certificates of conformity.

To understand how typical elements of design work, a basic grasp of the operation of an internal combustion engine is helpful. The fuel

⁹ 42 U.S.C. § 7401(a)(2).

¹⁰ 42 U.S.C. § 7525(a)(2); 40 C.F.R. §§ 86.007-30(a)(1)(i), 86.1848-01(a)(1).

¹¹ 42 U.S.C. §§ 7521, 7525.

¹² See 40 C.F.R. § 86.094-21(b)(1); see also 40 C.F.R. § 86.1844-01(d)–(e).

¹³ 42 U.S.C. § 7522(a)(1).

¹⁴ 40 C.F.R. § 86.1803-01.

(generally diesel or gasoline) is mixed with oxygen from the air using a particular air/fuel mixture ratio for the engine design. The air/fuel mixture is ignited in a combustion chamber called a “cylinder,”¹⁵ which produces heat, increasing pressure within the cylinder, driving a piston, and creating exhaust gas that contains various pollutants.¹⁶ The exhaust gas is collected from the engine’s cylinders in an exhaust manifold and directed to an exhaust pipe, where the exhaust gas is treated to remove pollutants before being released into the environment through a tailpipe.

1. Hardware elements of design for diesel engines

One common emission-related element of design is known as an exhaust gas recirculation system (EGR). EGRs recirculate a portion of the exhaust gas back into the engine’s cylinders. This cooled and inert exhaust gas absorbs heat released during combustion, which reduces the maximum temperature reached in the cylinder during combustion. That lower temperature and lower oxygen level in the cylinder reduces the formation of NO_x emissions.¹⁷

There are other emission-related elements of design that are collectively referred to as “aftertreatment,” which include pollution control devices “mounted downstream of the exhaust valve . . . whose design function is to reduce emissions in the engine exhaust before it is exhausted to the environment.”¹⁸ Aftertreatment for diesel engines often includes diesel particulate filters (DPFs), diesel oxidation catalysts (DOCs), and selective catalytic reduction systems (SCR).

DPFs reduce the level of PM pollution contained in engine exhaust gas. They physically trap particulates in a porous filter, removing the particulates from the exhaust stream.¹⁹ After it is trapped, the PM is

¹⁵ Ignition in a diesel engine is accomplished by high pressure in the cylinder, unlike gasoline engines which use spark plugs to ignite the air/fuel mixture. *Internal Combustion Engine Basics*, DEP’T OF ENERGY, OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY (Nov. 22, 2013), <https://www.energy.gov/eere/vehicles/articles/internal-combustion-engine-basics>.

¹⁶ *Id.*

¹⁷ Ming Zheng et al., *Diesel Engine Exhaust Gas Recirculation—A Review on Advanced and Novel Concepts*, 45 ENERGY CONVERSION & MGMT. 883 (2004).

¹⁸ 40 C.F.R. § 1068.30.

¹⁹ ENV’T PROT. AGENCY, TECHNICAL BULLETIN: DIESEL PARTICULATE FILTER GENERAL INFORMATION (2010).

reduced to ash when the DPF undergoes “regeneration,” which occurs when temperatures within the filter rise high enough to incinerate the particulates.

DOCs convert NMHC and CO into water and carbon dioxide through an oxidation reaction. A DOC typically consists of a honeycomb structure coated with a precious metal and contained in a stainless-steel housing.²⁰ As the exhaust gas flows through the honeycomb structure, a catalytic reaction breaks down the NMHC and CO into water and carbon dioxide and also reduces PM.

An SCR is a type of catalytic converter that uses diesel exhaust fluid (DEF), a urea-based fluid injected into the exhaust gases. The DEF is injected into the hot exhaust gas before the catalyst, where the DEF vaporizes and decomposes to ammonia and carbon dioxide.²¹ The resulting ammonia and the SCR’s catalyst together react with NO_x to convert the NO_x into nitrogen and water.

2. Software elements of design

Motor vehicles are equipped with electronic control units (ECUs), computers that monitor and control vehicle operations, including the emission-related elements of design described above. Emission-related elements of design also include software located in the ECU. Software parameters in the ECU, also known as “calibrations,” control, among other things, engine combustion and aftertreatment performance.²² Certified calibrations are part of a motor vehicle’s overall emission control strategy that enable the vehicle to comply with emission standards. Certified calibrations that must be identified in the certificate of conformity application to, and approved by, EPA include “fuel pump flow rate, fuel pressure[,] . . . EGR exhaust gas flow rate . . . [, and] basic engine timing.”²³

The CAA also requires manufacturers to install on-board diagnostics (OBD) systems on vehicles, which monitor emission-related elements

²⁰ ENV’T PROT. AGENCY, TECHNICAL BULLETIN: DIESEL OXIDATION CATALYST GENERAL INFORMATION (2010).

²¹ MD. DEPT OF THE ENV’T, FACTS ABOUT . . . SELECTIVE CATALYTIC REDUCTION (SCR) (n.d.).

²² 40 C.F.R. § 86.1803-01.

²³ 40 C.F.R. § 86.1844-01(e)(2); *see* 40 C.F.R. § 86.094-21(b)(1) (requiring applications to describe emission control systems); *see also* 40 C.F.R. pt. 85 app. VIII (listing “vehicle and engine parameters and specifications”); 40 C.F.R. pt. 86 app. VI (listing “vehicle and engine components”).

of design for any malfunction or deterioration that may cause the vehicle to exceed certain emission thresholds and then alert the driver to repair the malfunction or deterioration.²⁴ The OBD system is an emission-related element of design located in the ECU and is connected to sensors that provide information regarding the operation of the EGR, DPF, DOC, and SCR. Thus, the OBD monitors these emission controls, each of which is an element of design.²⁵

When an OBD system detects a malfunction or deterioration of an emission-related element of design, such as the removal of a DPF, the OBD system records a diagnostic trouble code that identifies the malfunction or deterioration.²⁶ Also, a malfunction indicator light on the dashboard may illuminate. Depending on the malfunction or deterioration (such as one triggered by low levels of DEF or the removal of a DPF), the OBD system may severely downgrade vehicle performance. This is sometimes called “limp mode,” which limits the truck’s horsepower (potentially resulting in a lower maximum speed), and it is intended to provide an incentive for the truck’s operator to have the truck repaired.

III. Deleting emission control equipment

One can use various methods to defeat emission control equipment. The process of using one or more of these methods is often referred to as a “delete.” One method is removing the portion of the exhaust system with the aftertreatment emission control devices and replacing it with a section of exhaust tubing or an aftermarket “straight pipe.” With this method, the emission components are no longer installed to limit pollutant gases and PM from being emitted to the atmosphere.

Another method used is removing components, such as the DOC and DPF, hollowing those components by removing their internal contents, and reconnecting the hollowed-out components to the exhaust pipe.

²⁴ 42 U.S.C. § 7521(m); 40 C.F.R. §§ 86.007-17, 86.010-18, 86.1806-05.

²⁵ See 40 C.F.R. §§ 86.010-18(a) (requiring OBD system for heavy-duty vehicles “capable of *monitoring* all emission-related engine systems or components during the life of the engine”) (emphasis added), 86.1806-5(a)(1) (requiring OBD system for light-duty vehicles, light-duty trucks, and heavy-duty vehicles “capable of *monitoring* all emission-related powertrain systems or components during the applicable useful life of the vehicle”) (emphasis added).

²⁶ 40 C.F.R. §§ 86.1806-05(e), 86.010-18(a).

This gives the outward appearance that they are intact but eliminates their function.

Yet another method used is disabling the EGR. This often involves installing block plates on valves that lead into the cylinder, preventing exhaust gas from recirculating into the cylinder. Preventing the EGR from functioning can increase engine power but at the expense of increasing NO_x emissions.

If any of the emission hardware components (EGR, DPF, DOC, or SCR) are removed or disabled as described above, a properly functioning OBD will detect a malfunction. Thus, the OBD must be manipulated to prevent a malfunction indicator light from turning on, a diagnostic trouble code from being recorded in the ECM,²⁷ and/or the vehicle from going into “limp mode” and being inoperable, practically speaking. The OBD system is manipulated with software known as “delete tunes,” and this process is commonly referred to as “tuning.”²⁸ When a vehicle is tuned with delete tunes and its emission control devices removed, it may have increased horsepower, torque, and fuel efficiency—but it will also have significantly increased pollutant emissions.

IV. Increase in emissions of deleted vehicles

Unsurprisingly, an effect of removing pollution control devices and installing delete tunes is increased emissions. As part of a civil investigation into the aftermarket defeat device industry, EPA contracted with the Eastern Research Group, Inc. to conduct a study of the effects of fully deleting a diesel pickup truck on the emission of pollutants. The study involved disabling the EGR and removing the DPF, SCR, and DOC. The vehicle’s OBD was tuned—tampering with

²⁷ Diagnostic trouble codes are saved in the ECM. *Diagnostic Trouble Codes (DTCs)*, N.Y. VEHICLE INSPECTION PROGRAM, <https://www.nyvip.org/PublicSite/OBDII/diagnostic-trouble-codes.html> (last visited Oct. 20, 2021).

²⁸ The term “tune” also can refer to legitimate software or uses of software to interact with the electronics of a vehicle, without impairing emission controls or the OBD. These are “nondelete tunes.” For example, if the tire size of a vehicle is changed, a nondelete tune can adjust the speedometer reading to account for the new tire size and help provide an accurate reading.

its ability to monitor the functioning or presence of emission controls—using three different tuners.

Emissions from the truck were tested at the tailpipe before the vehicle was deleted, and the four pollutants measured—NO_x, NMHC, CO, PM—were within regulatory limits and, hence, compliant. Those results were used as the baseline. After deletion, the emissions were again tested at the tailpipe, and the increases over the baseline were as follows:²⁹

Pollutant	Increase Over Baseline
NO _x	+4,264% to +34,667%
NMHC	+90,380% to +114,520%
CO	+11,687% to +19,096%
PM	+3,718% to +12,271%

Based on these increases in emissions and other information available to it, EPA calculated that:

the emissions controls have been removed from more than 550,000 diesel pickup trucks in the last decade. As a result of this tampering, more than 570,000 tons of excess oxides of nitrogen (NO_x) and 5,000 tons of particulate matter (PM) will be emitted by these tampered trucks over the lifetime of the vehicles. These tampered trucks constitute approximately 15 percent of the national population of diesel trucks that were originally certified with emissions controls. But, due to their severe excess NO_x emissions, these trucks have an air quality impact equivalent to adding more than 9 million additional (compliant, non-tampered) diesel pickup trucks to our roads.³⁰

²⁹ E. RSCH. GRP., INC., INVESTIGATION SUMMARY REPORT: H&S PERFORMANCE, SCT PERFORMANCE, AND SPARTAN DIESEL TECHNOLOGIES (July 2, 2014) (prepared for U.S. Environmental Protection Agency); *see also* E. RSCH. GRP., INC., DRAFT INVESTIGATION SUMMARY REPORT: H&S PERFORMANCE (Sept. 26, 2013) (prepared for U.S. Environmental Protection Agency).

³⁰ ENV'T PROT. AGENCY, TAMPERED DIESEL PICKUP TRUCKS: A REVIEW OF AGGREGATED EVIDENCE FROM EPA CIVIL ENFORCEMENT INVESTIGATIONS 1 (2020).

V. Diesel engine exhaust and its impact

Most aftermarket defeat devices are used on diesel trucks. The following section addresses the composition of diesel engine exhaust, its associated health effects, and environmental justice concerns related to increased emissions.

A. Diesel exhaust composition

Exhaust from diesel engines includes hundreds of organic and inorganic compounds.³¹ EPA has assembled a “master list” of approximately 1,000 compounds emitted by mobile sources and identified nearly 600 that are found in the exhausts of on-road diesel vehicles.³² These diesel exhaust compounds are emitted from vehicles as either particles or gases.³³

The exhaust particles, known as diesel PM, consist of particles of elemental carbon as well as adsorbed organic compounds.³⁴ PM vary in size and are categorized by their diameter: fine PM (PM_{2.5}), coarse PM (PM_{10-2.5}), and ultrafine.³⁵ The PM in diesel emissions is predominately fine and ultrafine.³⁶ Particulate matter may be emitted directly into the air from a source such as a diesel engine (primary PM), or it may be generated when certain gases react in the air (secondary PM).³⁷ Mobile sources, which include heavy-duty diesel vehicles, represent “a major source of primary PM at urban scales.”³⁸ Additionally, secondary PM_{2.5} is a “substantial fraction” of the total

³¹ ENV’T PROT. AGENCY, HEALTH ASSESSMENT DOCUMENT FOR DIESEL ENGINE EXHAUST 2-84 (2002) [hereinafter EPA HEALTH ASSESSMENT DOCUMENT].

³² ENV’T PROT. AGENCY, THE MASTER LIST OF COMPOUNDS EMITTED BY MOBILE SOURCES—2006 (2006); *see also* U.S. ENV’T PROT. AGENCY, EXPANDING AND UPDATING THE MASTER LIST OF COMPOUNDS EMITTED BY MOBILE SOURCES—PHASE III: FINAL REPORT (2006).

³³ EPA HEALTH ASSESSMENT DOCUMENT, *supra* note 31, at 1-1.

³⁴ ENV’T PROT. AGENCY, INTEGRATED RISK INFORMATION SYSTEM (IRIS) CHEMICAL ASSESSMENT SUMMARY: DIESEL ENGINE EXHAUST; CASRN N.A. 2 (n.d.) [hereinafter DIESEL EXHAUST CHEMICAL ASSESSMENT].

³⁵ U.S. ENV’T PROT. AGENCY, INTEGRATED SCIENCE ASSESSMENT FOR PARTICULATE MATTER, at ES-1 (2019) [hereinafter EPA INTEGRATED SCIENCE ASSESSMENT].

³⁶ *Id.* at ES-5; EPA HEALTH ASSESSMENT DOCUMENT, *supra* note 31, at 1-1.

³⁷ EPA INTEGRATED SCIENCE ASSESSMENT, *supra* note 35, at 1-5.

³⁸ *Id.* at 2-12.

PM_{2.5}.³⁹ Importantly, as described below, diesel engine exhaust includes precursor gases that can form into secondary PM.⁴⁰

The gas components in diesel emissions consist of organic and inorganic compounds, including carbon dioxide, CO, NO_x, sulfur dioxide, aldehydes (such as formaldehyde and acetaldehyde), benzene, and various other hydrocarbons.⁴¹ The gas compounds in diesel emissions, once emitted, can transform into secondary PM.⁴² For example, sulfur dioxide and NO_x are involved in the formation of secondary PM_{2.5}.⁴³

B. Associated health impacts

Exposure to diesel engine exhaust is associated with certain human health hazards.⁴⁴ These health impacts have been examined both by considering diesel exhaust as the substance of exposure and by examining the impact of diesel exhaust's various components.

1. Diesel engine exhaust

In conducting its health assessment for diesel engine exhaust, EPA concluded, in 2002, that the exhaust is “likely to be carcinogenic to humans by inhalation,” including from environmental exposures.⁴⁵ Additionally, EPA identifies diesel exhaust as a likely human carcinogen in its Integrated Risk Information System (IRIS) database.⁴⁶ In 2012, the World Health Organization's International

³⁹ *Id.*

⁴⁰ EPA HEALTH ASSESSMENT DOCUMENT, *supra* note 31, at 1-2.

⁴¹ *Id.* at 1-1, 2-84, 2-85, 2-87 (Table 2-21).

⁴² *Id.* at 1-2.

⁴³ EPA INTEGRATED SCIENCE ASSESSMENT, *supra* note 35, at 2-13.

⁴⁴ EPA HEALTH ASSESSMENT DOCUMENT, *supra* note 31, at 1-3.

⁴⁵ *Id.* at 1-4.

⁴⁶ *Diesel Engine Exhaust*, ENV'T PROT. AGENCY, https://iris.epa.gov/ChemicalLanding/&substance_nmbr=642 (last visited Oct. 20, 2021). EPA's IRIS Program “identif[ies] and characterize[es] the health hazards of chemicals found in the environment.” *Basic Information about the Integrated Risk Information System*, ENV'T PROT. AGENCY, <https://www.epa.gov/iris/basic-information-about-integrated-risk-information-system> (updated SEPT. 28, 2021). IRIS chemical assessments are listed at https://iris.epa.gov/AtoZ/?list_type=alpha.

Agency for Research on Cancer classified diesel engine exhaust as carcinogenic to humans and a cause of lung cancer.⁴⁷

2. Particulate matter

Significant evidence has been developed demonstrating the health impacts of ambient PM, of which mobile sources, including gas and diesel vehicles, are a major source in urban areas.⁴⁸ Diesel PM in particular typically constitutes approximately 6–10% of ambient PM_{2.5} and has been found at rates as high as 36%.⁴⁹ In December 2019, EPA released its latest Integrated Science Assessment for Particulate Matter, which examined the most recent data on the health effects associated with PM.⁵⁰ Notable findings included the following:

- Respiratory effects: There is likely to be a causal relationship between both short-term and long-term exposures to PM_{2.5} and respiratory effects.⁵¹ Short-term exposure was associated with exacerbating asthma and chronic obstructive pulmonary disease (COPD).⁵² Long-term exposure was associated with changes in lung function or lung function growth rate in children, accelerated lung function decline in adults, development of asthma in children, and development of COPD in adults.⁵³
- Cardiovascular effects: There is a causal relationship between both short-term and long-term exposures to PM_{2.5} and cardiovascular effects.⁵⁴ Short-term exposure was associated

⁴⁷ Press Release, Int'l Agency for Rsch. on Cancer, IARC: Diesel Engine Exhaust Carcinogenic (June 12, 2012).

⁴⁸ See EPA INTEGRATED SCIENCE ASSESSMENT, *supra* note 35, at 2-12 (discussing gas and diesel trucks as major source of PM in urban areas); ENV'T PROT. AGENCY, CONTROL OF HAZARDOUS AIR POLLUTANTS FROM MOBILE SOURCES: REGULATORY IMPACT ANALYSIS 1-26 (2007) (discussing “extensive” data on health effects of PM, of which diesel exhaust is an important part).

⁴⁹ DIESEL EXHAUST CHEMICAL ASSESSMENT, *supra* note 34, at 9.

⁵⁰ See EPA INTEGRATED SCIENCE ASSESSMENT, *supra* note 35, at ES-1 (“This Integrated Science Assessment (ISA) is a comprehensive evaluation and synthesis of policy-relevant science aimed at characterizing exposures to ambient PM, and health and welfare effects associated with these exposures.”).

⁵¹ *Id.* at ES-9 (Table ES-1).

⁵² *Id.* at ES-12.

⁵³ *Id.* at 5-155–56.

⁵⁴ *Id.* at ES-9 (Table ES-1).

with, among other things, ischemic heart disease outcomes and heart failure outcomes.⁵⁵ Long-term exposure was associated with cardiovascular mortality.⁵⁶

- Nervous system effects: There is likely to be a causal relationship between long-term exposure to PM_{2.5} and nervous system effects.⁵⁷ For example, animal toxicology studies show association with neuroinflammation and oxidative stress, neurodegeneration, cognitive effects, and neurodevelopment effects.⁵⁸ Epidemiologic studies found associations with brain morphology, cognitive decrements, and dementia.⁵⁹
- Cancer: There is likely to be a causal relationship between long-term PM_{2.5} exposure and cancer.⁶⁰ Specifically, studies show association with lung cancer incidence and mortality.⁶¹
- Mortality: There is a causal relationship between both short-term and long-term exposures to PM_{2.5} and mortality.⁶² Short-term exposure was associated with cardiovascular-related and respiratory-related mortality; long-term exposure was associated with cardiovascular-related, respiratory-related, and lung cancer-related mortality.⁶³

3. Gaseous components

While the gas components of diesel exhaust are numerous, several compounds merit highlighting for their impacts on human health.

⁵⁵ *Id.* at ES-14.

⁵⁶ *Id.*

⁵⁷ *Id.* at ES-10 (Table ES-1).

⁵⁸ *Id.* at ES-15.

⁵⁹ *Id.*

⁶⁰ *Id.* at ES-11 (Table ES-1), ES-15.

⁶¹ *Id.* at ES-15–16.

⁶² *Id.* at ES-11 (Table ES-1).

⁶³ *Id.* at ES-16–17.

Nitrogen Oxides

NO_x, which include nitric oxide (NO) and nitrogen dioxide (NO₂),⁶⁴ are some of the major gaseous compounds in diesel exhaust.⁶⁵ On-road vehicles contribute approximately 37% of all NO_x emissions, with heavy-duty diesel engines contributing 46% of that amount.⁶⁶ The most significant health impacts for NO₂ are respiratory effects: There is a causal relationship with short-term exposure (triggering asthma attacks) and likely to be a causal relationship with long-term exposure (developing asthma).⁶⁷ Additionally, NO_x is involved in the formation of tropospheric (ground level) ozone: When NO_x reacts with volatile organic compounds in sunlight, ozone is formed.⁶⁸ Studies have linked ozone exposure to respiratory and metabolic health effects.⁶⁹

Carbon monoxide

On-road vehicles contribute more than half of the total CO emissions in the United States and as much as 75% of such emissions

⁶⁴ Nitrogen oxides include seven compounds. ENV'T PROT. AGENCY, TECHNICAL BULLETIN, NITROGEN OXIDES (NO_x), WHY AND HOW THEY ARE CONTROLLED 1 (1999). The shorthand "NO_x," however, is often used to refer to only two of these compounds: nitric oxide (NO) and nitrogen dioxide (NO₂). See, e.g., ENV'T PROT. AGENCY, INTEGRATED SCIENCE ASSESSMENT FOR OXIDES OF NITROGEN—HEALTH CRITERIA, at xxxiii (2016) [hereinafter INTEGRATED ASSESSMENT FOR OXIDES] (defining NO_x as "the sum of NO and NO₂").

⁶⁵ ENV'T PROT. AGENCY, HEALTH ASSESSMENT DOCUMENT FOR DIESEL ENGINE EXHAUST 2-85, 2-87 (Table 2-21) (2002).

⁶⁶ INTEGRATED ASSESSMENT FOR OXIDES, *supra* note 64, at 2-15 (citing 2011 data).

⁶⁷ *Id.* at 1xxxii (Table ES-1), 1xxxiii–1xxxiv.

⁶⁸ ENV'T PROT. AGENCY, INTEGRATED SCIENCE ASSESSMENT FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS at 1xiv, ES-2 (2020) [Hereinafter ASSESSMENT FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS]; see also *Ground-level Ozone Basics*, ENV'T PROT. AGENCY, <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics> (updated May 5, 2021).

⁶⁹ ASSESSMENT FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS, *supra* note 68, at ES-8 (noting a causal relationship between short-term exposure and respiratory effects, a likely causal relationship between long-term exposure and respiratory effects, and a likely causal relationship between short-term exposure and metabolic effects).

in U.S. metropolitan areas.⁷⁰ Although most of the on-road CO emissions come from gasoline vehicles,⁷¹ CO nonetheless constitutes a major component of the gaseous part of diesel emissions.⁷² EPA has identified several potential health hazards associated with CO exposure:

- Cardiovascular morbidity: There is likely to be a causal relationship with short-term exposure.
- Central nervous system effects: There is a suggestive causal relationship with both short-term and long-term exposure.
- Birth outcomes and developmental defects: There is a suggestive causal relationship with long-term exposure.
- Respiratory morbidity: There is a suggestive causal relationship with short-term exposure.
- Mortality: There is a suggestive causal relationship with short-term exposure.⁷³

Hydrocarbons

Diesel exhaust includes a significant number of hydrocarbons.⁷⁴ For example, benzene, a non-methane hydrocarbon, is a known human carcinogen for all routes of exposure.⁷⁵ As discussed above, aftermarket defeat devices increase NMHC in diesel emissions. Additionally, hydrocarbons can adsorb onto exhaust particles. For example, one report identified at least 19 hydrocarbons that are either probable or possible carcinogens that adsorbed on particles.⁷⁶

⁷⁰ ENV'T PROT. AGENCY, INTEGRATED SCIENCE ASSESSMENT FOR CARBON MONOXIDE 3-95 (2010) [hereinafter SCIENCE ASSESSMENT FOR CARBON MONOXIDE].

⁷¹ *Id.*

⁷² EPA HEALTH ASSESSMENT DOCUMENT, *supra* note 31, at 2-85, 2-87 (Table 2-21).

⁷³ SCIENCE ASSESSMENT FOR CARBON MONOXIDE, *supra* note 70, at 2-5 (Table 2-1).

⁷⁴ EPA HEALTH ASSESSMENT DOCUMENT, *supra* note 31, at 1-1.

⁷⁵ *Benzene*, ENV'T PROT. AGENCY,

https://iris.epa.gov/ChemicalLanding/&substance_nmbr=276 (last visited Oct. 20, 2021).

⁷⁶ STANLEY V. DAWSON, ET AL., CAL. ENV'T PROT. AGENCY, PART B: HEALTH RISK ASSESSMENT FOR DIESEL EXHAUST 1-6 (1998).

C. Environmental justice concerns

The pollution caused by aftermarket defeat devices raises potential environmental justice (EJ) concerns. EPA has defined environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies.”⁷⁷ A critical component of EPA’s efforts to promote EJ involves “address[ing] pollution and public health burdens caused by violations of environmental laws in the nation’s most overburdened communities.”⁷⁸ Additionally, EPA identified air quality as a “key area” where progress was needed, noting that “[l]ow-income populations are among those most at-risk to adverse health effects from exposure to fine particle pollution.”⁷⁹

Perhaps the most important EJ-related factor associated with aftermarket defeat devices is that communities with EJ concerns often are located near roadways. “Predominantly minority areas are more likely to . . . be . . . proxim[ate] to . . . roadway traffic.”⁸⁰ “A study of 3886 individuals hospitalized for acute myocardial infarction in 64 centers across the United States from 1989 to 1996 . . . found that individuals living closer to a major roadway were more likely to be of non-White race/ethnicity.”⁸¹ Additionally, studies have demonstrated that more racially segregated neighborhoods have higher concentrations of air toxins.⁸²

This proximity to roadways has collateral health consequences. One study found that “[p]ersons with both low income and high exposure” to air pollution “were 2.5 times more likely to die . . . than those with high income and low exposure.”⁸³ Additionally, “[c]ancer risk from

⁷⁷ ENV’T PROT. AGENCY, EJ 2020 ACTION AGENDA: THE U.S. EPA’S ENVIRONMENTAL JUSTICE STRATEGIC PLAN FOR 2016–2020 1 (2016).

⁷⁸ *Id.* at 3.

⁷⁹ *Id.* at 6.

⁸⁰ Miranda R. Jones et al., *Race/Ethnicity, Residential Segregation, and Exposure to Ambient Air Pollution: The Multi-Ethnic Study of Atherosclerosis (MESA)*, 104 AM. J. PUB. HEALTH 2130, 2130 (2014).

⁸¹ *Id.* at 2134–35.

⁸² *Id.* at 2135.

⁸³ HEALTH EFFECTS INST., TRAFFIC-RELATED AIR POLLUTION: A CRITICAL REVIEW OF THE LITERATURE ON EMISSIONS, EXPOSURE, AND HEALTH EFFECTS at 3-34 (2010) [Hereinafter A CRITICAL REVIEW OF THE LITERATURE ON EMISSIONS, EXPOSURE, AND HEALTH EFFECTS].

on-road vehicle emissions . . . was found to be higher in low-income and racial-minority [communities].”⁸⁴ Other studies, which examined “the health effects of a range of sources,” report that “transportation sources were the most important for lifetime cancer risk,” especially among racial minorities.⁸⁵

Relatedly, as one report concluded, “[l]iving close to busy roads is an independent risk factor for the onset of childhood asthma.”⁸⁶ There is a causal relationship between exposure to “traffic-related air pollution” (TRAP)⁸⁷ and the exacerbation of childhood asthma.⁸⁸ Studies also suggest a causal relationship between TRAP and the “onset of childhood asthma, nonasthma respiratory symptoms, impaired lung function, total and cardiovascular mortality, and cardiovascular morbidity.”⁸⁹ TRAP also “migrate[s] indoors through ventilation and infiltration and contribute[s] to indoor exposures.”⁹⁰

Thus, the widespread practice of deleting emission controls—which leads to significant increases in air pollutants—potentially exacerbates the environmental and public health impacts already borne by communities with EJ concerns.

VI. Tampering violations under 42 U.S.C. § 7413(c)(2)(C)

Criminal vehicle tampering cases can be prosecuted under section 113(c)(2)(C) of the CAA.⁹¹ That provision provides, in relevant part, that any person who knowingly “tampers with, [or] renders inaccurate, . . . any monitoring device or method required to be maintained or followed under this chapter” is subject to criminal fines and/or imprisonment.⁹²

⁸⁴ *Id.*

⁸⁵ *Id.* at 3-35.

⁸⁶ *Id.* at 4-25.

⁸⁷ Tailpipe emissions, referred to in public health studies as “traffic-related air pollution,” include carbon dioxide (CO₂), CO, hydrocarbons (HC), NO_x, PM, and mobile-source air toxics, including benzene, formaldehyde, 1,3-butadiene, and lead. A CRITICAL REVIEW OF THE LITERATURE ON EMISSIONS, EXPOSURE, AND HEALTH EFFECTS, *supra* note 83, at vii.

⁸⁸ *Id.* at xv.

⁸⁹ *Id.*

⁹⁰ *Id.* at 3-3.

⁹¹ 42 U.S.C. § 7413(c)(2)(C).

⁹² *Id.*

This provision broadly applies to “any monitoring device” required under the CAA. Title 42, section 7521(m) directs and authorizes EPA to promulgate regulations requiring the installation of OBDs capable of “accurately identifying[,] for the vehicle’s useful life . . . , emission-related systems deterioration or malfunction.”⁹³ In enacting section 7521(m) in 1990, Congress noted that the regulations “should *require the monitoring* and diagnosis of the catalyst, oxygen sensor, exhaust gas recirculation system, evaporative emission control system, auxiliary air system, and the fuel metering and ignition systems.”⁹⁴ Thus, EPA’s regulations require that OBDs be “capable of monitoring” all emission-related engine systems or components, or all emission-related powertrain systems or components.⁹⁵

OBDs, therefore, serve as the monitors that track vehicles’ emission control systems, ensuring that the controls are operating properly and that harmful tailpipe emissions are thereby restricted. This monitoring function addresses Congress’s longstanding concern that vehicles meet operational standards as long as they are operated.⁹⁶ Today, the OBD is the primary means by which conformance to emission standards for the lifetimes of millions of vehicles is monitored and maintained.⁹⁷

In this way, OBDs are like other monitoring devices required under the CAA, which all serve the important function of ensuring that

⁹³ 42 U.S.C. § 7521(m) (requiring regulations for new light-duty vehicles and light-duty trucks, and authorizing regulations for heavy-duty vehicles and engines).

⁹⁴ S. REP. NO. 101-228 (1989), *as reprinted in* 1990 U.S.C.C.A.N. 3385, 3482 (emphasis added).

⁹⁵ 40 C.F.R. §§ 86.010-18(a), 86.1806-05(a)(1).

⁹⁶ In 1970, when Congress mandated the installation of emission controls on vehicles, it stated: “This bill would require the American people to make a substantially greater investment in motor vehicles to assure that air quality standards are implemented. This investment would be defensible only if the emission control systems continued to conform to standards for the lifetime of the vehicle.” S. Rep. No. 91-1196, at 30 (1970).

⁹⁷ As EPA stated when promulgating the OBD requirements for heavy-duty diesel engines: “Because deterioration and malfunction of these devices can go unnoticed by the driver, and because their primary purpose is emissions control, and because the level of emissions control is on the order of 50 to 99 percent, some form of diagnosis and malfunction detection is crucial. We believe that such detection can be effectively achieved by employing a well designed OBD system.” 74 Fed. Reg. 8310, 8312 (Feb. 24, 2009).

emission controls on both stationary and mobile sources properly operate. Congress recognized the importance of preventing tampering with “monitoring devices” when it expanded the reach of section 7413(c)(2)(C) in the 1990 amendments, stating:

[T]he bill amends section 113(c)(2) . . . by adding criminal liability for knowing omissions of material information, knowing failures to take required actions, and knowing alterations of monitoring devices[.] Such liability is especially important for self-monitoring statutes like the Clean Air Act. EPA’s ability to oversee the regulated community under the Act is dependent to a large degree upon compliance by each source with reporting, record-keeping, and monitoring requirements.⁹⁸

Installing delete tunes so that OBDs do not perform the required function of monitoring a vehicle’s emission control system constitutes “tamper[ing] with” and “render[ing] inaccurate” a monitoring device or method required under the CAA, a violation of section 7413(c)(2)(C). Congress made this type of tampering conduct a crime because it undermines the fundamental means by which the CAA operates to monitor and ensure that exhaust from vehicles continues to meet emission standards.

Over the years, illegal vehicle tampering has become a burgeoning industry, causing significant cumulative harm to air quality. The extent of the violative conduct, however, was not fully comprehended until several years ago, at which time EPA directed resources toward civil and criminal enforcement against these aftermarket violations. Criminal enforcement in this arena is relatively new, and to date, only a few cases have been charged.

One successful case was brought in the Middle District of Pennsylvania involving Rockwater Northeast, LLC, a company that provided hauling services to hydraulic fracturing operations. Three Rockwater employees, a garage owner, and an independent trucker conspired to illegally tamper with OBDs on approximately 60 diesel trucks that were part of Rockwater’s vehicle fleet and to issue certificates that falsely stated that these vehicles met the Pennsylvania Department of Transportation inspection standards.

⁹⁸ S. REP. NO. 101-228 (1989), *as reprinted in* 1990 U.S.C.C.A.N. 3385, 3746.

These individuals pleaded guilty to one count of conspiracy to violate the CAA, 42 U.S.C. § 7413(c)(2)(C), and to defraud EPA and the Federal Motor Carrier Safety Administration (FMCSA).⁹⁹ A fourth Rockwater employee pleaded guilty to three counts of violating 42 U.S.C. § 7413(c)(2)(C) and one count of conspiracy to violate the CAA and to defraud EPA and FMCSA.¹⁰⁰ Rockwater pleaded guilty to 36 counts of violating 42 U.S.C. § 7413(c)(2)(C).¹⁰¹

Three of the Rockwater employees received sentences that included one year of probation and 50 hours of community service that had to be served with an entity with an environmental mission.¹⁰² The garage owner was sentenced to one year of probation and a \$10,000 fine.¹⁰³ The independent trucker was sentenced to one year of probation and a \$15,000 fine.¹⁰⁴ The fourth Rockwater employee was sentenced to six months' incarceration, one year of supervised release, and 50 hours of community service with an environmental project.¹⁰⁵ Rockwater paid a criminal fine of \$2,000,000 and a special assessment of \$12,400.¹⁰⁶

VII. Conclusion

Limits on emissions from mobile sources were intended by Congress and EPA to lower air pollution levels to protect the health of Americans and our environment. To bring their vehicles within those regulatory limits, vehicle manufacturers design systems to reduce the pollutants emitted from tailpipes through engineering and specially developed pollution control equipment. Manufacturers then apply to

⁹⁹ Plea, *United States v. Rexer*, No. 18-CR-174 (M.D. Pa. June 28, 2018), ECF No. 37; Plea, *Paulhamus*, No. 18-CR-174, ECF No. 43; Plea, *Sweitzer*, No. 18-CR-174, ECF No. 49; Plea, *Joseph*, No. 18-CR-174, ECF No. 58; Plea, *Powell*, No. 18-CR-174, ECF No. 64; Information, *Rexer*, No. 18-CR-174, ECF No.1.

¹⁰⁰ Motion to Withdraw Plea & Order, *United States v. Mellott*, No. 18-CR-267 (M.D. Pa. August 21, 2019), ECF No. 33; Indictment, *Mellott*, No. 18-CR-267, ECF No. 1.

¹⁰¹ Plea, *United States v. Rockwater Ne., LLC*, No. 20-CR-230 (M.D. Pa. Apr. 20, 2021), ECF No. 20.

¹⁰² Judgment, *Rexer*, No. 18-CR-174, ECF No. 125; Judgment, *Joseph*, No. 18-CR-174, ECF No. 137; Judgment, *Powell*, No. 18-CR-174, ECF No. 133.

¹⁰³ Judgment, *Sweitzer*, No. 18-CR-174, ECF No. 141.

¹⁰⁴ Judgment, *Paulhamus*, No. 18-CR-174, ECF No. 129.

¹⁰⁵ Judgment, *Mellott*, No. 18-CR-267, ECF No. 52.

¹⁰⁶ Judgment, *Rockwater Ne., LLC*, No. 20-CR-230, ECF No. 22.

EPA to obtain a certificate of conformity so that they can legally sell their vehicles in the United States. When pollution control equipment is removed from diesel trucks and the monitoring function of the OBDs is tampered with, the level of pollutants emitted from those vehicles' tailpipes increases significantly, putting the health of the public and the environment at risk. Effective criminal enforcement against those involved in tampering with OBDs and deleting emission controls punishes the wrongdoers and serves as a deterrent against others from engaging in such illegal conduct.

About the Authors

Krishna “Kris” Dighe is Senior Counsel with the Department of Justice’s (Department) Environmental Crimes Section, where he focuses on prosecuting criminal environmental violations around the country, environmental crime victim issues, and policy issues. Before joining the Section, Kris was an Assistant United States Attorney in Detroit for 10 years, where he prosecuted a variety of federal crimes, including the nation’s first environmental crimes RICO conviction. Before joining the Department, he worked in private practice in Detroit and Miami, after clerking for the Honorable Stanley Marcus in the United States District Court for the Southern District of Florida.

Stephen J. Foster is a Trial Attorney with the Department’s Environmental Crimes Section, where he specializes in the prosecution of environmental crimes. Before joining the Department, Stephen was an Assistant Commonwealth’s Attorney in Fairfax, Virginia, where he prosecuted a wide range of criminal cases, including narcotics and violent felonies.

Linda S. Kato is the Senior Regional Criminal Enforcement Counsel for Region 8 of the U.S. Environmental Protection Agency and has served as a Special Assistant U.S. Attorney in the districts of Colorado, Montana, and Wyoming, specializing in the prosecution of environmental crimes. Linda is a founding member of the Asian Pacific American Bar Association of Colorado and was its President in 1998. She is also a Hearing Board Member of the Colorado Supreme Court Disciplinary Panel, hearing cases involving matters of attorney discipline.

Contributing to the Whole-of-Government Approach to Climate Change: Civil, Judicial Enforcement Approaches Now in Hand

Leslie Allen

Senior Attorney

Environmental Enforcement Section

Environment and Natural Resources Division

Scott Bauer

Senior Counsel

Environmental Enforcement Section

Environment and Natural Resources Division

I. Introduction: A climate crisis and a mandate

On August 7, 2021, the Intergovernmental Panel on Climate Change (IPCC)¹ issued its Sixth Assessment Report on the current state of knowledge of the physical science of climate change.² The full report is almost 4000 pages long, has 234 authors, and has over 14,000

¹ The United Nations Environment Programme created the IPCC in 1988. It has 195 member countries. *See The Intergovernmental Panel on Climate Change*, UNITED NATIONS, <https://www.ipcc.ch/> (last visited Oct. 25, 2021). It was created “to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options.” *Id.*

² RICHARD P. ALLAN, ET AL., CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS (2021); *see also, e.g.*, Brady Dennis & Sarah Kaplan, Humans Have Pushed the Climate Into ‘Unprecedented’ Territory, Landmark U.N. Report Finds, Wash. Post (Aug. 10, 2021), <https://www.washingtonpost.com/climate-environment/2021/08/09/ipcc-climate-report-global-warming-greenhouse-gas-effect/>. The IPCC released a 42-page summary of this report. RICHARD P. ALLAN, ET AL., CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS: SUMMARY FOR POLICYMAKERS (2021) [hereinafter SUMMARY FOR POLICYMAKERS].

citations to scientific studies from across the globe.³ Its key findings are stark:

- It is “unequivocal that human influence has warmed the atmosphere, ocean and land,” causing “[w]idespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere,” and the scale of these recent changes is “unprecedented.”⁴
- “Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened” since the last IPCC report in 2013.⁵
- The earth’s surface temperature will continue to rise, and global warming of 1.5 and 2 degrees Celsius will be exceeded this century unless deep reductions in carbon dioxide (CO₂) and other greenhouse gas emissions occur in the coming decades.⁶ This increased warming will increase the “frequency and intensity of hot extremes, marine heatwaves, and heavy precipitation, agricultural and ecological droughts in some regions, and proportion of intense tropical cyclones, as well as reductions in Arctic sea ice, snow cover and permafrost.”⁷

Recently released studies by the National Oceanic and Atmospheric Administration (NOAA) have found similarly alarming evidence of human-induced climate change. According to NOAA, atmospheric carbon dioxide (CO₂) was measured in May 2021 at 419.13 ppm, the highest level since accurate measurements began 63 years ago.⁸ According to Pieter Tans, a senior scientist with NOAA’s Global

³ Tik Root, *Five Key Excerpts from the United Nations’ climate change report*, WASH. POST (Aug. 10, 2021), <https://www.washingtonpost.com/climate-environment/2021/08/10/ipcc-report-un-takeaways/>.

⁴ SUMMARY FOR POLICY MAKERS, *supra* note 2, at 5, 7, 9.

⁵ *Id.* at 10.

⁶ *Id.* at 17.

⁷ *Id.* at 19.

⁸ *Carbon Dioxide Peaks Near 420 Parts Per Million at Mauna Loa Observatory*, NAT’L OCEANIC AND ATMOSPHERIC ADMIN. (June 7, 2021), <https://research.noaa.gov/article/ArtMID/587/ArticleID/2764/Coronavirus-response-barely-slows-rising-carbon-dioxide>.

Monitoring Laboratory, “[w]e are adding roughly 40 billion metric tons of CO₂ to the atmosphere per year. . . . If we want to avoid catastrophic climate change, the highest priority must be to reduce CO₂ pollution to zero at the earliest possible date.”⁹

Further, a June 2021 joint study by NOAA and the National Aeronautics and Space Administration “found that [the] Earth’s [“]energy imbalance[”] [(that is, the balance between the amount of the sun’s energy that is absorbed in the atmosphere and the Earth’s surface versus the amount of energy that is emitted to space)] approximately doubled from 2005 to 2019,”¹⁰ an “unprecedented” increase.¹¹ This increase is due at least in part to the significant increase in greenhouse gases created by human activity. Greenhouse gases trap heat in the atmosphere that would otherwise dissipate into space. The increase in heat causes other changes, such as snow and ice melt and increased cloud cover that further exacerbate the situation.¹²

The effects of climate change are already vividly apparent.¹³ Sea levels are rising. Oceans are warmer. There are more frequent and intense droughts, storms, and heat waves. Changes to ecosystems are threatening wildlife and diversity. Scientists believe that the wide range of climate change impacts will “affect virtually every human on Earth in increasingly severe ways.”¹⁴

President Biden has recognized that we face a “profound climate crisis” and that “[w]e have a narrow moment to pursue action . . . to avoid the most catastrophic impacts of that crisis and to seize the

⁹ *Id.*

¹⁰ Joe Atkinson, *Joint NASA, NOAA Study Finds Earth’s Energy Imbalance Has Doubled*, NAT’L AERONAUTICS SPACE ADMIN. (June 16, 2021), <https://www.nasa.gov/feature/langley/joint-nasa-noaa-study-finds-earths-energy-imbalance-has-doubled>.

¹¹ *Id.*

¹² *Id.*

¹³ See generally *Effects of Climate Change*, WORLD WILDLIFE FUND, <https://www.worldwildlife.org/threats/effects-of-climate-change> (last visited July 7, 2021); *The Effects of Climate Change*, NAT’L AERONAUTICS SPACE ADMIN., <https://climate.nasa.gov/effects/> (last visited Oct. 25, 2021).

¹⁴ *Climate Impacts*, UNION OF CONCERNED SCIENTISTS, <https://www.ucsusa.org/climate/impacts> (last visited Oct. 25, 2021).

opportunity that tackling climate change presents.”¹⁵ He has ordered a “Government-wide approach to combat the climate crisis.”¹⁶ Current law provides the means for the Department of Justice (Department) and its law enforcement partners to contribute to that effort, including through civil, judicial enforcement of the federal pollution control laws.

This article describes how the Department’s Environmental Enforcement Section (EES) is doing this, beginning with a discussion of who we are, our authority, and some of the types of cases we bring. Next, we discuss the kinds of cases that generally can be thought of as “climate change cases.” Finally, we have selected four categories of enforcement actions that have brought about significant positive climate change impacts and discuss a couple of examples of each. In collaboration with our federal partners, and where opportunities present themselves, EES expects to bring more of these types of actions, and others, to increase our efforts to address climate change and its significant negative impacts.

II. Who is EES and how, generally, can enforcement efforts combat climate change?

A. Who is EES?

EES is a section within the Department’s Environment and Natural Resources Division, which traces its roots to the early 1970s. The Section was created in response to an increasing awareness of the negative effects pollution was having on the environment and public health and welfare.¹⁷

EES is one of the largest litigating sections in the Department. As of January 2021, it has approximately 172 employees, including 128 lawyers, and is primarily located in Washington, D.C. It is tasked

¹⁵ Exec. Order No. 14,008, 86 Fed. Reg. 7619, 7619 (Jan. 27, 2021) (“Tackling the Climate Crisis at Home and Abroad”).

¹⁶ *Id.* at 7622–23.

¹⁷ See *Section History*, DEP’T OF JUST., <https://www.justice.gov/enrd/section-history> (last visited Oct. 25, 2021). For more information about EES and its work, see, generally, *Environmental Enforcement Section*, DEP’T OF JUST., <https://www.justice.gov/enrd/environmental-enforcement-section> (last visited Oct. 25, 2021).

with the civil judicial enforcement of most of the federal pollution control and cleanup laws, including, among others, the Clean Air Act (CAA),¹⁸ the Clean Water Act (CWA),¹⁹ the Oil Pollution Act (OPA),²⁰ the Resource Conservation and Recovery Act (RCRA),²¹ and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund law).²² EES's cases are generally referred by client agencies, predominantly the Environmental Protection Agency (EPA), but also by other federal agencies that have authority, for example, to clean up contamination on their lands; that serve as trustees for federal natural resources, such as the U.S. Fish and Wildlife Service and the U.S. Forest Service; or both. These agencies are invaluable partners in EES's enforcement actions and settlement decisions, as are U.S. Attorneys' Offices, which often collaborate in this work. References throughout this article to EES include these federal partners.

Since its beginnings, EES has litigated cases and negotiated resolutions that have significantly reduced pollution and mitigated its effects across the United States. EES's enforcement cases run the gamut of environmental laws: For example, EES has brought actions to address the country's most significant oil spills, including the Exxon Valdez spill and the Deepwater Horizon oil rig spill; to clean up Superfund sites like Love Canal; to bring scores of outdated and undersized publicly owned treatment works and sewer systems into compliance with the Clean Water Act; and to stop engine and automakers like Caterpillar, Detroit Diesel, and Volkswagen from installing "defeat devices" that bypass or defeat critical emissions controls, resulting in significant amounts of illegal air pollutants.²³

¹⁸ 42 U.S.C. § 7401 et seq.

¹⁹ 33 U.S.C. § 1251 et seq.

²⁰ 33 U.S.C. § 2701 et seq.

²¹ 42 U.S.C. § 6901 et seq.

²² 42 U.S.C. § 9601 et seq.

²³ See *U.S. v. Exxon Corporation, et al. (D. Alaska)*, DEP'T OF JUST., <https://www.justice.gov/enrd/us-v-exxon-corporation-et-al-dalaska> (updated May 14, 2015) (Exxon Valdez oil spill); *Deepwater Horizon*, DEP'T OF JUST., <https://www.justice.gov/enrd/deepwater-horizon> (last visited Oct. 21, 2021); Press Release, Dep't of Just., Occidental to Pay \$129 Million in Love Canal Settlement (Dec. 21, 1995); *National Enforcement Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters*, ENV'T PROT. AGENCY, <https://19january2017snapshot.epa.gov/enforcement/national->

EES has also brought many cases as part of EPA “initiatives” to bring defendants across an industry into compliance with the law. Two very significant CAA national initiatives in recent years are EPA’s Coal-Fired Power Plant Enforcement Initiative and its Petroleum Refinery Initiative. Those industries emit large quantities of sulfur dioxide (SO₂) and nitrogen oxides (NO_x), which can significantly contribute to climate change (as discussed further below) and can have serious human health effects.

Beginning in 1999, EES brought a coordinated series of civil actions against coal-fired power plants, focusing on CAA violations and curtailing illegal emissions.²⁴ From 2000 to 2015, the United States entered into at least 31 settlements, resulting in estimated annual emissions reductions of over 2 million tons of SO₂ and 650,000 tons of NO_x.

Under the Petroleum Refinery Initiative, since March 2000, EES entered into 37 settlements with major national petroleum refineries to address violations of the CAA and associated air emissions.²⁵ “These settlements cover 112 refineries in 32 states and territories,” and the defendant companies represent “over 95 percent of the

enforcement-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our_.html (updated Dec. 19, 2016). The efforts to stop engine and automakers have resulted in, among many others, settlements with seven major heavy duty diesel engine makers in 1998, *see* News Release, Env’t Prot. Agency, DOJ, EPA Announce One Billion Dollar Settlement with Diesel Engine Industry for clean Air Violations (Oct. 22, 1998), and a series of three settlements with Volkswagen from 2016 to 2017. *See Volkswagen Clean Air Act Civil Settlement*, ENV’T PROT. AGENCY, <https://www.epa.gov/enforcement/volkswagen-clean-air-act-civil-settlement> (updated Oct. 19, 2021).

²⁴ The statistics in this paragraph and additional information about the initiative and the individual settlements can be found at *Enforcement*, ENV’T PROT. AGENCY, <https://www.epa.gov/enforcement/coal-fired-power-plant-enforcement> (updated Mar. 18, 2021); and U.S. GOV’T ACCOUNTABILITY OFF., AIR POLLUTION: EPA NEEDS BETTER INFORMATION ON NEW SOURCE REVIEW PERMITS 30–31, app. III (2012).

²⁵ The statistics in this paragraph and additional information about the initiative and the individual settlements can be found at *Petroleum Refinery National Case Results*, ENV’T PROT. AGENCY, <https://www.epa.gov/enforcement/petroleum-refinery-national-case-results> (updated Feb. 9, 2021).

Nation's petroleum refining capacity.”²⁶ EPA estimates annual emissions reductions of more than 260,000 tons of SO₂ and 95,000 tons of NO_x.

EES will continue to bring cases like the above under the breadth of its statutory authorities. However, given this Administration's focus on climate change, actions that address climate change will become an even more central feature of EES's work.

B. What are “climate change cases”?

There is no statute or regulation that spells out what a climate-related enforcement action is. A climate change case could be one that:

- (1) redresses violations of laws regulating “greenhouse gases;”
- (2) redresses violations of laws regulating pollutants that are not greenhouse gases, but where the remedy will also reduce co-emitted greenhouse gases;
- (3) redresses violations of laws regulating other pollutants that contribute indirectly to climate change; or
- (4) secures measures that address climate change or build resilience against the effects of climate change regardless of the nature of the claim.

According to EPA, there are four primary “greenhouse gases”:²⁷

- Carbon dioxide (CO₂): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle.”

²⁶ *Id.*

²⁷ These same gases were specified as greenhouse gases in Annex A of the United Nations' Framework Convention on Climate Change Kyoto Protocol. Framework Convention on Climate Change, *Report of the Conference of the Parties on its Third Session, Held at Kyoto from 1 to 11 December 1997*, at 28–29, U.N. Doc. FCCC/CP/1997/7/Add.1. For additional information on greenhouse gases and climate change, see *Climate Change Indicators: Greenhouse Gases*, ENV'T PROT. AGENCY, <https://www.epa.gov/climate-indicators/greenhouse-gases> (updated July 14, 2021).

- Methane (CH₄): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.”
- Nitrous oxide (N₂O): Nitrous oxide is emitted during agricultural, land use, industrial activities, combustion of fossil fuels and solid waste, as well as during treatment of wastewater.”
- Fluorinated gases: Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. [They are often found as part of foam production, refrigeration, or air conditioning.]²⁸

These are not, however, the only gases that contribute to climate change. There are four recognized “indirect” greenhouse gases: non-methane volatile organic compounds (NMVOCs), nitrogen oxides (NO_x), SO₂, and carbon monoxide (CO).²⁹ NMVOCs, CO, and NO_x can produce increases in tropospheric, or ground-level, ozone

²⁸ *Overview of Greenhouse Gases*, ENV’T PROT. AGENCY, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (updated OCT. 12, 2021).

²⁹ The information in this paragraph and footnote can be found in *Overview*, NAT’L ATMOSPHERIC EMISSIONS INVENTORY, <https://naei.beis.gov.uk/overview/> (last visited Oct. 25, 2021); HANNA SATEIN, OREGON TOXICS ALLIANCE, *CHEMICAL RELATIONSHIPS BETWEEN GREENHOUSE GASES AND AIR POLLUTANTS IN BIOMASS ENERGY PRODUCTION* 1, 4–6 (2009). In addition, these indirect greenhouse gases are detrimental to human health, with NO_x, SO₂, and some NMVOCs causing severe health problems. SATEIN, *supra* note 29, at 4–6. Although the contributions of SO₂ to climate change are not as well understood and, in some circumstances, the aerosols can block the sun and cool the atmosphere, it is still considered an indirect greenhouse gases. SO₂ also contributes significantly to haze and to acid rain. *Sulfur Dioxide Basics*, ENV’T PROT. AGENCY, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#:~:text=What%20are%20the%20environmental%20effects,which%20can%20harm%20sensitive%20ecosystems> (updated Jan. 28, 2021).

concentrations (also known as photochemical smog), leading to warming of the atmosphere. SO₂ contributes to aerosol formation, which in certain circumstances can also warm the atmosphere. Thus, as noted above, enforcement actions that target these substances can also help reduce climate change.

C. What does EES seek, generally, in its enforcement actions?

Whether EES litigates a case to judgment or negotiates a resolution before or after filing a matter, a complaint is required. The complaint, among other things, sets forth the statutory, regulatory, and factual basis for the violations, one or more claims for relief, and a prayer for relief. In its complaints, EES generally seeks one or more of the following types of relief discussed below, which courts have authority to order. In settlement, EES sometimes crafts additional relief; examples of this additional relief are also discussed below. All these types of relief have been and can be brought to bear in the types of climate change cases that are discussed in Section III.

1. Injunctive relief to come into compliance

If the defendant is still in violation of the law at the time of the enforcement action or at risk of continued intermittent noncompliance in the future, one of the most important goals of the lawsuit is an enforceable order to stop the violations and bring the defendant into consistent compliance with the law. Defendants may be required, for example, to install pollution control technology, to change their method of operating, or to rehabilitate their facilities to stop noncompliant emissions or discharges. Also, they may be required to employ environmental management systems, audits, testing or monitoring, and/or to improve their operation and maintenance (O&M) practices to help keep their facilities compliant over time. Refinery and power plant cases have used many of these requirements, as have sewer system cases, where municipalities are sometimes required to spend billions of dollars to expand their sewage treatment, storage, and conveyance capabilities; separate combined sewers; keep rainwater from getting into the sewers; and perform extensive O&M activities. Sometimes, defendants cannot physically upgrade their facilities to achieve compliance and may need to shut down, or if they deem compliance too expensive, they may choose to close certain facilities.

Especially for long-term capital projects, EES has incorporated measures in some settlements that are not currently required by law but help further climate change objectives (or other pollution-related goals) (category 4 in the above list of Climate Change cases). Specifically, a number of consent decrees have ensured that the capital projects required by the settlement are designed, built, or maintained to accommodate the effects of climate change, such as requiring appropriate resilience measures for infrastructure projects that might encounter storm or sea level change during their anticipated useful life.³⁰

2. Injunctive relief to redress the harm

Often, merely ceasing illegal activity and working towards compliance will not fully redress the harm its violations have caused because, for example, the violations resulted in excess harmful air emissions. While a defendant cannot pull these emissions out of the air, it can, going forward, reduce emissions of these pollutants or others that contribute to the adverse health or environmental effects its violations caused and, in that way, redress the harmful impacts of its noncompliance. EES's complaints, therefore, often seek additional injunctive relief, commonly referred to as "mitigation," designed to remedy, reduce, or offset harm caused by the alleged violations.

EES seeks this relief as a form of injunctive relief authorized by the statutes EES enforces. This is because of a long-standing doctrine providing that, unless specifically curtailed by Congress, "all the inherent equitable powers of the District Court are available for the proper and complete exercise of [its equitable] jurisdiction."³¹ most federal environmental statutes contain remedial language that courts have held does not impinge on this flexible authority.³² As a result,

³⁰ For example, as part of measures to upgrade municipal sewer systems, settlements have included language that requires any infrastructure to adhere to engineering practices to improve the resilience of the sewer system in accordance with EPA climate resilience guidance. *See, e.g.*, Consent Decree at 10, *United States v. City of Hattiesburg, Mississippi*, No. 20-cv-00158 (E.D. Miss. Aug. 26, 2020), ECF No. 2-1; Consent Decree at 14, *United States v. City of Manchester, New Hampshire*, No. 20-cv-00762 (D.N.H. July 13, 2020), ECF No. 2.

³¹ *Porter v. Warner Holding Co.*, 328 U.S. 395, 398 (1946).

³² *E.g.*, 42 U.S.C. § 7413(b) (CAA) (Court has authority to "award any other appropriate relief."); 42 U.S.C. § 6928(a)(1) (RCRA) (the United States may

defendants have been required, as mitigation, to clean up illegal pollutants, to limit the amount of future pollutants discharged or emitted more stringently than legal limits, to retrofit engines in school buses or other vehicles or equipment to make them less polluting, to address impacts on wildlife or the environment from noncompliant emissions, and to take other action.

Note that while EES litigates its cases to judgment when appropriate, most cases settle by a negotiated consent decree either before or after some litigation. In negotiations, it is often easier to craft injunctive relief to achieve particular goals that may go beyond a narrower, court-ordered compliance approach.³³ For example, during negotiations, EES has the ability to press for one type of injunctive relief over another and may be able to negotiate with defendants for

“commence a civil action in . . . district court . . . for appropriate relief”); 33 U.S.C. § 1319(b) (CWA) (authorizing courts to “restrain” violations and “require compliance”). A number of cases have specifically held that environmental statutes authorize mitigation in appropriate cases. *See, e.g.*, *U.S. Pub. Interest Rsch. Grp. v. Atlantic Salmon of Maine, LLC*, 339 F.3d 23, 31 (1st Cir. 2003) (“court’s equitable power to enforce [the CWA] includes the power to provide remedies for past violations”); *United States v. Deaton*, 332 F.3d 698, 714 (4th Cir. 2003) (court has authority under the CWA to order “remediation” in federal enforcement actions); *United States v. Holtzman*, 762 F.2d 720, 724–25 (9th Cir. 1985) (holding that CAA grant of jurisdiction to “restrain violations” includes power to enjoin otherwise lawful activity where necessary and appropriate to correct or dissipate harmful effects of past violations); *United States v. Cinergy Corp.*, 582 F. Supp. 2d 1055 (S.D. Ind. 2008) (Section 113 of the CAA authorizes mitigation). For more information on mitigation in EES/EPA cases, see Memorandum from Susan Shinkman, Dir., Off. of Civ. Enf’t, Env’t Prot. Agency to Reg’l Counsels et al., *Securing Mitigation as Injunctive Relief in Certain Civil Enforcement Settlements* (2d ed.) (Nov. 14, 2012).

³³ Further, it is well recognized that consent decrees can contain broader relief than can be obtained by court judgment. *See, e.g.*, *Local No. 93, Int’l Ass’n of Firefighters v. City of Cleveland*, 478 U.S. 501, 522–23 (1986) (“[I]t is the agreement of the parties, rather than the force of the law upon which the complaint was originally based, that creates the obligations embodied in a consent decree. Consequently, whatever the limitations Congress placed in [the statute] on the power of federal courts to impose [remedial] obligations . . . , these simply do not apply when the obligations are created by a consent decree.”); *see also id.* at 525 (“A federal court is not necessarily barred from entering a consent decree merely because the decree provides broader relief than the court could have awarded after a trial.”).

relief that reduces emissions or discharges more effectively than an alternate approach. The same is true with mitigation. There is no one-size-fits-all approach, and the parties often have more flexibility to craft a better end result in negotiations than with litigation.

Mitigation is not the only form of additional injunctive relief that the United States has sought. As another example, in resolving Volkswagen's (VW) violations of the CAA related to its defeat devices, VW agreed to spend \$2 billion over a 10-year period to support increased use of zero emission vehicles (ZEV) in the United States, thereby reducing use of fossil-fuel burning vehicles. Volkswagen's violations not only led to excess emissions for the defeat device vehicles, but likely depressed the sale of truly low-emitting vehicles by those who thought their VW was energy efficient. The ZEV investment compensated for that loss.³⁴

3. Civil penalty

EES also routinely seeks civil penalties under the environmental statutes it enforces. Penalties serve to punish a defendant for its violations and to deter the defendant and others from violating the law in the future. Penalties also prevent a defendant from profiting from its illegal activity and thus obtaining an unfair advantage over compliant companies. Each statute sets forth criteria courts should consider in determining a penalty, and among other things, these typically include consideration of any economic benefit defendants obtained and the seriousness of the violations.³⁵ EPA also has penalty

³⁴ See *Volkswagen Clean Air Act Civil Settlement*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/volkswagen-clean-air-act-civil-settlement#investment> (updated Oct. 19, 2021) (discussing ZEV Investment in VW 2.0 liter engines partial settlement); see also Partial Consent Decree at 18–20, *In re Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation*, No. 15-MD-02672 (N.D. Cal. Sept. 30, 2016), ECF No. 1973.

³⁵ For example, section 113(e) of the CAA requires the court to consider "the size of the business, the economic impact of the penalty on the business, the violator's full compliance history and good faith efforts to comply, the duration of the violation . . . the economic benefit of noncompliance, and the seriousness of the violation." 42 U.S.C. § 7413(e); see also, e.g., 33 U.S.C. § 1319(d) ("court shall consider the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements,

policies, which are based on the statutory criteria and guide EPA in determining appropriate penalties.³⁶ Thus, EES generally seeks a penalty amount that captures any economic benefit the defendant gained plus an appropriate additional amount to reflect the seriousness or gravity of the violation and the other statutory factors.

4. Supplemental environmental projects

In the past, EES has included “Supplemental Environmental Projects” (SEPs) in settlements.³⁷ A SEP:

is an environmentally beneficial project or activity that is not required by law, but that a defendant agrees to undertake as part of the settlement of an enforcement action. SEPs are projects or activities that go beyond what could legally be required in order for the defendant to return to compliance, and secure environmental and/or public health benefits in addition to those achieved by compliance with applicable laws.³⁸

In appropriate circumstances, EPA’s SEP policy allows the government to mitigate the penalty it otherwise would have sought to a certain extent in consideration of a defendant’s commitment to perform a SEP as part of the settlement.³⁹

the economic impact of the penalty on the violator, and such other matters as justice may require”).

³⁶ See, e.g., ENV’T PROT. AGENCY, POLICY ON CIVIL PENALTIES (1984). Additional general civil enforcement EPA penalty policies, as well as links to the media and program-specific EPA penalty policies can be found at *Enforcement Policy, Guidance & Publications*, ENV’T PROT. AGENCY, <https://www.epa.gov/enforcement/enforcement-policy-guidance-publications> (updated Sept. 30, 2021).

³⁷ The use of SEPs in judicial settlements is currently constrained by Department regulations. 28 C.F.R. § 50.28; see also Prohibition on Settlement Payments to Non-Governmental Third Parties, 85 Fed. Reg. 81,409 (Dec. 16, 2020).

³⁸ ENV’T PROT. AGENCY, SUPPLEMENTAL ENVIRONMENTAL PROJECTS POLICY 2015 UPDATE 1 (2015) (“SEP Policy”) (footnote removed).

³⁹ *Id.* at 21–24.

III. Four examples of climate change cases

A. Landfill gas cases

1. Background

Landfill gas is a byproduct of the decomposition of organic material in landfills. It is made up of approximately 50% methane, 50% CO₂ (both of which are greenhouse gasses (GHGs)), and a small amount of non-methane organic compounds (NMOC).⁴⁰ Methane is a particularly potent GHG. It is estimated to be 28 to 36 times more effective at trapping heat in the atmosphere than CO₂, and municipal solid waste (MSW) landfills are the third-biggest source of human-related methane emissions in the United States.⁴¹

The NMOCs in landfill gas, primarily volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) are also of concern. Ground-level ozone is created when sunlight acts on NO_x and NMOC in ambient air. In addition, many NMOCs identified in land fill gas are either known or suspected carcinogens and have the potential to produce other deleterious health effects as well. Often, landfill gas also contains hydrogen sulfide (H₂S), which, in addition to its characteristic rotten egg smell, can cause significant adverse health effects.⁴² Currently, EPA does not have authority to directly regulate methane or CO₂, but the same type of equipment that is used to capture pollutants that EPA does regulate, such as NMOC, will also greatly reduce methane and CO₂ emissions.

EES has brought several enforcement actions against MSW landfills that failed to comply with the law. More are currently being worked on within EES, and more are expected in the future.

2. Applicable law

Several CAA provisions and various regulations apply to MSW landfills. Most EES MSW landfill cases allege multiple violations.

⁴⁰ The statistics in this paragraph and other general information about methane and methane from landfills can be found at EPA's Landfill Methane Outreach Program website. *Basic Information about Landfill Gas*, ENV'T PRO. AGENCY, <https://www.epa.gov/lmop/basic-information-about-landfill-gas> (updated Oct. 7, 2021).

⁴¹ *Id.*

⁴² See, e.g., AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY (ATSDR), HYDROGEN SULFIDE FACT SHEET (2017).

CAA Section 111: NSPS, emission guidelines, federal plan

Section 111(b)(1)(A) of the CAA requires EPA to publish a list of categories of stationary sources of air pollution that “cause[] or contribute[] significantly to air pollution.” MSW landfills are one category of such stationary sources.⁴³ As required by sections 111 and 114 of the CAA, EPA promulgated regulations that are applicable to MSW landfills. One set of regulations, called the New Source Performance Standards for Municipal Solid Waste Landfills (Landfill NSPS), established federal standards of performance for new landfills that began construction, reconstruction, or modification after the publication date of the applicable Landfill NSPS.⁴⁴

Another set of regulations, published contemporaneously with the first Landfill NSPS, titled the Landfill Emission Guidelines, applies to existing landfills—landfills that began construction, reconstruction, or modification before May 30, 1991, when the first Landfill NSPS and Landfill Emission Guidelines were issued.⁴⁵ The Emissions Guidelines are implemented through state plans or, if a state doesn’t timely submit one, through a federal plan promulgated by EPA.⁴⁶

⁴³ 42 U.S.C. § 7411(b)(1)(A).

⁴⁴ See 42 U.S.C. § 7411(a); 40 C.F.R. Part 60, Subpart Www (NSPS for MSW landfills that commenced construction, reconstruction, or modification on or after May 30, 1991, but before July 18, 2014); 40 C.F.R. pt. 60, subpt. XXX (NSPS for MSW landfills that commenced construction, reconstruction, or modification after July 17, 2014).

⁴⁵ See 42 U.S.C. § 7411(d); 40 C.F.R. pt. 60, subpt. Cc (Emission Guidelines for existing MSW landfills for which construction, reconstruction or modification was commenced before May 30, 1991), 40 C.F.R. §§ 60.30c–60.36c; 40 CFR pt. 60, subpt. Cf (Emission Guidelines for existing MSW landfill for which construction, reconstruction, or modification was commenced on or before July 17, 2014), 81 Fed. Reg. 59276, 59332 (Aug. 29, 2016).

⁴⁶ See 40 C.F.R. §§ 62.14350–62.14356 (“Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction Prior to May 30, 1991 and Have Not Been Modified or Reconstructed Since May 30, 1991”); 64 Fed. Reg. 60689-01 (Nov. 8, 1999). On May 10, 2021, EPA finalized a Federal Plan, effective June 21, 2021, to implement the 2016 Emission Guidelines. See Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction On or Before July 17, 2014, and Have Not Been Modified or Reconstructed Since July 17, 2014, 86 Fed. Reg. 27756-01 (May 10, 2021).

In general, the Landfill NSPS and the federal plan require owners and operators of landfills that exceed a certain design capacity (equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³)) and emit more than a threshold amount of NMOC (50 Mg per year) to submit for EPA approval a plan for a gas collection and control system (GCCS) that will collect all gas and route it to a control device (typically a flare) and to properly install and operate the GCCS.⁴⁷ It is a violation of section 111(e) of the CAA to operate a source in violation of the Landfill NSPS or federal plan.⁴⁸

CAA Section 112: landfill NESHAP

CAA section 112(c)(2) and (d) required EPA to promulgate regulations setting national emission standards for HAPs identified in section 112(b).⁴⁹ To accomplish this mandate, EPA developed MACT—Maximum Achievable Control Technology—standards. MACT standards use the HAP emissions of the best-performing (thus, “Maximum Achievable”) industry sources to set the “MACT floor,” the minimum standard an industry must meet to comply.⁵⁰

MSW landfills commonly emit 13 section 112(b) HAPs, including, among others, vinyl chloride, ethyl benzene, toluene, and benzene. Accordingly, EPA, under the authority of sections 112 and 114 of the CAA, promulgated the “National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills” (Landfill NESHAP).⁵¹ The Landfill NESHAP only applies to certain landfills, that is, those that meet the same emissions rates set out above under the NSPS. The Landfill NESHAP requires each affected MSW landfill to either comply with the Landfill NSPS or with the requirements of a

⁴⁷ 40 C.F.R. § 62.14356(a)(1)–(b) (federal plan); 40 C.F.R. § 60.752(b) (landfill NSPS).

⁴⁸ 42 U.S.C. § 7411(e).

⁴⁹ 42 U.S.C. § 7412.

⁵⁰ See, e.g., National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, 68 Fed. Reg. 2227-01, 2228–29 (Jan. 16, 2003).

⁵¹ 40 C.F.R. pt. 63, subpt. Aaaa, §§ 63.1930–63.1990. For additional information about the Landfill NESHAP, see *Municipal Solid Waste Landfills: National Emission Standards for Hazardous Air Pollutants (NESHAP)*, ENV’T PROT. AGENCY, <https://www.epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-national-emission-standards> (updated July 9, 2021).

federal plan or federally approved and effective state section 111(d) plan. Thus, in general, a landfill that is in violation of the Landfill NSPS is also in violation of the Landfill NESHAP. It is a violation of the CAA to operate a source in violation of the Landfill NESHAP.⁵²

Title V permits

CAA Title V⁵³ establishes an operating permit program for certain sources that emit air pollutants. Title V does not impose new substantive requirements; it allows states to issue operating permits setting emission limits and standards for individual sources in accordance with applicable requirements, including NSPS and NESHAP requirements.⁵⁴ If EPA has approved a state's Title V operating permit program, sources subject to regulation under CAA sections 111 or 112 of the CAA, including MSW landfills, must obtain an operating permit.⁵⁵ An MSW landfill owner or operator must timely submit a complete permit application, and once the state issues a permit, the owner/operator must comply with it.⁵⁶ It is a violation of sections 502(a) and 503(a) of the CAA to fail to timely obtain a Title V operating permit or to violate any requirement of a permit issued under Title V.⁵⁷

NAAQS and SIPs

Sections 108 and 109 of the CAA require EPA to identify air pollutants that may endanger public health or welfare (criteria pollutants) and to set standards for those criteria pollutants.⁵⁸ These standards are known as the National Ambient Air Quality Standards (NAAQS). EPA has thus far listed six criteria pollutants subject to regulation, one of which, SO₂, is sometimes emitted from landfills and, as discussed above, is an indirect GHG.⁵⁹

Section 110(a) of the CAA requires each state to incorporate into its CAA "Implementation Plan" (SIP) emissions limitations and other

⁵² See 42 U.S.C. § 7412(i)(3)(A) (CAA § 112(i)(3)(A)).

⁵³ 42 U.S.C. §§ 7661–7661f.

⁵⁴ See 40 C.F.R. §§ 70.1(b), 70.6.

⁵⁵ 42 U.S.C. § 7661a (CAA § 502(a)).

⁵⁶ 42 U.S.C. §§ 7661a–7661b (CAA §§ 502(a), 503(a)).

⁵⁷ *Id.*

⁵⁸ See 42 U.S.C. §§ 7408(a), 7409(a).

⁵⁹ See generally *Criteria Air Pollutants*, ENV'T PROT. AGENCY, <https://www.epa.gov/criteria-air-pollutants#self> (updated Aug. 16, 2021).

provisions for the implementation, maintenance, and enforcement of the NAAQS.

Enforcement provisions

CAA section 113(b) authorizes the United States to commence a civil action for injunctive relief or for civil penalties for any violation of sections 111, 112, 502, or 503 of the CAA. Section 113(b) also authorizes civil actions for injunctive relief and civil penalties for any violation of a SIP. With inflation adjustments, the civil penalties applicable to all the CAA cases discussed below range from \$27,500 to \$102,638 per violation per day, depending on when the violations occurred.⁶⁰

3. *United States v. Brookhaven*

In 2020, the United States settled a case against Brookhaven, NY, to address its alleged long-standing failure to properly monitor and control emissions at its municipal landfill.⁶¹

The Town of Brookhaven, the largest town in Suffolk County, owns and operates the Brookhaven Landfill and the Brookhaven Landfill Gas Recovery Facility. The

⁶⁰ See 42 U.S.C. § 7413(b) (“\$25,000 per day per violation”), as adjusted in 40 C.F.R. Part 19. The Civil Penalties Inflation Act of 1990, 28 U.S.C. § 2461 *et seq.*, as amended by the Debt Collection Improvements Act of 1996, 31 U.S.C. § 3701, *et seq.*, requires EPA periodically to adjust its civil penalties for inflation, which modifications are set forth in 40 C.F.R. Part 19. Thus, the amount of the statutory penalty depends on when the violations occurred and when the penalty was assessed. The violations discussed in the cases below are subject to civil penalties that range from up to \$27,500 per day for each violation that occurred before March 16, 2004, and \$102,638 per day, per violation, for violations that occurred after November 2, 2015, and that were assessed on or after December 23, 2020. See 40 C.F.R. § 19.4, Tables 1–2.

⁶¹ We filed suit and lodged the consent judgment on September 24, 2020. Complaint, *United States v. Town of Brookhaven*, No. 20-cv-04522 (E.D.N.Y. Sept. 24, 2020), ECF No. 1; Notice of Lodging of Consent Judgment, *Town of Brookhaven*, No. 20-cv-04522, ECF No. 7. The consent judgment was entered on the court’s docket on December 29, 2020. Consent Judgment, *Town of Brookhaven*, No. 20-cv-04522, ECF No. 9. This case was led by the United States Attorney’s Office for the Eastern District of New York, in coordination with EES. See Press Release, Dep’t of Just., *Town of Brookhaven Agrees to Settle Federal Complaint by Complying with Clean Air Act* (Sept. 24, 2020).

landfill accepts municipal waste from the Town as well as other municipalities throughout Long Island. Waste is deposited at the landfill into various Cells, which are equipped with gas collection and control systems Gas generated from [two of these cells] contain[s] high levels of hydrogen sulfide [(H₂S)]. This gas] is combusted by an enclosed flare [in which the H₂S in the gas stream is] oxidized into [SO₂]. The Town also operates a system[,] called the SulfaTreat System, [which] reduce[s] H₂S] . . . in the gas upstream of the flare [and, therefore, SO₂] emissions from the flare.⁶²

The complaint alleged, among other things, that the town violated the Landfill NSPS and the Landfill NESHAP in by failing to operate the GCCS at all times, failing to address high temperatures in the landfill (risking underground fires), and failing to properly monitor surface methane emissions;⁶³ that the town violated its Title V operating permit by failing operate the sulfur SulfaTreat System for almost four years;⁶⁴ that the Town’s alleged failure to operate this system also caused or contributed to exceedances of the New York SIP’s air quality limits that implement the NAAQS for SO₂;⁶⁵ and that some of these violations contributed to excessive SO₂ in the ambient air surrounding the facility.⁶⁶ SO₂ “can pose a danger to human, animal and plant health.”⁶⁷

The consent judgment required Brookhaven to pay a civil penalty of \$249,166⁶⁸ and to bring the town into compliance with the CAA and the relevant regulations. The consent judgment set out specific requirements that the town must follow to achieve compliance, including operating the GCCS system properly; continuously operating the SulfaTreat system to reduce hydrogen sulfide concentrations from the landfill gas, thus lowering SO₂ emissions; installing and operating a continuous hydrogen sulfide monitoring system; designing and installing a new, taller flare to better disperse

⁶² Press Release, *supra* note 61.

⁶³ Complaint, *supra* note 61, at ¶¶ 70–79.

⁶⁴ *Id.* at ¶¶ 64–65.

⁶⁵ *Id.* at ¶ 66.

⁶⁶ *Id.* at ¶ 56.

⁶⁷ See Press Release, *supra* note 61.

⁶⁸ Consent Judgment, *supra* note 61, at ¶ 9.

emissions; conducting monthly methane surface monitoring; and surveying and correcting any areas of high temperature in the landfill.⁶⁹ Properly operating the GCCS system will also reduce methane, CO₂, and NMOC emissions.

Brookhaven must also implement a SEP to install a solar energy conversion system on the roof of its planned mechanics and garage repair shop.⁷⁰ The system will include 350 solar panels, which will generate 129 kilowatts of electricity. The SEP will reduce emissions associated with conventional electricity generation, including CO₂, methane, and nitrous oxide.⁷¹

4. United States v. Honolulu

Another example is a 2015 consent decree with Honolulu, the owner and operator of the Kapaa Sanitary Landfill near the Kailua.⁷² That landfill consists of three adjacent sites on approximately 160 acres. The Landfill first received solid waste in 1969 and closed in May 1997. In 1989, the county began to expand a portion of the Landfill. In 1990, Honolulu had a contractor install and operate a GCCS and turbine for the generation of power. In March 2002, the contractor ceased operating the gas turbine because it did not work properly. Thereafter, Honolulu, if it operated the landfill flare, did so infrequently.

The complaint alleged violations of the federal plan, the Landfill NESHAP, and Hawaii's Title V operating permit program.

⁶⁹ *Id.* at ¶¶ 12–24.

⁷⁰ *Id.* at ¶¶ 30–36.

⁷¹ See *Sources of Greenhouse Gas Emissions*, ENV'T PROT. AGENCY, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> (updated July 27, 2021).

⁷² On May 12, 2015, the United States filed the complaint and lodged a consent decree, which was entered on July 1, 2015. Complaint, *United States v. City and Cnty. Of Honolulu, Haw.*, No. 15-cv-00173 (May 12, 2015), ECF No.1; Notice of Lodging of Consent Decree, *City and Cnty. Of Honolulu, Haw.*, No. 15-cv-00173, ECF No. 2; Consent Decree, *City and Cnty. Of Honolulu, Haw.*, No. 15-cv-00173, ECF No. 12. See generally Department and EPA press releases about this settlement, which contain the information set forth in this paragraph. Press Release, Dep't of Just., Settlement with Honolulu to Prevent Hazardous Air Emissions at Kapaa Landfill (May 12, 2015); News Release, Env't Prot. Agency, EPA Requires Honolulu to prevent hazardous air emissions at Kapaa Landfill (May 12, 2015).

Specifically, the complaint alleged that Honolulu failed to submit a timely landfill GCCS Plan, failed to timely install and operate a GCCS for the landfill, failed to timely develop a Startup, Shutdown and Malfunction plan, and failed to submit a timely and complete Title V permit application.⁷³ EPA estimated that the Kapaa Landfill released more than 271,000 tons of methane and 5,400 tons of HAPs and VOCs before a proper control system was put into place.⁷⁴

During the pendency of the negotiations, Honolulu brought the landfill into compliance, including installing and properly operating a GCCS. Thus, in the prayer for relief, the complaint only sought civil penalties.⁷⁵

Under the consent decree, Honolulu had to pay a civil penalty of \$875,000⁷⁶ and implement a SEP.⁷⁷ Specifically, the consent decree required Honolulu to install a photovoltaic system (PV System)—a form of solar panel—on at least 261,857 square feet of buildings and open space area at Honolulu’s waste-to-energy facility. After completing construction of the SEP, Honolulu had to operate the SEP for at least three years and generate at least 15,056 megawatt hours of energy with the SEP over the three years. The total cost of the PV System was likely over \$16 million.⁷⁸ Further, EPA’s engineers estimate that the energy generated by the SEP equals, on an annual basis, the average energy used by 800 Oahu households.⁷⁹

B. Flaring cases

1. Background

We have negotiated settlements in several CAA cases in connection with an EPA initiative to address excess emissions from flaring at various industrial facilities, including petro-chemical plants, petroleum refineries, and chemical plants.⁸⁰ A flare is a combustion

⁷³ Complaint, *supra* note 72, at ¶¶ 44–55.

⁷⁴ U.S. ENV’T PROT. AGENCY, EPA PROGRESS REPORT 2016 | PACIFIC SOUTHWEST REGION 9, at 21 (2016).

⁷⁵ Complaint, *supra* note 72, at ¶ 15.

⁷⁶ Consent Decree, *supra* note 72, at ¶ 8.

⁷⁷ *Id.* at ¶¶ 10–17.

⁷⁸ See News Release, Env’t Prot. Agency, *supra* note 72.

⁷⁹ *Id.*

⁸⁰ See generally U.S. ENV’T PROT. AGENCY, ENFORCEMENT ALERT: EPA ENFORCEMENT TARGETS FLARING EFFICIENCY VIOLATIONS (2012).

device used to burn off and destroy volatile organic compounds, toxic compounds, and other pollutants contained in the waste gases generated by refineries and other industrial facilities.⁸¹ Flares often use “steam or air [(called “assist steam” or “assist air”)] to promote mixing of oxygen within the” waste gases sent to the flare.⁸² Adding assist steam or assist air ensures that the harmful constituents within the waste gases are effectively combusted.⁸³ Adding the proper amount of assist steam or assist air is vital to ensuring good combustion efficiency, but mixing too much steam or air with the waste gas in the flare cools the flame and dilutes the gas, thereby lowering the heating value.⁸⁴ On the other hand, using insufficient steam causes the flare to smoke (the visible result of un-combusted waste gas constituents) due to poor mixing and lack of oxygen.⁸⁵ Both problems reduce a flare’s combustion efficiency. “Better flare operation practices . . . have the potential to improve public health by[] . . . reducing emissions of toxic air pollutants.”⁸⁶ Air pollution from flares also includes VOCs and NO_x, which form the criteria air pollutant ozone.⁸⁷ VOCs and NO_x are subject to the CAA’s NAAQS.⁸⁸ Controlling emissions of such pollutants helps address climate change.

2. Applicable law

Flaring implicates several parts of the CAA. First, a facility’s flares may trigger the Act’s New Source Review/Prevention of Significant Deterioration requirements if the facility modifies its flares in such a way that increases emissions of criteria air pollutants.⁸⁹ Before

⁸¹ *Id.* at 1.

⁸² *Id.*

⁸³ *Id.* at 1–2.

⁸⁴ *Id.* at 2.

⁸⁵ *Id.*

⁸⁶ *Id.* at 1.

⁸⁷ Complaint at ¶ 20–21, *United States v. Dow Chem. Co.*, No. 21-cv-114 (E.D. La. Jan. 19, 2021), ECF No. 1.

⁸⁸ 42 U.S.C. §§ 7408, 7409 (CAA §§ 108, 109); 40 C.F.R. §§ 50.8–50.11.

⁸⁹ *See generally* 42 U.S.C. §§ 7470–7492 (Subchapter I, Part C (Prevention of Significant Deterioration (PSD) requirements)), 7501–7515 (Part D (Non-attainment NSR requirements)). PSD requirements apply in attainment areas that meet the NAAQS for a particular criteria pollutant. *See* 42 U.S.C. § 7407(d). Non-attainment NSR requirements apply in areas that are not

undertaking construction or major modifications that will significantly increase net emissions of criteria air pollutants, a facility must obtain a permit that requires strict air pollution control limits.⁹⁰

Second, flares are regulated under the NSPS and NESHAP regulations. Such regulations require, among other things, that flares (1) be designed and operated with no visible emissions (that is, smokeless);⁹¹ (2) be operated with a flame present at all times;⁹² (3) if steam-assisted, the net heating value of the gas being flared must be 300 Btu/scf or greater;⁹³ (4) must be monitored to ensure O&M in conformance with their design;⁹⁴ and (5) must be operated at all times when emissions are vented to them.⁹⁵ Moreover, the NSPS and NESHAP regulations require facilities to use “good air pollution control practices” to minimize emissions from affected sources and their associated air pollution control equipment.⁹⁶ This requirement applies at all times, including periods of startup, shutdown, and malfunction.⁹⁷ EPA may determine that good air pollution control practices are not being used based on, among other information, “monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.”⁹⁸

3. United States v. Dow Chemical Co.

A recent example of a flaring case is *United States v. Dow Chemical Co.*⁹⁹ The case concerned four petrochemical manufacturing facilities in Texas and Louisiana operated by Dow or its wholly owned

meeting the NAAQS for a particular pollutant. *See id.* Areas can be in attainment for one criteria pollutant, while in non-attainment for another.

⁹⁰ 42 U.S.C. § 7475(a) (requiring limits based on the best available control technology (BACT) in PSD areas); *see also* 42 U.S.C. § 7501(3) (requiring limits based on the lowest achievable emission rate (LAER) in non-attainment areas).

⁹¹ 40 C.F.R. §§ 60.18(c)(1), 63.11(b)(4).

⁹² 40 C.F.R. §§ 60.18(c)(2), 63.11(b)(5).

⁹³ 40 C.F.R. §§ 60.18(c)(3)(ii), 63.11(b)(6)(ii).

⁹⁴ 40 C.F.R. §§ 60.18(d), 63.11(b)(1).

⁹⁵ 40 C.F.R. §§ 60.18(e), 63.11(b)(3).

⁹⁶ 40 C.F.R. §§ 60.11(d), 61.12(e), 63.6(e)(1)(i).

⁹⁷ 40 C.F.R. §§ 60.11.

⁹⁸ *Id.*

⁹⁹ 21-cv-114 (E.D. La. June 9, 2021).

subsidiaries.¹⁰⁰ The facilities used 26 flares.¹⁰¹ We alleged that Dow modified the flares at its four plants in ways that triggered the Air Act's PSD/NSR requirements.¹⁰² Specifically, we alleged that Dow's changes increased emissions.¹⁰³ Other modifications included changes to the flare stacks, flare tips, and/or process unit sub-headers.¹⁰⁴ All of these changes allowed Dow's flares to receive and combust more waste gas, which likely resulted in significant net emissions increases of VOCs, NO_x, and carbon monoxide.¹⁰⁵ Dow, however, never applied for the proper PSD/NSR permits for these modifications, never installed the required pollution control technology (BACT or LAER), and never complied with other applicable NSR requirements, such as obtaining emission offsets for non-attainment areas.¹⁰⁶

In addition to the PSD/NSR violations, we alleged that Dow failed to perform several actions necessary to monitor steam-assisted flares to ensure that they were operated and maintained in conformance with their design. For example, we alleged that Dow failed to install and to properly operate monitors and to take other actions necessary to ensure the proper ratio of gas and steam flowing to the flares.¹⁰⁷ We also alleged that Dow failed to operate its flares using good air pollution control practices for minimizing emissions by "oversteaming" its flares, leading to poor combustion efficiency due to flame quenching or snuffing.¹⁰⁸ Finally, we alleged that Dow violated a variety of operating practices with respect to its flares, including operating its flares with visible emissions and sometimes without a flame.¹⁰⁹

Under our settlement with Dow, the company agreed to take several actions to address its flaring violations. First, Dow agreed to install, at each of its facilities, a Flare Gas Recovery System designed to capture

¹⁰⁰ The Louisiana Department of Environmental Quality was a co-plaintiff with respect to the facilities in Louisiana. Complaint at ¶ 2, *Dow Chem. Co.*, No. 21-cv-114, ECF No. 1.

¹⁰¹ *Id.* at ¶ 131–34.

¹⁰² *Id.* at ¶¶ 174–182.

¹⁰³ *Id.* at ¶ 175.

¹⁰⁴ *Id.* at ¶ 175.

¹⁰⁵ *Id.* at ¶ 176.

¹⁰⁶ *Id.* at ¶¶ 177–79.

¹⁰⁷ *Id.* at ¶ 195.

¹⁰⁸ *Id.* at ¶¶ 202–04.

¹⁰⁹ *Id.* at ¶ 219.

and re-use a significant fraction of the facilities' waste gases (along with the VOCs contained in those gases) that otherwise would be burned in flares.¹¹⁰ Dow also must implement a waste gas minimization plan for each flare.¹¹¹ Based on process knowledge and testing of the composition of the waste gases flowing to the flares, Dow must develop and periodically update such plans to reduce waste gas flow to its flares.¹¹² In addition, whenever a flare burns more than a specified amount of waste gas within a 24-hour period, Dow must perform a root cause analysis and take corrective action to address the findings.¹¹³ Moreover, the settlement required Dow to take steps to ensure that its flares operate with a high combustion efficiency. Such steps included installing monitoring and control systems and meeting a net-heating-value standard designed to achieve 98% combustion efficiency.¹¹⁴ Finally, under the settlement Dow had to pay a \$3 million civil penalty.¹¹⁵ The parties estimate that, once fully implemented, the pollution controls required by the settlement will reduce CO₂-equivalent emissions by over 517,000 tons per year.¹¹⁶ It also is estimated that the settlement will reduce VOC emissions by more than 5,600 tons per year and reduce toxic air pollutants, including benzene, by nearly 500 tons per year.¹¹⁷

4. United States v. Exxon Mobil Corp.

Another example of a case addressing excessive flaring is *United States v. Exxon Mobil Corp.*¹¹⁸ This case concerned eight Exxon Mobil petrochemical facilities—also in Texas and Louisiana.¹¹⁹ The

¹¹⁰ Consent Decree ¶¶ 37–38, *Dow Chem. Co.*, No. 21-cv-114, ECF No. 8.

¹¹¹ *Id.* at ¶¶ 29–33.

¹¹² *Id.* at ¶¶ 29–31.

¹¹³ *Id.* at ¶¶ 34–35.

¹¹⁴ *Id.* at ¶¶ 18–21, 23, 43–44.

¹¹⁵ *Id.* at ¶ 13.

¹¹⁶ *Id.* at 3.

¹¹⁷ *Id.*; Press Release, Dep't of Just., Dow Chemical Company and Two Subsidiaries Will Reduce Harmful Air Pollution at Four Chemical Plants (Jan. 27, 2021).

¹¹⁸ 17-cv-3302 (S.D. Tex. Aug. 6, 2021).

¹¹⁹ Consent Decree ¶ 12(e), (g), (i), (pp), *Exxon Mobil Corp.*, No. 17-cv-3302, ECF No. 23. As in the *Dow* case, the Louisiana Department of Environmental Quality was a co-plaintiff with respect to the Exxon Mobil facilities in Louisiana.

facilities used a total of 26 flares.¹²⁰ Our allegations against Exxon Mobil were similar to those against Dow: They were that Exxon Mobil (1) modified its flares in ways that triggered the CAA's NSR requirements;¹²¹ (2) failed to install and properly operate monitors and to take other actions necessary to ensure the proper ratio of gas and steam flowing to the flares;¹²² (3) failed to operate its flares using good air pollution control practices for minimizing emissions;¹²³ and (4) violated a variety of operating practices at its flares, including operating its flares with visible emissions.¹²⁴ The settlement was also similar to our settlement with Dow. For example, Exxon Mobil agreed to install a Flare Gas Recovery System at four of its facilities.¹²⁵ Exxon Mobil also had to implement a waste gas minimization plan for each flare¹²⁶ and, for certain flaring events, is required to perform a root cause analysis and take corrective action to address the findings.¹²⁷ Furthermore, Exxon Mobil had to install monitoring and control systems¹²⁸ and meet a high net-heating-value standard.¹²⁹ Finally, the settlement required Exxon Mobil to pay a \$2.5 million civil penalty.¹³⁰ It is estimated that, once fully implemented, the pollution controls required by the settlement will reduce VOC emissions by more than 7,000 tons per year and reduce toxic air pollutants, including benzene, by more than 1,500 tons per year.¹³¹

¹²⁰ *Id.* at ¶ 12(f), (h), (j), (qq).

¹²¹ Complaint ¶¶ 201–07, *Exxon Mobil Corp.*, No. 17-cv-3302, ECF No. 1.

¹²² *Id.* at ¶ 222.

¹²³ *Id.* at ¶¶ 201–07.

¹²⁴ *Id.* at ¶ 246.

¹²⁵ Consent Decree, *supra* note 119, at ¶¶ 37–38.

¹²⁶ *Id.* at ¶¶ 29–32.

¹²⁷ *Id.* at ¶¶ 34–35.

¹²⁸ *Id.* at ¶¶ 18–22.

¹²⁹ *Id.* at ¶¶ 43–44.

¹³⁰ *Id.* at ¶ 13.

¹³¹ Press Release, Dep't of Just., Under Agreement With the Justice Department and Environmental Protection Agency, Exxonmobil to Reduce Harmful Air Pollution at Eight U.S. Chemical Plants (Oct. 31, 2017).

C. Energy extraction cases

1. Background

Another area in which EES has handled many cases is energy extraction. The oil and natural gas extraction and distribution industry is a significant source of emissions of methane, other VOCs, and air toxics, including benzene, ethylbenzene, and n-hexane.¹³² Gas processing plants are subject to several CAA NSPS, most notably the Act's Leak Detection and Repair (LDAR) requirements.¹³³ Such plants also are subject to applicable provisions in State Implementation Plans. The following two case examples demonstrate the varying allegations EES has pursued in energy extraction cases and the remedies sought to address air emissions from energy facilities.

2. *United States v. MPLX LP*

The first example is *United States v. MPLX LP*.¹³⁴ MPLX LP operated 20 natural gas processing plants in Pennsylvania, Ohio, West Virginia, Kentucky, Texas, and Oklahoma.¹³⁵ These plants extracted liquid products from natural gas, including ethane, propane, butane, isobutane, and natural gasoline.¹³⁶ We alleged that MPLX LP failed to adequately monitor for leaks at its gas processing facilities. Specifically, the complaint alleged that MPLX LP failed to check for leaks at some locations covered by the LDAR regulations and failed to check for leaks using the proper detection method.¹³⁷ We also alleged that MPLX LP failed to use proper leak-prevention equipment at some

¹³² *Basic Information About Oil and Natural Gas Air Pollution Standards*, ENV'T PROT. AGENCY, <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/basic-information-about-oil-and-natural-gas> (updated Oct. 6, 2021).

¹³³ See 40 C.F.R. pt. 60, subts. OOOO, VVa, KKK, VV.

¹³⁴ 18-cv-2526 (N.D. Ohio Feb. 25, 2021).

¹³⁵ *MPLX LP Clean Air Act Settlement Information Settlement Information Sheet*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/mplx-lp-clean-air-act-settlement-information-sheet> (updated Sept 17, 2020). The states of Oklahoma and West Virginia and the Commonwealth of Pennsylvania were co-plaintiffs.

¹³⁶ *Id.*

¹³⁷ Complaint at ¶¶ 173–76, 179, 196–98, 204–05, 219–20, *United States v. MPLX LP*, No. 18-2526 (N.D. Ohio Nov. 1, 2018), ECF No. 1.

locations.¹³⁸ Furthermore, the complaint alleged that MPLX LP failed to perform timely and proper repairs where leaks were detected and that it operated some equipment with greater-than-permitted emissions.¹³⁹

To address its alleged violations of the LDAR regulations, MPLX LP agreed, under its settlement with the United States, to comply with the most stringent level of LDAR requirements at all of its facilities, even though many of them were not otherwise subject to such requirements because their construction date.¹⁴⁰ MPLX LP also agreed to implement additional LDAR measures at its facilities beyond the regulatory requirements.¹⁴¹ Moreover, MPLX LP committed to upgrade certain specific equipment at its facilities and to adopt better monitoring and repair practices at certain locations.¹⁴² Furthermore, MPLX LP installed, as mitigation for its LDAR violations, a VOC emissions recovery station to capture emissions from truck loading operations at two of its natural gas compressor stations.¹⁴³ Finally, MPLX LP agreed to pay a \$925,000 civil penalty¹⁴⁴ and to perform two SEPs: fence line monitoring at several of its facilities and a study of predictive leak monitoring software.¹⁴⁵ When fully implemented, EPA estimates that the new controls and requirements would result in emission reductions of 1,523 tons per year of VOCs.¹⁴⁶

3. United States v. Noble Energy, Inc.

Another example of EES's energy extraction litigation is *United States v. Noble Energy, Inc.*¹⁴⁷ This case concerned VOC emissions from condensate storage tanks that were part of Noble's oil

¹³⁸ *Id.* at ¶¶ 177–78, 183, 185, 199–200.

¹³⁹ *Id.* at ¶¶ 180–81, 186–87, 201, 203.

¹⁴⁰ Consent Decree ¶ 19, *MPLX LP*, No. 18-2526, ECF No. 8.

¹⁴¹ *Id.* at ¶¶ 21–33.

¹⁴² *Id.* at ¶¶ 59–66, 69–72, 79–80, 82–85.

¹⁴³ *Id.* at ¶¶ 96–100.

¹⁴⁴ *Id.* at ¶ 13.

¹⁴⁵ *Id.* at ¶¶ 104–06.

¹⁴⁶ *MPLX LP Clean Air Act Settlement Information Settlement Information Sheet*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/mplx-lp-clean-air-act-settlement-information-sheet> (updated Sept. 17, 2020).

¹⁴⁷ No. 15-cv-841 (D. Colo. Nov. 16, 2020) (Colorado was a co-plaintiff in this case.)

and natural gas production operations in the Denver–Julesburg (D–J) Basin in Boulder, Broomfield, and Weld counties, Colorado.¹⁴⁸ Noble operated over 3,000 such tanks in the D–J Basin,¹⁴⁹ which is located in a non-attainment area for ozone.¹⁵⁰ The tanks stored hydrocarbon liquids known as “condensate” that were separated from natural gas as part of the extraction process.¹⁵¹ When transferred to the storage tanks, vapors, including VOCs and other air pollutants, were released.¹⁵² Such vapors also were released as part of other operations.¹⁵³ The condensate tanks were required to have pollution control systems to route vapors from the tanks to emissions control devices.¹⁵⁴ As alleged in the complaint, however, Noble failed to perform an engineering design analysis sufficient to ensure that such systems were adequately sized to route all condensate vapors to the emission control devices.¹⁵⁵ In fact, the systems were inadequate to convey all condensate vapors.¹⁵⁶ As alleged, Noble also failed to determine whether, when, or how often the systems might become obstructed.¹⁵⁷ These alleged errors violated the SIP covering the D–J Basin.¹⁵⁸

Under the settlement in this case, Noble agreed to develop and implement a monitoring program to determine the peak vapor flow rate for all of its condensate storage tanks.¹⁵⁹ Noble then used those flow rates to evaluate the capacity of the vapor control systems for the tanks and perform any modifications necessary to ensure the control

¹⁴⁸ Complaint at ¶ 2, *United States, et al. v. Noble Energy, Inc.*, No. 15-841 (N.D. Colo. Apr. 22, 2015), ECF No. 1.

¹⁴⁹ *Id.* at ¶ 7.

¹⁵⁰ Extension of the Deferred Effective Date for 8-Hour Ozone National Ambient Air Quality Standards for the Denver Early Action Compact, 72 Fed. Reg. 53,952 (Sept. 21, 2007); Final Rule To Implement the 1997 8-Hour Ozone National Ambient Air Quality Standard, 77 Fed. Reg. 28,424 (May 14, 2012).

¹⁵¹ Complaint, *supra* note 148, at ¶ 3.

¹⁵² *Id.* at ¶ 3.

¹⁵³ *Id.* at ¶ 3.

¹⁵⁴ *Id.* at ¶ 4.

¹⁵⁵ *Id.* at ¶ 66.

¹⁵⁶ *Id.* at ¶ 67.

¹⁵⁷ *Id.* at ¶ 66.

¹⁵⁸ *Id.* at ¶¶ 66–74.

¹⁵⁹ Consent Decree at ¶ 8, *Noble Energy, Inc.*, No. 15-cv-841, ECF No. 16.

systems had adequate capacity for the peak vapor flows.¹⁶⁰ Noble then inspected the tanks following the control system upgrades with an infrared camera to ensure the systems captured all emissions and developed a regular inspection and maintenance program for the tanks.¹⁶¹ Noble also agreed to evaluate for leaks all pressure relief valves and “thief hatches” (sampling openings in the tanks) and to repair or upgrade such equipment as necessary.¹⁶² In addition, Noble performed several environmental mitigation projects to reduce VOC and NO_x emissions in the D–J Basin.¹⁶³ Finally, Noble paid a \$4,950,000 civil penalty¹⁶⁴ and performed two Supplemental Environment Projects: a study of various sampling methods and a program to replace wood-burning appliances in the D–J Basin.¹⁶⁵ EPA estimates that settlement will reduce VOC emissions by at least 2,400 tons per year.¹⁶⁶

D. Ozone-depleting substances cases

1. Background

EES also enforces violations of Title VI of the CAA (Stratospheric Ozone Protection). Title VI was enacted to implement the Montreal Protocol on Substances That Deplete the Ozone Layer and mandates the elimination or control of emissions of substances that are known or suspected to cause, or significantly contribute to, harmful effects on the stratospheric ozone layer. These ozone-depleting substances (ODS) are known as class I (such as chlorofluorocarbons (CFCs) and class II (such as hydrochlorofluorocarbons (HCFCs)) substances.¹⁶⁷ These ODS are commonly used in refrigeration, fire suppression, foam insulation, and other applications. Class I ODS have a higher ozone depletion potential than class II ODS, which were developed as

¹⁶⁰ *Id.* at ¶¶ 9–11.

¹⁶¹ *Id.* at ¶¶ 12, 16–18.

¹⁶² *Id.* at ¶ 15.

¹⁶³ *Id.* at ¶¶ 23–31.

¹⁶⁴ *Id.* at ¶ 32.

¹⁶⁵ *Id.* at ¶¶ 36–38.

¹⁶⁶ Press Release, Dep’t of Just., Noble Energy Inc. Agrees to Make System Upgrades and Fund Projects to Reduce Air Pollution in Colorado (Apr. 22, 2015).

¹⁶⁷ See *Ozone-Depleting Substances*, ENV’T PROT. AGENCY, <https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances> (updated June 14, 2021).

transitional substitutes for class I ODS. Both classes must be phased out under the Montreal Protocol.¹⁶⁸

When ODS are released into the atmosphere and contact ozone in the stratosphere, they release chlorine and bromine, which destroy ozone molecules. The ozone layer protects all life from harmful radiation from the sun. Over time, ODS will damage this ozone shield, leading to damaged crops and increased skin cancer, cataracts, and other problems.¹⁶⁹

EES has brought numerous actions to enforce the requirements of section VI, discussed below, with significant results for the atmosphere. These efforts are part of EPA's national enforcement initiative to control these harmful air pollutants from the largest sources of emissions.¹⁷⁰ For example, EPA has made a concerted effort to investigate grocery chains' compliance with Title VI and its regulations, discussed below. This has resulted in at least four significant settlements with household-name supermarkets, two of

¹⁶⁸ See *Phaseout of Class I Ozone-Depleting Substances*, ENV'T PROT. AGENCY, <https://www.epa.gov/ods-phaseout/phaseout-class-i-ozone-depleting-substances> (updated Oct. 14, 2020); *Phaseout of Class II Ozone-Depleting Substances*, ENV'T PROT. AGENCY, <https://www.epa.gov/ods-phaseout/phaseout-class-ii-ozone-depleting-substances> (updated Oct. 3, 2021). CAA section 604 establishes the phaseout targets for Class I ODS. 42 U.S.C. § 7671c. The production and import of most of these substances were banned effective 1994 for some and 1996 for others. Class II ODS have a different schedule, with reductions over time ending in a complete phaseout in 2030. Section 604 of the CAA establishes the phaseout schedule for these ODS. 42 U.S.C. § 7671d.

¹⁶⁹ *Basic Ozone Layer Science*, ENV'T PROT. AGENCY, <https://www.epa.gov/ozone-layer-protection/basic-ozone-layer-science> (updated Oct. 7, 2021).

¹⁷⁰ Many of these Title VI enforcement actions are discussed at *Enforcement Actions Under Title VI of the Clean Air Act*, ENV'T PROT. AGENCY, <https://www.epa.gov/ozone-layer-protection/enforcement-actions-under-title-vi-clean-air-act> (updated Apr. 8, 2021).

which are discussed below.¹⁷¹ EES has also brought cases against seafood industries¹⁷² and scrap recyclers,¹⁷³ among others.

2. Applicable law

Pursuant to section 608 of Title VI of the CAA (National Recycling and Emission Reduction Program),¹⁷⁴ in 1993, EPA promulgated regulations that established standards and requirements for using and disposing of class I and class II substances during the service, repair, or disposal of commercial refrigeration appliances and industrial process refrigeration. The objective of these “Subpart F Regulations”¹⁷⁵ is to “reduce the use and emission of [ozone-depleting] substances to the lowest achievable level” and “maximize the recapture and recycling of such substances.”¹⁷⁶ As relevant to the cases discussed below, the Subpart F Regulations contain the following leak repair and recordkeeping requirements for commercial refrigeration appliances containing more than 50 pounds of a class I or class II ozone-depleting substance when operating with a full charge of refrigerant:

- Leak repair: Upon each addition of refrigerant to an appliance, the owner or operator is required to calculate the appliance’s annual leak rate using one of two methods set forth in 40 C.F.R. § 82.152. If an appliance has an annual leak rate above 35%, the owner or operator of the appliance must, within 30 days after it discovers (or should have discovered) the leak, either (a) repair

¹⁷¹ In addition to Safeway and Trader Joe’s discussed below, EES also entered into a settlement with Costco in 2014, *see* Press Release, Dep’t of Just., United States Settles with Costco to Cut Ozone-Depleting and Greenhouse Gas Refrigerant Emissions Nationwide (Sept. 3, 2014), and most recently settled with Southeastern Grocers in 2020. *See* Press Release, Dep’t of Just., United States Settles with Southeastern Grocers to Reduce Ozone-Depleting Emissions at Grocery Stores in the Southeastern States (Aug. 23, 2019).

¹⁷² *E.g.*, Notice of Lodging of Consent Decree Under the Clean Air Act, 82 Fed. Reg. 52942-01 (Nov. 15, 2017); News Release, Env’t Prot. Agency, U. S. Settles with Trident Seafoods Corporation to Reduce Ozone-Depleting Emissions (Feb. 19, 2019).

¹⁷³ *E.g.*, News Release, Env’t Prot. Agency, Clifton, N.J. Recycling Company to Install Pollution Controls for Air Pollution Violations (May 4, 2016).

¹⁷⁴ 42 U.S.C. § 7671g.

¹⁷⁵ 40 C.F.R. pt. 82, subpt. F, §§ 82.150–82.169.

¹⁷⁶ CAA § 608(a)(3), 42 U.S.C. § 7671g(a)(3).

the leak or (b) prepare a retrofit or retirement plan for the leaking appliance and complete all work within one year.¹⁷⁷

- Recordkeeping: To ensure that owners and operators can determine when they must act under the leak repair requirements, they must keep records documenting the date and type of service on the appliance, as well as the quantity of refrigerant added, and maintain such records for at least three years.¹⁷⁸

Sections 113(a)(3)(C) and 113(b)(2) of the CAA authorize EPA to bring a civil action against any person for violating any requirement of Title VI of the CAA, including any requirement of its implementing regulations.¹⁷⁹

3. United States v. Safeway Inc.

In 2013, the United States entered into a Title VI settlement with the nation's second largest grocery store chain, Safeway, Inc.¹⁸⁰ In addition to operating stores under the name Safeway, the company also operates Vons, Randalls, and Carrs grocery stores in various parts of the country.¹⁸¹

The complaint alleged nationwide claims that “one or more” of 659 stores named in an appendix to the complaint (nearly all Safeway stores in the United States that have at least one appliance using

¹⁷⁷ 40 C.F.R. § 82.156(i)(1), (6), (9).

¹⁷⁸ 40 C.F.R. § 82.166(k), (m).

¹⁷⁹ 42 U.S.C. § 7413(a)(3)(C), (b)(2).

¹⁸⁰ *United States v. Safeway, Inc.*, No. 13-cv-4086 (N.D. Cal. Nov. 7, 2013). On September 4, 2013, the United States filed a complaint and lodged a consent decree, which was entered on November 7, 2013. Complaint, *Safeway, Inc.*, No. 13-cv-4086, ECF No. 1; Notice of Lodging of Consent Decree, *Safeway, Inc.*, No. 13-cv-4086, ECF No. 2; Consent Decree, *Safeway, Inc.*, No. 13-cv-4086, ECF No. 11. See EPA's webpage and the Department's press release about this case for additional general information. *Safeway, Inc. Clean Air Act Settlement*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/safeway-inc-clean-air-act-settlement> (updated Aug. 30, 2021); Press Release, Dep't of Just., United States Reaches Settlement with Safeway to Reduce Emissions of Ozone-Depleting Substances Nationwide (Sept. 4, 2013).

¹⁸¹ Press Release, Dep't of Just., *supra* note 180.

refrigerant that contains ODS)¹⁸² had violated Title VI Regulations.¹⁸³ Specifically, the complaint alleged violations of the regulations discussed above for failure to repair leaking appliances,¹⁸⁴ failure to prepare and implement retrofit or retirement plans,¹⁸⁵ and failure to maintain adequate servicing records.¹⁸⁶

In the consent decree, Safeway agreed to pay a \$600,000 civil penalty and to implement corporate-wide injunctive relief designed to significantly reduce its emissions of ODS from refrigeration equipment at 659 of its stores nationwide and estimated to cost approximately \$4.1 million.¹⁸⁷ The settlement involves the largest number of facilities ever under the CAA's regulations governing refrigeration equipment.¹⁸⁸

The decree required Safeway to implement three injunctive relief requirements at its stores. First, Safeway had to implement a Refrigerant Compliance Management System (RCMS).¹⁸⁹ The centerpiece of the RCMS was the required centralized, computerized refrigerant recordkeeping system to track Safeway's refrigerant use. This system replaced the ad hoc, store-by-store completion and maintenance of service records that caused Safeway's recordkeeping violations and contributed to its leak repair violations. The RCMS also required training, auditing, and management oversight of Safeway's refrigerant management.

Second, Safeway had to attain no greater than an 18% Corporate-Wide Average Leak Rate (CWALR) within three years, down from its 2012 rate of 25%.¹⁹⁰ As a general rule, because

¹⁸² We had previously entered into a settlement of similar claims with Dominick's Finer Foods, LLC, a division of Safeway, so these stores were not included in the complaint. *See* Press Release, Dep't of Just., U.S. Reaches Agreement with Dominick's Finer Foods (Jan. 21, 2004).

¹⁸³ Complaint, *supra* 180, at ¶¶ 27–38.

¹⁸⁴ 40 C.F.R. § 82.156(i)(1), (9); Complaint, *supra* 180, at ¶¶ 27–30.

¹⁸⁵ 40 C.F.R. § 82.156(i)(6); Complaint, *supra* 180, at ¶¶ 31–34.

¹⁸⁶ 40 C.F.R. § 82.166(k), (m); Complaint, *supra* 180, at ¶¶ 35–38.

¹⁸⁷ *See, e.g.*, Press Release, Dep't of Just., *supra* note 180.

¹⁸⁸ *Id.*

¹⁸⁹ Consent Decree, *supra* 180, at ¶¶ 12–13, app. B.

¹⁹⁰ *Id.* at ¶¶ 14–15; *see also Safeway, Inc. Clean Air Act Settlement*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/safeway-inc-clean-air-act-settlement#violations> (updated Aug. 30, 2021) (Injunctive Relief; Pollutant Reductions).

refrigeration systems like the ones at Safeway stores are closed-loop systems, refrigerant is only added to an appliance to replace refrigerant that leaks. Therefore, the amount of refrigerant added to an appliance over a given period is a proxy for the amount of refrigerant that leaked from that appliance over the same period. The corporate-wide leak rate reduction provision of the consent decree requires a reduction in the amount of ozone-depleting refrigerant that Safeway leaks over the course of a year, as measured by the amount of refrigerant Safeway adds to its appliances over that period. This corporate-wide reduction is expected to reduce leaked refrigerant by over 100,000 pounds, or over 45 metric tons.¹⁹¹

Finally, Safeway had to attain a 10% reduction in aggregate refrigerant usage by Safeway's highest-emission stores each year for three years.¹⁹²

These last two items—corporate-wide leak rate reduction and emission reductions at highest-emission stores—go beyond traditional injunctive relief, which ensures that defendants comply with applicable laws and regulations. Rather, they qualify as mitigation since the reductions offset past harm to public health and the environment caused by the company's leaked refrigerant.

¹⁹¹ See *Safeway, Inc. Clean Air Act Settlement*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/safeway-inc-clean-air-act-settlement#violations> (updated Aug. 30, 2021) (Pollutant Reductions). The figure of 100,000 pounds is equivalent to 45.359 metric tons.

¹⁹² Consent Decree, *supra* 180, at ¶¶ 16–18.

4. *United States v. Trader Joe's Co.*

Another example of an ODS settlement is the United States' consent decree with Trader Joe's Company.¹⁹³ Trader Joe's owns or operates approximately 461 specialty grocery stores in 43 states and Washington, DC, with almost 40% of these stores in California.

The complaint alleged the same three regulatory violations as the Safeway complaint.¹⁹⁴ The consent decree is somewhat different from the Safeway decree, which covered only those stores that used refrigerant containing ODS. The Trader Joe's settlement covered stores that use non-ozone-depleting refrigerants (for a total of 453 stores) because most non-ozone-depleting substance refrigerants still contain potent greenhouse gases, which the decree addresses through an additional type of injunctive relief.

The Trader Joe's consent decree required the company to pay a \$500,000 civil penalty, contained two of the same basic types of injunctive relief as the Safeway decree, but with some differences. The decree also required some additional injunctive measures. Trader Joe's estimated it would cost \$2 million to implement the injunctive relief outlined below.¹⁹⁵

First, Trader Joe's was required to implement a Refrigerant Compliance Management Plan (RCMP) similar to Safeway's.¹⁹⁶As part

¹⁹³ On June 21, 2016, the United States filed a complaint against and lodged a consent decree with Trader Joe's Company. Complaint, *United States v. Trader Joe's Co.*, No. 16-cv-3444 (N.D. Cal. June 21, 2016), ECF No. 1; Notice of Lodging of Consent Decree, *Trader Joe's Co.*, No. 16-cv-3444, ECF No. 2. The decree was entered on December 15, 2016. Consent Decree, *Trader Joe's Co.*, No. 16-cv-3444, ECF no. 19. See EPA's webpage and the Department's press release about this case for additional general information., *Trader Joe's Company Clean Air Act Settlement*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/trader-joes-company-clean-air-act-settlement#main-content> (updated Jan. 4, 2021); Press Release, Dep't of Just., United States Settles with Trader Joe's to Reduce Ozone-Depleting and Greenhouse Gas Emissions at Stores Nationwide (June 21, 2016).

¹⁹⁴ Complaint, *supra* note 193, at ¶¶ 33–44. It also included a claim for failure to submit a complete response to an EPA information request under section 114(a) of the CAA, 42 U.S.C. § 7414. *Id.* at ¶¶ 30–32.

¹⁹⁵ *Trader Joe's Company Clean Air Act Settlement*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/trader-joes-company-clean-air-act-settlement#impacts> (updated Jan. 4, 2021).

¹⁹⁶ Consent Decree, *supra* note 193, at ¶¶ 12–13, app. B.

of its RCMP, though, Trader Joe's also had to conduct quarterly monitoring of its equipment for three years.¹⁹⁷ The applicable regulations do not require this monitoring; consequently, leaks are often discovered only after the refrigerant in a device is severely depleted and the device is reported as being too warm. This monitoring system will help Trader Joe's catch leaks earlier, preventing unnecessary emissions of refrigerant gases into the atmosphere.

Second, the decree required Trader Joe's to monitor its corporate-wide average leak rate (CWALR) for a year and to achieve and maintain a CWALR at or below 12.1% per year, as measured by the amount of refrigerant Trader Joe's adds to its appliances over that period.¹⁹⁸ This provision applied for three years. This 12.1% CWALR is lower than that required by Safeway's (18%) or Costco's (19%)¹⁹⁹ decrees because the average equipment capacity at Trader Joe's stores is significantly smaller than the average equipment capacities at Costco warehouses and Safeway stores. Also, Trader Joe's stores are much newer, due to its more recent rapid expansion nationwide, and its refrigeration equipment is newer and likely to develop fewer leaks.

Third, at all new stores and major remodels, Trader Joe's must ensure that all covered refrigeration equipment only uses refrigerant that is non-ozone depleting and constitutes an acceptable substitute under EPA's Significant New Alternatives Policy Program (SNAP) and has a global warming potential (GWP) value less than or equal to 2150.²⁰⁰ The SNAP program, mandated under section 612 of the CAA, maintains a list of acceptable alternatives to class I and II refrigerants, after evaluating the risk to human health and the environment of such alternative refrigerants.²⁰¹ This decree

¹⁹⁷ *Id.* at app. B, ¶ G.2, 10–11.

¹⁹⁸ *Id.* at ¶¶ 14–15.

¹⁹⁹ See EPA's press release on the Costco decree, News Release, Env't Prot. Agency, US settled with Costco to cur ozone-depleting and greenhouse gas refrigerant emissions nationwide (Sept. 3, 2014).

²⁰⁰ Consent Decree, *supra* note 193 at ¶ 16.

²⁰¹ 42 U.S.C. § 7671k. See also EPA's website on the SNAP program, *Significant New Alternatives Policy (SNAP) Program*, ENV'T PROT. AGENCY, <https://www.epa.gov/snap> (updated Oct. 7, 2021), and new final rule, which, among other things, expands the list of acceptable substitutes. Protection of Stratospheric Ozone: Listing of Substitutes Under the Significant New Alternatives Policy Program, 86 Fed. Reg. 24444 (May 6, 2021).

requirement ensures that refrigerants used in these stores are not only free of ODS, but also have substantially reduced GWP than the current, commonly used substitutes for ozone-depleting refrigerants, such as hydrofluorocarbons (HFCs).²⁰²

Finally, in at least five new stores or five major remodels each year for three years—15 new or remodeled stores in all—Trader Joe’s must use one or more of five specified advanced refrigerants, including carbon dioxide.²⁰³ These advanced refrigerants are non-ozone-depleting and have even lower GWP values than those required in the other new stores, with GWPs that range from 1 to 1400, versus a GWP less than 2150 as required for the other new or remodeled stores.

As with the Safeway settlement, some of these requirements are meant to mitigate past harm to public health and the environment caused by Trader Joe’s violations. EPA has estimated that this settlement will reduce GHG emissions by approximately 31,000 metric tons of CO₂ equivalent over three years. “This is [equal] to the GHG emissions from over 6,500 passenger vehicles driven in one year, the CO₂ from approximately 33.2 million tons of coal burned, or the carbon sequestered by over 25,000 acres of forest.”²⁰⁴

²⁰² The term “GWP” measures global warming potential based upon the global warming potential of carbon dioxide, which is assigned a GWP of 1. The most commonly used Class II ODS substitutes are HFCs, which have high GWPs. For example, commonly used refrigerant HFCs have GWPs in the 3,900–4,700 range, which means they have 3,900–4,700 times the GWP of carbon dioxide. Nearly one-quarter of Trader Joe’s refrigerant appliances use HFC refrigerants. *Trader Joe’s Company Clean Air Act Settlement*, ENV’T PROT. AGENCY, <https://www.epa.gov/enforcement/trader-joes-company-clean-air-act-settlement#relief> (updated Jan. 4, 2021).

²⁰³ Consent Decree, *supra* note 193 at ¶ 17. As noted above, although CO₂ is typically considered a greenhouse gas, use of carbon dioxide as a refrigerant, when possible, is a great improvement over more commonly used refrigerants, such as Freon (R-404A), which has 3,922 times the potency for global warming than carbon dioxide. See United States Motion for Settlement United States’ Notice of Motion and Unopposed Motion to Enter Consent Decree; Memorandum of Points and Authorities in Support at 7, n.3, *Trader Joe’s Co.*, No. 16-cv-3444, ECF No. 17.

²⁰⁴ *Trader Joe’s Company Clean Air Act Settlement*, ENV’T PROT. AGENCY, <https://www.epa.gov/enforcement/trader-joes-company-clean-air-act-settlement#impacts> (updated Jan. 4, 2021).

IV. Conclusion

While Congress may enact more statutes and EPA may promulgate more regulations in the future to provide even more ammunition to combat climate change, EES, EPA, and our other federal partners make good use of the enforcement tools we currently have and plan to continue doing so. These critical times demand no less of us and the whole of government.

About the Authors

Leslie Allen is a Senior Lawyer with EES. She joined the EES in 1987 through the Attorney General's Honors Program. She has handled a wide range of environmental enforcement cases but has primarily focused on cases under the Clean Water Act, the CAA mobile source program, and CERCLA. She has also spent considerable time, often with the Environment and Natural Resources Division's Law and Policy Section, on a range of policy, regulatory, and international matters.

Scott Bauer is a Senior Counsel in EES. He has litigated enforcement cases under the CAA, the Clean Water Act, CERCLA, and RCRA. He joined the Section in 1999 through the Attorney General's Honors Program.

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Environmental Justice: A Path Towards Equity Through Environmental Crimes Prosecutions

Banumathi Rangarajan
Trial Attorney
Environmental Crimes Section

Leigh Rendé
Trial Attorney
Environmental Crimes Section

I. Introduction

For decades, many have struggled to address the inequitable burden certain communities bear in connection with our nation's waste and pollution. Notwithstanding presidential and federal agency efforts to advance environmental justice (EJ) in those communities, measurable success remains elusive, especially in the context of criminal violations. This article advocates for strategic prosecutions of environmental crimes given the burdens of pollution offenses and climate change on communities with EJ concerns. Through local and federal partnerships, thoughtful planning, and execution of an enforcement strategy, federal prosecutors can help ensure the protection of human health and the environment for all our communities.¹

¹ Ten years ago, the Executive Office for U.S. Attorneys (EOUSA) published a bulletin on EJ. See Kris Dighe & Lana Pettus, *Environmental Justice in the Context of Environmental Crimes*, 59 U.S. ATT'YS' BULL., no. 4, July 2011, at 3. The bulletin provided a robust discussion of EJ and recommended methods to incorporate EJ considerations into the investigation and prosecution of environmental crimes. Since its publication, a new Government Accountability Office report was issued on EJ in 2019 and, in 2021, a new executive order was issued that addresses EJ. Both of these documents are discussed in this article, as is a novel approach to building an EJ initiative in districts across the nation.

A. Communities with EJ concerns shoulder an unequal burden

The United States Environmental Protection Agency (EPA) defines EJ as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”² This definition arose because environmental *injustices* have occurred as certain communities have borne a disproportionate share of environmental burdens.

The EJ movement gained national recognition in the early 1980s when the people of Warren County, North Carolina, protested the placement of a toxic waste landfill in their community, which was in a low-income, predominantly Black rural area.³ These protests garnered national media attention.⁴ As a result, in 1982, Congress requested that the U.S. General Accounting Office, now the Government Accountability Office (GAO), “determine the correlation between the location of hazardous waste landfills and the racial and economic status of surrounding communities.”⁵ The GAO reviewed offsite hazardous waste landfills in the eight states comprising EPA’s southeastern region and, in 1983, determined that there was indeed a correlation: Three out of four of the offsite hazardous waste landfills in that region were located in predominantly Black communities in which at least 26% of the population was below the poverty level.⁶ In other words, the few communities with a majority Black population were home to 75% of the toxic landfills in that region. The disparity was clear to anyone who read the 1983 GAO Report.

² *Environmental Justice*, ENV’T PROT. AGENCY (updated Sept 8, 2021), <https://www.epa.gov/environmentaljustice>.

³ When North Carolina decided to build a landfill in rural Warren County to bury thousands of tons of contaminated soil, hundreds of protestors attempted to block the truckloads of toxic material, many of whom were arrested. *See, e.g., 55 Arrested in Protest at a Toxic Dump in Carolina*, N.Y. TIMES, Sept. 16, 1982, at A18 [hereinafter *55 Arrested in Protest*]; *Around the Nation; Congressman and 120 Arrested at PCB Protest*, N.Y. TIMES, Sept. 28, 1982, at A16 [hereinafter *PCB Protest*].

⁴ *See 55 Arrested in Protest*, *supra* note 3, at A18; *PCB Protest*, *supra* note 3, at A16.

⁵ GEN. ACCT. OFF., SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES 2 (1983).

⁶ *Id.* at 1.

Four years later, the United Church of Christ Commission for Racial Justice released a report finding that “[r]ace proved to be the most significant among variables tested in association with the location of commercial hazardous waste facilities” and that “[c]ommunities with the greatest number of commercial hazardous waste facilities had the highest composition of racial and ethnic residents.”⁷ These findings were further confirmed by a 1992 report in which EPA determined that “[r]acial minority and low-income populations experience higher than average exposures to selected air pollutants, hazardous waste facilities, contaminated fish and agricultural pesticides in the workplace.”⁸

B. Federal efforts to advance EJ have had limited success

EJ has been part of the federal lexicon since at least 1994, when President Clinton issued Executive Order 12,898, titled “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (1994 Order).⁹ The 1994 Order directs each federal agency to “make achieving [EJ] part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”¹⁰ It also created an inter-agency working group to coordinate federal EJ efforts.¹¹

Since then, federal agencies have attempted to implement the 1994 Order with varying success and unmeasured real-world impact. For example, in 2012, the Department of Justice (Department) issued its first annual EJ progress report.¹² And in 2014, Attorney General Holder issued revised guidance to promote, among other things, reducing environmental contamination in “all communities” by

⁷ COMM’N FOR RACIAL JUST., UNITED CHURCH OF CHRIST, TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES, at xiii (1987).

⁸ 2 ENV’T PROT. AGENCY, ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES 3 (1992).

⁹ Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994).

¹⁰ *Id.* at 7629.

¹¹ *Id.*

¹² DEP’T OF JUST., IMPLEMENTATION PROGRESS REPORT ON ENVIRONMENTAL JUSTICE (2011).

ensuring that the “communities most at risk of environmental harms are protected by enforcement of [environmental] laws and by applying these laws to diminish disproportionate burdens.”¹³ More specifically, this guidance defines an “environmental justice matter” as “any civil or criminal matter where the conduct or action at issue may involve a disproportionate and adverse environmental or human health effect on an identifiable low-income, minority, tribal, or indigenous population or community in the United States.”¹⁴

Nevertheless, in 2019, a GAO review of federal efforts to implement the 1994 Order (2019 GAO Report) found that several agencies in the interagency working group reported taking “some actions” over the 25 years to address EJ concerns, but that progress toward environmental justice was difficult to gauge “because most do not have updated strategic plans and have not reported annually on their progress or developed methods to assess progress.”¹⁵ The 2019 GAO Report concluded that the interagency working group could “benefit from

¹³ ERIC H. HOLDER, JR., ATT’Y GEN., DEP’T OF JUST., GUIDANCE CONCERNING ENVIRONMENTAL JUSTICE 2 (2014).

¹⁴ *Id.* at 4. Rooted in principles of equal protection of the laws to all citizens, AG Holder established five overarching goals for the Justice Department:

- A. Protect environmental quality and human health in all communities;
- B. Use environmental, civil rights, criminal, and civil laws to achieve fair environmental protection;
- C. Promote and protect community members’ rights to participate meaningfully in environmental decision-making that may affect them;
- D. Analyze data that will assist the Department in law enforcement, mediation, and counseling efforts involving environmental justice matters; and
- E. Promote full and fair enforcement of the laws, increase opportunity for access to environmental benefits, and minimize activities that result in a disproportionate distribution of environmental burdens.

Id. at 3. These goals remain in place today for every federal prosecuting office and can be reached with commitment to a defined prosecution strategy.

¹⁵ GOV’T ACCOUNTABILITY OFF., ENVIRONMENTAL JUSTICE: FEDERAL EFFORTS NEED BETTER PLANNING, COORDINATION, AND METHODS TO ASSESS PROGRESS (2019).

clear goals to establish organizational outcomes and accountability.”¹⁶ This was the second time the GAO made such a recommendation, which initially appeared in its 2012 report.¹⁷ The 2019 GAO Report ultimately made 24 specific recommendations to the agencies that were part of the working group at the time; these recommendations are in various stages of implementation.¹⁸

The 2019 GAO Report acknowledged numerous efforts the interagency working group made to implement the 1994 Order¹⁹ including several significant efforts by the Department (such as the Department’s EJ strategic plan and goals, which are consistent with the requirements of the 1994 Order).²⁰ The 2019 GAO Report, however, identified the Department as one of 12 agencies that had not established performance measures or milestones to evaluate progress toward addressing EJ issues.²¹ The report then recommended that the Department update its 2014 plan.²² The Department responded with a letter committing to review its plan and to make updates as necessary.²³

More recently, President Biden issued an executive order in 2021 updating the federal approach to EJ and incorporating EJ into actions oriented towards combating the effects of climate change (2021 Order).²⁴ The 2021 Order calls on federal agencies to “make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”²⁵ It also amends the 1994 Order by creating a White House Environmental Justice Interagency Council, which replaced the interagency working group

¹⁶ *Id.* at 42.

¹⁷ *Id.*

¹⁸ *Id.* at 47–49. For the current status of the recommendations, see *Environmental Justice: Federal Efforts Need Better Planning, Coordination, and Methods to Assess Progress, Recommendations*, GOV’T ACCOUNTABILITY OFF. (Sept. 16, 2019), <https://www.gao.gov/products/gao-19-543>.

¹⁹ U.S. Gov’t Accountability Off., *supra* note 15, at 45.

²⁰ *Id.* at 16.

²¹ *Id.* at 24–25.

²² *Id.* at 47.

²³ *Id.* at 72.

²⁴ Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

²⁵ *Id.* at 7629.

discussed above. The 2021 Order directs the Council to “develop a strategy to address current and historic environmental injustice” and to “develop clear performance metrics to ensure accountability, and publish an annual public performance scorecard on its implementation.”²⁶

As of the drafting of this article, the Department is assessing its EJ plan as well as implementing the EJ requirements within the 2021 Order. Notably, both the 2019 GAO Report and the 2021 Order focus on clear goals, clear performance metrics, and accountability as tools for federal agencies to measure and assess progress in addressing EJ issues. With that in mind, this article explores an existing enforcement model from another part of law enforcement that has demonstrated success in these areas.

C. Project Safe Neighborhoods should be considered as a model for advancing the Department’s EJ goals

The effort to incorporate EJ into the investigation and prosecution of environmental crimes would likely benefit from a framework similar to the Department’s successful Project Safe Neighborhoods (PSN) program. PSN is the nationwide initiative implemented to address violent crime in communities.²⁷ In May 2021, Deputy Attorney General Monaco referred to PSN as the “leading initiative that brings together federal, state, local, and tribal law enforcement officials, prosecutors, and a broad array of community stakeholders to identify the most pressing violent crime problems in an area and to develop comprehensive solutions to address them.”²⁸

Using the PSN program as a model for addressing EJ concerns could be extremely effective because PSN’s core values significantly overlap with values that are important to EJ. For example, referring to the PSN program, the Department stated that “[m]eaningful law enforcement engagement with and accountability to the community are essential underpinnings of any effective strategy to address

²⁶ *Id.* at 7630.

²⁷ *Project Safe Neighborhoods*, DEP’T OF JUST., <https://www.justice.gov/psn> (last visited Oct. 27, 2021).

²⁸ Memorandum from Lisa Monaco, Deputy Att’y Gen., to Dep’t of Just. Emps. on Comprehensive Strategy for Reducing Violent Crime 3 (May 26, 2021) [hereinafter *Violent Crime Memo*].

violent crime.”²⁹ The Assistant Attorney General then directed the Department to incorporate “community engagement” into its strategic plans to address violent crime going forward.³⁰ Likewise, the Department has identified community outreach as a “core tenet of environmental justice,” noting that “[e]ffective outreach gives communities the opportunity to voice their concerns about environmental decision-making that could affect them and helps us to better understand those concerns.”³¹ Next, partnering with other law enforcement groups is a major component of PSN. This interagency collaboration forms the foundation of PSN’s focused and strategic enforcement, which “begins with working collaboratively with federal, state, local, and tribal law enforcement partners.”³² Correspondingly, the Department views interagency collaboration as “essential to helping communities address the [EJ] challenges they face.”³³

A third example of how the PSN model aligns with EJ is the need for accountability. The Department “must maintain mechanisms for regularly reassessing PSN plans and ensuring that they both remain effective and continue to adhere to our core principles;” one way to do that is to “gather information about the incidence of violence and the effectiveness of the steps we take to address it.”³⁴ Similarly, the 2021 Order calls for the White House Environmental Justice Interagency Council to “develop clear performance metrics to ensure accountability” and to be transparent to the public about its effectiveness by putting out an annual “performance scorecard on its implementation” of the strategy to address EJ.³⁵ In short, we can draw from PSN’s methods of implementing its principal values—for example, through community engagement, interagency collaboration, and accountability—to build a path towards environmental equity.

Yet, we cannot look to PSN as a model without recognizing the financial support that PSN has received. Part of PSN’s success has been due to its funding. That is, over the years, Congress has allocated billions of dollars to PSN, allowing United States Attorneys’

²⁹ *Id.* at 1.

³⁰ *Id.* at 3.

³¹ DEP’T OF JUST., 2015 IMPLEMENTATION PROGRESS REPORT ON ENVIRONMENTAL JUSTICE 1 (2015) [hereinafter 2015 PROGRESS REPORT].

³² Violent Crime Memo, *supra* note 28, at 3.

³³ 2015 PROGRESS REPORT, *supra* note 31, at 1.

³⁴ Violent Crime Memo, *supra* note 28, at 4.

³⁵ Exec. Order No. 14,008, 86 Fed. Reg. 7619, 7630 (Jan. 27, 2021).

Offices (USAOs) to hire and train new Assistant United States Attorneys (AUSAs) to work full time on gun crime prosecutions, and to secure other resources to support the initiative.³⁶ Therefore, any effective EJ criminal enforcement strategy—and the protection of all of our communities—requires a similar significant investment on a national level.

II. Building blocks for an effective EJ criminal enforcement strategy

Again, there is nothing unusual or novel about a targeted approach to law enforcement. In 1998, based on the success of the Boston Gun Project’s “Operation Ceasefire,”³⁷ the Department launched the Strategic Approaches to Community Safety Initiative (SACSI) to evaluate the effectiveness of a collaborative and data-driven approach to crime reduction.³⁸ Through SACSI, which became the foundation for the PSN initiative, and from lessons learned from the PSN program itself, we know that a crime-reduction program’s effectiveness rests on five building blocks: (A) federal leadership; (B) partnerships with federal, state, and local law enforcement as well as the community; (C) a strategic enforcement plan based on information unique to the criminal conduct/target problem; (D) outreach/prevention; and (E) accountability.³⁹ Prosecutors can use these same building blocks to develop and implement an EJ initiative in their districts.

³⁶ DEPT’ OF JUST., PROJECT SAFE NEIGHBORHOODS: AMERICA’S NETWORK AGAINST GUN VIOLENCE 4 (2004) [hereinafter 2004 PSN REPORT]; see *Project Safe Neighborhoods (PSN): Funding*, BUREAU OF JUST. ASSIST. (updated July 8, 2021), <https://bja.ojp.gov/program/project-safe-neighborhoods-psn/funding>.

³⁷ For more information regarding Operation Ceasefire, see DAVID M. KENNEDY ET AL., NAT’L INST. OF JUST., REDUCING GUN VIOLENCE: THE BOSTON GUN PROJECT’S OPERATION CEASEFIRE (2001).

³⁸ JAN ROEHL ET AL., NAT’L INST. OF JUST., STRATEGIC APPROACHES TO COMMUNITY SAFETY INITIATIVE (SACSI) IN 10 U.S. CITIES: THE BUILDING BLOCKS FOR PROJECT SAFE NEIGHBORHOODS 1 (2005).

³⁹ See *id. at* 7–13; see also *Project Safe Neighborhoods (PSN): Overview*, BUREAU OF JUST. ASSIST., https://bja.ojp.gov/program/project-safe-neighborhoods-psn/overview?program_id=74 (updated July 13, 2021); 2004 PSN REPORT, *supra* note 36, at 3–4; EDMUND F. MCGARRELL ET AL., NAT’L INST. OF JUST., PROJECT SAFE NEIGHBORHOODS—A NATIONAL PROGRAM TO REDUCE GUN CRIME: FINAL PROJECT REPORT iii, 92–93, 167–69 (2009).

A. Federal leadership⁴⁰

1. USAOs

United States Attorneys (USAs) are uniquely situated to lead change in environmental enforcement efforts in their districts. USAs know their jurisdictions; have long-standing relationships with federal, state, local, and tribal law enforcement; are able to build partnerships; and perhaps most importantly, are able to sustain those working relationships.⁴¹ To leverage those connections and provide the requisite leadership, districts should designate a full-time prosecutor to lead, coordinate, and implement any environmental enforcement strategy, that is, a dedicated EJ prosecutor.⁴² And to be an effective leader, the EJ prosecutor must be trained on all aspects of the EJ dialogue and be prepared to train others.⁴³

Training and guidance ensures that investigatory and prosecutorial decisions adequately consider the multifaceted EJ issues unique to each community.⁴⁴ For example, evaluating “the actual or potential impact of the offense on the community and on the victim(s)” includes consideration “of economic harm done to community interests; . . . physical danger to the citizens or damage to public property; and . . . erosion of the inhabitants’ peace of mind and sense of” well-being.⁴⁵ At the same time, prosecutors need to be sensitive to existing disparities

⁴⁰ As noted previously, the authors recognize that the fundamental change advocated herein requires funding and additional resources allocated to USAOs or a shifting of enforcement priorities within the USAOs. This article is premised on funds being earmarked for the proposed EJ initiative.

⁴¹ ROEHL ET AL., *supra* note 38, at 7–8; *see* MCGARRELL ET AL., *supra* note 38, at 167–69.

⁴² Many districts already designate an AUSA as an Environmental Crimes Coordinator. The USAO could designate the same, or a separate AUSA, to be the EJ prosecutor. Either way, a title alone is insufficient to ensure programmatic change to EJ prosecutions. The designated prosecutor’s docket, like a PSN Coordinator’s docket, must be exclusively committed to the efforts to effectuate change. In addition, districts tend to assign more than one prosecutor to handle violent crimes. Therefore, depending on the size of an EJ docket and funding availability, additional AUSAs may need to be assigned to manage the workload efficiently and effectively.

⁴³ As a starting point, the authors recommend EJ Prosecutors read Dighe & Pettus, *supra* note 1.

⁴⁴ HOLDER, *supra* note 13.

⁴⁵ *See* JUSTICE MANUAL 9-27.230 cmt. 2 (Principles of Federal Prosecution, Initiating and Declining Charges—Substantial Federal Interest).

in setting enforcement priorities. Calculating economic harm by property value losses without considering how property values might relate to median income, wealth, or other measures of economic well-being in the same community might cause investigators or prosecutors to erroneously weigh this factor against continuing with a case.

2. The Department's Environmental Crimes Section

In addition to leadership at the district level, the USAO should pair its EJ prosecutor with a prosecutor from the Department's Environmental Crimes Section (ECS) (collectively referred to hereafter as the "EJ Prosecutors"). ECS prosecutors bring subject matter expertise to any prosecution, along with access to the national perspective and additional resources. The ECS prosecutor should be co-responsible for all EJ efforts, including training, outreach, and accountability.

Given the complexity of EJ-focused investigations and prosecutions, annual training at the Department's National Advocacy Center by ECS provides an essential platform to address emerging issues and considerations and to collaborate across district lines. Such comprehensive training and guidance ensures informed leadership by prosecutors, as well as a strong foundation for law enforcement and community partnerships.

EJ prosecution teams also may wish to draw from other experts within the Department, including members of the Environment and Natural Resources Division's (ENRD) EJ Working Group, for additional guidance on how to identify and respond to EJ issues in their districts. In addition, early in an EJ investigation, EJ Prosecutors should utilize the resources of the new Environmental Crime Victim Assistance Program, operated by ENRD and EPA's Office of Criminal Enforcement and Forensics Training.⁴⁶ This program helps prosecutors, law enforcement, and victim specialists address the intersection of EJ issues and services for environmental crimes victims under the Victims' Rights and Restitution Act and the Crime Victims' Rights Act.⁴⁷

⁴⁶ ENRD and EPA officially announced the formation of the Environmental Crime Victim Assistance Program on April 20, 2021. *Environmental Crime Victim Assistance*, DEP'T OF JUST. (updated Oct. 15, 2021), <https://www.justice.gov/enrd/environmental-crime-victim-assistance>.

⁴⁷ Simone Jones, *Prosecutors Will Turn to Crime Victim Laws in Environmental Justice Cases*, BLOOMBERG LAW (June 9, 2021),

Working together, USAOs and ECS bring a strong, educated leadership foundation with significant resources to any EJ initiative. Such leadership is critical to the success of an EJ enforcement program.

B. Partnerships

Department guidance directs prosecutors to “look for ways to assist state, local, and tribal governments in their efforts to achieve environmental justice.”⁴⁸ It is through partnerships—the second building block—that EJ Prosecutors can accomplish this goal and further equal protection of their communities.

1. Law enforcement partners

Every prosecutor understands the importance of strong law enforcement partnerships in a successful prosecution. Existing data underscores just how critical those relationships are. In fact, “[a] key component of prosecution efforts under SACSI was the unprecedented cooperation between federal and state/local prosecutors.”⁴⁹

An effective tool to encourage such partnerships is task forces that include law enforcement and criminal justice agencies at all levels of government. Additionally, and perhaps as no surprise, a hallmark of a successful task force is “distributed leadership,” meaning there is strong leadership from every key player (for example, federal investigative agencies, local law enforcement, municipal or county government, and state and local prosecutors).⁵⁰ To foster distributed leadership, EJ Prosecutors should emphasize information sharing, when appropriate, to help identify cases, develop evidence, and collectively select the path forward. This “smart prosecution” process—whereby federal/state/local prosecutors and law enforcement review cases and decide “whether a case could most effectively be prosecuted at state or federal level”—contributed to the success of the PSN initiative.⁵¹ It is a process equally suited for EJ cases.

<https://news.bloomberglaw.com/environment-and-energy/prosecutors-will-turn-to-crime-victim-laws-in-environmental-justice-cases>; see 30 U.S.C. § 20141; 18 U.S.C. § 3771.

⁴⁸ HOLDER, *supra* note 13, at 11.

⁴⁹ ROEHL ET AL., *supra* note 38, at 12.

⁵⁰ MCGARRELL ET AL., *supra* note 39, at iv, 169.

⁵¹ *Id.* at 10.

Ideally, every potential EJ prosecution would be reviewed by a USAO, state/local prosecutors, and law enforcement partner agencies to ensure that resources and enforcement authorities are used in the most efficient and effective manner. Ultimately, it is multi-level prosecutions and ensuing consequences that serve as a deterrent against the further victimization of communities with EJ concerns.

Of course, any effective working group or task force requires cross-training law enforcement officers and prosecutors on best practices in environmental crimes investigations, technical and expert resources, and community outreach to build capacity for successful environmental crimes investigations and prosecutions at all levels. Therefore, EJ Prosecutors need to educate its partners on the basic statutes, regulations, and other legal authorities of each jurisdiction so that effective and appropriate referrals can be made between state, local, tribal, and federal authorities.

2. Community partners

Recognizing that community involvement is “crucial to establishing legitimacy and support” for any EJ enforcement program,⁵² the Department’s 2014 EJ Strategy mandated that prosecutors “[w]ork with communities so that enforcement actions and other programs, activities, and policies respond as directly as possible to actual environmental risks and concerns.”⁵³ It further committed the Department to working with other federal agencies “to promote understanding and communication between communities and the [f]ederal government about lawsuits and other actions or policy decisions that affect those communities.”⁵⁴

One way to foster community relationships is to facilitate the exchange of information, as discussed more fully below in subsection D, which addresses outreach and prevention. In addition to soliciting feedback and information from the public, EJ Prosecutors and law enforcement partners should use outreach to inform the public about potential environmental crimes, the criminal process, the types of information and evidence that are used in environmental crimes prosecutions, the types of resolutions available, services available to crime victims, and the various means of reporting potential

⁵² *Id.* at 19.

⁵³ ERIC H. HOLDER, JR., ATT’Y GEN., U.S. DEP’T OF JUST., ENVIRONMENTAL JUSTICE STRATEGY 2 (2014) [hereinafter 2014 Strategy].

⁵⁴ *Id.* at 9.

environmental crimes.⁵⁵ Hopefully, through such efforts, prosecution teams will be able to draw communities into the decision-making process.

3. Researchers/scientists

In addition to law enforcement and community members, researchers and scientists also play a critical role in crime-reduction efforts, especially in strategic planning and problem solving.⁵⁶ In fact, the 1994 Order recognizes the value of data and specifically directs that “each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income.”⁵⁷ It also requires that agencies “use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.”⁵⁸ Section 3-302(b) further directs agencies to

collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action.⁵⁹

Most prosecutors may not have previously considered using a data analyst to formulate an EJ enforcement strategy, but such an expert can be an invaluable resource. Research partners bring expertise in problem identification and analysis, assessments, and planning.

⁵⁵ See Dighe & Pettus, *supra* note 1, at 10–11.

⁵⁶ See ROEHL ET AL., *supra* note 38, at 1 (finding “the integration of a local research partner into the core planning group [set the SACSI approach] apart from its predecessors.”).

⁵⁷ Exec. Order No. 12,898, 59 Fed. Reg. 7629, 7631 (1994).

⁵⁸ *Id.*

⁵⁹ *Id.*

Researchers can assist the law enforcement team in several ways, including:

- Collecting data, identifying the problems, and helping the team understand the EJ issues in the district;
- Working with the EJ Prosecutors and law enforcement partners to develop strategies specifically designed to target the problem;
- Monitoring the implementation of the enforcement strategies;
- Providing feedback to refine and improve programs; and
- Assessing the program's impact.⁶⁰

Districts may want to engage researchers from organizations within their regions due to the particular benefits a local presence may offer. However, given that EJ Prosecutors have access to dozens of experts within other federal agencies, like EPA, the Agency for Toxic Substances and Disease Registry, and the Centers for Disease Control's National Center for Environmental Health, researchers should consult with those experts in making any recommendations to the prosecution team. Such consultation should include, as a starting point, data gathered by EPA and made available through EPA's EJ mapping tool, known as EJ Screen, which incorporates environmental and demographic data into one platform.⁶¹ In addition, researchers should consult with EPA's regional EJ coordinators to ensure that consideration has, or could be, given to data from community sources that may highlight regional issues as well.

Ultimately, data gathered by researchers and scientists allow law enforcement to analyze the problem; to identify patterns to focus on for prosecution, intervention, and prevention; to design the enforcement strategy; and to further ensure that limited resources are used in the most effective way and on the most serious environmental issues plaguing a district's communities.⁶² Such data provides the foundation for any strategic enforcement plan.

⁶⁰ See MCGARRELL ET AL., *supra* note 39, at 1–2.

⁶¹ *EJSCREEN: Environmental Justice Screening and Mapping Tool*, ENV'T PROT. AGENCY, <https://www.epa.gov/ejscreen> (updated Oct. 1, 2021).

⁶² See ELIZABETH GROFF ET AL., STRATEGIC APPROACHES TO COMMUNITY SAFETY INITIATIVE: ENHANCING THE ANALYTIC CAPACITY OF A LOCAL PROBLEM-SOLVING EFFORT 3 (n.d.).

C. Strategic enforcement

Like PSN, any EJ initiative should be a problem-solving program based on a strategic planning process rooted in research data with articulated prosecution, deterrence, and prevention goals.⁶³ This third building block draws from all available resources and the input of every partner to create an enforcement plan unique to the district and its communities.

Because any EJ enforcement plan must be tailored to a district's experience and need, there are many things a prosecution team may wish to consider to determine high priority geographical areas and/or environmental subject areas for targeted enforcement.⁶⁴ Relevant considerations include (1) existing enforcement data; (2) facilities with extensive histories of noncompliance that have not adequately responded to administrative or civil enforcement and continue to violate environmental requirements; (3) contaminants, activities, and/or facilities tied to significant human health and environmental impacts; and (4) areas with damaged, depleted, and/or threatened natural resources and/or where pressures on natural resources are high and/or increasing. Once a prosecution team identifies areas of high priority and/or facilities with frequent, extensive, or egregious non-compliance, the team can use traditional investigative tools, such as compliance sweeps, sampling, surveillance, undercover operations, and other forms of enhanced monitoring, to detect, investigate, and prosecute environmental crimes.

D. Outreach/prevention

While enforcement addresses past harm, a primary goal of prosecution is deterrence.⁶⁵ Outreach serves that goal and, at the same time, invites the impacted community into the decision-making process.

In this multimedia age with a generally technologically savvy public, outreach efforts should take advantage of all messaging opportunities—from local, live presentations to recorded videos to written/electronically published material to social media platforms.

⁶³ MCGARRELL ET AL., *supra* note 38, at 1.

⁶⁴ Prosecutors also may wish to consult templates created in connection with the PSN program as a starting place. See BUREAU OF JUST. ASSIST., PROJECT SAFE NEIGHBORHOODS: STRATEGIC ACTION PLAN TEMPLATE.

⁶⁵ See 18 U.S.C. § 3553(a)(2)(B).

Creative use of all available opportunities helps ensure that relevant information reaches as many members of the community as possible. Excellent resources for navigating the public forum already reside within USAOs—the law enforcement coordinator and the community outreach specialist.

In 1981, Attorney General William French Smith directed every USA to establish a Law Enforcement Coordinating Committee (LECC) “to improve cooperation and coordination among Federal, State, and local law enforcement” in the district.⁶⁶ Each LECC has a law enforcement coordinator. Although functions may vary district to district, the law enforcement coordinator essentially serves as the principal advisor to the USA on state and local law enforcement issues and develops programs and training to facilitate cooperation and communication among all levels of law enforcement in the district.⁶⁷ In addition, districts may have additional staff members with experience facilitating engagement with the local communities. The existing relationships and expertise of each district’s law enforcement coordinator and other personnel with experience in community outreach will be invaluable in EJ outreach efforts.

With the help of the district’s law enforcement coordinator and others in the districts, EJ prosecution teams can draw on established connections with community groups and local new groups to publicize and schedule community meetings. EJ prosecution teams can also leverage press releases to acknowledge the community, to report crimes, and to reach low-income, minority, and environmentally overburdened communities.

Although outreach can be time consuming, it builds trust and a sense of inclusion in the process and was critical to the success of the PSN program.⁶⁸ Some potential avenues for outreach include (1) seeking input from community groups in areas experiencing environmental injustice about the forms of assistance, mitigation, restitution, and protection they are most interested in, or believe to be most helpful, and incorporating that feedback into best practices recommendations; (2) regularly meeting with individuals, community

⁶⁶ William French Smith, Att’y Gen., Law Enforcement Coordinating Committee, AG Order No. 951-81 (1981).

⁶⁷ *E.g.*, *Law Enforcement Coordinating Committee (LECC)*, DEP’T OF JUST. (updated Mar. 3, 2021), <https://www.justice.gov/usao-ednc/law-enforcement-coordinating-committee-lecc>.

⁶⁸ MCGARRELL ET AL., *supra* note 39, at 18–19.

and business leaders, EJ advocates, and others to discuss their concerns;⁶⁹ and (3) providing updates on prosecutions and efforts. Ideally, community partners will provide additional resources for the development of programs that reduce EJ crimes. Ultimately, the opportunity to participate and be heard ensures that affected communities feel part of the process, not simply bystanders.

In conjunction with outreach efforts, EJ Prosecutors should emphasize prevention. Unlike the SACSI projects, where prevention takes the form of mentoring for youth, job skills training and placement, or after-school activities, prevention of EJ crimes will stem from the specific and general deterrent effects of prosecution. Therefore, prosecutors should use all prosecution and sentencing tools to ensure an appropriate punishment within the applicable advisory guidelines range, prioritizing the prosecution of individuals, and then, should publish those results to the community.⁷⁰ In addition, EJ prosecution teams may wish to consider engaging with industry groups to encourage compliance and deter criminal conduct.

E. Accountability

This final and critical building block emphasizes experiential learning through accountability. When the Department implemented SACSI, it required USAOs to “conduct an empirical, objective evaluation of the implementation of the intervention and its effects in order to adjust the strategy to maximize its impact over time.”⁷¹ To that end, USAOs, initially, were mandated to “systematically record the challenges, successes, and failures of the process.”⁷² The idea being that, through experiential learning, prosecution efforts can be

⁶⁹ See 2014 Strategy, *supra* note 53, at 9.

⁷⁰ For a more detailed discussion, see Dighe & Pettus, *supra* note 1.

⁷¹ NAT’L INST. OF JUST., SOLICITATION: ASSESSMENT OF THE STRATEGIC APPROACHES TO COMMUNITY SAFETY INITIATIVE 2 (1998); see ROEHL ET AL., *supra* note 38, at 2 (One of the defining characteristics of the SACSI problem-solving model is the evaluation data and assessment activities, ongoing feedback to the core planning group, and improvement as needed.); see also MCGARRELL ET AL., *supra* note 39, at 13 (DOJ leadership focused on crime reduction and “[t]his accountability component was linked to strategic planning whereby PSR task forces, working with their local research partner, were asked to report levels of crime over time within targeted problems and/or targeted areas.”)

⁷² GROFF ET AL., *supra* note 62, at 3.

refined and improved to ensure that limited resources are being used effectively.

In the PSN context, USAs report on four areas:

(1) the nature of the partnerships with other federal agencies, state and local law enforcement, and the community; (2) the nature and prevalence of gun crime and violence in the community, the strategies adopted to address that gun crime and violence, and how the impact of those strategies is measured; (3) how the local gun crime initiative is being publicized; and (4) whether the partnership has taken advantage of training opportunities and/or conducted trainings at the local level.⁷³

The initial PSN national plan included a review of these reports by a team of individuals with expertise in each of the five PSN elements (partnerships, strategic plan, training, outreach, and accountability), who were to provide feedback to the districts on how to implement or improve their local programs.⁷⁴ Accountability at the local and national level, and transparency of that accounting to the public, ensures that limited resources are used efficiently and that the community has real-time access to law enforcement efforts. Similarly, any EJ initiative should incorporate national accountability through reporting and ultimately, be accountable to the affected communities.

III. Conclusion

Impartial justice to all its citizens remains “the guiding principle for the women and men of the U.S. Department of Justice.”⁷⁵

Environmental injustices and inequities exist in communities across America. By reducing the disproportionate health and environmental burdens borne by vulnerable communities through strategic prosecution of environmental crimes, federal prosecutors will ensure equal protection of all our citizens under environmental laws. The path towards equity requires federal prosecutors to provide the

⁷³ *Project Safe Neighborhoods: A Network to Make America's Communities Safer*, 50 U.S. ATT'YS BULL. no. 1, Jan. 2002, at 4.

⁷⁴ *Id.*

⁷⁵ *About the Department*, DEP'T OF JUST., <https://www.justice.gov/about> (last visited Sept. 24, 2021).

leadership among our partners, to empower communities by including them in the process, and to be accountable to the public.

About the Authors

Banumathi Rangarajan is a trial attorney at ECS. Before joining ECS, Ms. Rangarajan was an AUSA in the Eastern District of North Carolina where, for more than 23 years, she prosecuted complex white collar crimes, including environmental crimes, program fraud, and bribery/corruption matters, and also handled criminal appeals. Ms. Rangarajan began her career with the Department of Justice in 1994 through the Attorney General Honor's Program, joining the Environmental Defense Section after her federal judicial clerkship in the Eastern District of Michigan.

Leigh Rendé has enforced federal environmental laws for 15 years. She is a trial attorney at ECS. Before joining ECS, Ms. Rendé was an attorney in the Environmental Enforcement Section, enforcing environmental laws through affirmative civil litigation, where she also served as an EJ Coordinator for several years. Ms. Rendé began her legal career as an honors attorney fellow at EPA.

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Complex Environmental Crimes Prosecutions: Policy Considerations and the Merits of a Multi-District Approach

Gretchen C. F. Shappert
U.S. Attorney
District of the Virgin Islands

I. Introduction

One of the most powerful and effective tools for federal prosecutors investigating large-scale abuse of environmental laws is the ability to coordinate multi-district criminal prosecutions. Prosecuting individuals or corporate offenders operating in more than one judicial district can be an effective way to address the full panoply of environmental crimes. Multi-district prosecutions also enable the Department of Justice (Department) to address the complete scope of individual and corporate malfeasance and to craft comprehensive plea agreements and sentencing recommendations. At the same time, this potent option requires prosecutors to analyze their respective cases through a prism of Department guidance and policy and within the context of Department oversight.

Prosecutors should familiarize themselves with the relevant provisions of the Justice Manual,¹ including the Federal Principles of Prosecution,² the Federal Principles of Business Prosecutions,³ the *Petite Policy*,⁴ and other Department environmental crimes policy statements,⁵ in addition to the applicable federal statutes⁶ and case law. For Assistant United States Attorneys (AUSAs) unfamiliar with the Department's Environmental Crimes Section (ECS), the process can be daunting. This article identifies policy and guidance

¹ The Justice Manual, formerly the U.S. Attorney's Manual (USAM), was revised and renamed in 2018.

² JUSTICE MANUAL 9-27.000.

³ JUSTICE MANUAL 9-28.000.

⁴ JUSTICE MANUAL 9-2.031.

⁵ JUSTICE MANUAL 5.1.100, 5-11.000.

⁶ JUSTICE MANUAL 5-11.101, 5-11.102.

considerations and offers examples of some the key issues that arise in environmental crimes multi-district prosecutions. At the same time, this article attempts to rebut criticism that multi-district prosecutions are excessive or overbroad.⁷

II. Initiating an environmental crimes prosecution

When a U.S. Attorney's Office (USAO) opens a file for any of the enumerated pollution crimes, wildlife crimes, animal welfare crimes, or worker safety crimes listed in the Justice Manual,⁸ the case is entered into the Department's case tracking system and identified as "environmental." When a case or matter involves a potential-yet-unidentified environmental crime, a USAO has to notify ECS. These notification procedures enable ECS to better coordinate environmental crime investigations, including potential multi-district cases, and to better support prosecutors in the field.⁹ The Department's notification requirements continue throughout the life of the investigation and the prosecution.¹⁰

When ECS is not directly participating with the USAO in the investigation or prosecution, the USAO must notify ECS of all felony environmental crimes case resolutions, including plea agreements, within seven days of a finding of guilt or an entry of judgment, with two exceptions.¹¹ If the USAO intends to dismiss a felony violation of one of the delineated environmental crimes listed in the Justice Manual¹² without recourse to additional criminal charges or because of the defendant's death, the USAO must notify ECS no later than seven days before the dismissal. Similarly, in any case handled exclusively by ECS, the section shall provide equivalent notice to the USAO if a voluntary dismissal is contemplated.¹³ Case declinations

⁷ See e.g., John F. Cooney, *Multi-Jurisdictional and Successive Prosecution of Environmental Crimes: The Case for a Consistent Approach*, 96 J. OF CRIM. L. AND CRIMINOLOGY 435, 459–464 (2006) (critiquing Department multi-jurisdictional cases).

⁸ JUSTICE MANUAL 5-11.101.

⁹ JUSTICE MANUAL 5-11.104.

¹⁰ JUSTICE MANUAL 5-11.103, 5-11.108.

¹¹ JUSTICE MANUAL 5-11.108.

¹² JUSTICE MANUAL 5-11.101.

¹³ JUSTICE MANUAL 5-11.109.

are handled in a comparable fashion. When a USAO or ECS declines a felony environmental crimes case, the declining office promptly notifies the other of its decision and provides any substantive memorandum that was prepared regarding the declination. The Justice Manual does not limit the authority of ECS or a USAO to prosecute a case declined by the other.¹⁴

III. Continuing consultation and coordination once the investigation is initiated

Close coordination between ECS and the USAOs in both the investigative and the prosecution phases of environmental crimes cases is essential due to the complexity of these prosecutions. Because many environmental crimes are subject to criminal, civil, and administrative sanctions, parallel proceedings are frequent. In those cases, prosecutors must use caution to avoid allegations of improperly releasing grand jury materials or abusing civil process. Hence, consulting with ECS on these issues is strongly recommended.¹⁵

State and local law enforcement agencies have their own priorities involving environmental crimes, which may overlap, support, or diverge from comparable federal concerns. The optimal situation is for state and federal prosecutors to coordinate their efforts and keep each other informed. Depending upon the circumstances, the state's response may vindicate federal concerns or leave compelling federal interests less than fully protected. Discussions with ECS may help representatives in the USAO decide whether additional federal proceedings are warranted.¹⁶

Two other points cut strongly in favor of regularly consulting with ECS in developing effective environmental crimes prosecutions. The first is the variety of the potential defendants: they may be individuals or corporations. Special care is required to ensure that individual and corporate defendants are investigated and prosecuted consistent with Department policy for business organizations.¹⁷ This

¹⁴ JUSTICE MANUAL 5-11.110.

¹⁵ JUSTICE MANUAL 5-11.112, 1-12.000.

¹⁶ JUSTICE MANUAL 5-11.113.

¹⁷ JUSTICE MANUAL 5-11.114 (citing Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 65 Fed. Reg. 19618 (Apr. 11, 2000)); *Factors in Decisions on Criminal Prosecutions for Environmental*

includes considering any voluntary disclosure or cooperation provided by the defendant(s).¹⁸

Second, resolving multi-district environmental crimes cases may involve defense requests for so-called “global settlements,” which are intended to release a defendant from both civil and criminal liability. To do so, express approval from the Assistant Attorney General of the Environment and Natural Resources Division is required, and approval depends on an assessment of all relevant circumstances. Global settlements can only be initiated by the defendant. Criminal plea agreements must be handled by criminal prosecutors and civil settlements by civil attorneys. Each part of the settlement must separately satisfy applicable Department criminal and civil criteria, including the Principles of Federal Prosecution and the Principles of Federal Prosecution of Business Organizations. Each agency or department with authority to concur in the civil settlement must concur. The criminal plea agreement and the civil settlement must be memorialized in separate documents. Finally, a defendant cannot trade civil relief for a reduction in criminal penalties.¹⁹

IV. Effective multi-district environmental crimes prosecutions

Over the years, ECS and the USAOs have successfully prosecuted multi-district environmental crimes involving unique facts, complex legal issues, and diverse criminal conduct. Many of these cases are extraordinarily complex, involving individuals, corporate leadership and managers, large corporations, and multi-national conglomerates. Identifying the full scope of criminal conduct and fashioning

Violations in the Context of Significant Voluntary Compliance or Disclosure Efforts by the Violator, DEP’T OF JUST., <https://www.justice.gov/enrd/factors-decisions-criminal-prosecutions-environmental-violations-context-significant-voluntary> (updated Dec. 8, 2020); see also JUSTICE MANUAL 1-12.100. For an analysis of multi-jurisdictional white collar cases and the Corrupt Practices Act, see Daniel Kahn, *Responding to the Upward Trend of Multijurisdictional Cases: Problems and Solutions*, DOJ J. OF FED. L. & Prac., no. 5, 2018 at 125.

¹⁸ *Id.* at 135.

¹⁹ DEP’T OF JUST., ENV’T AND NAT. RES. DIV., GLOBAL SETTLEMENT POLICY (Dec. 20, 2016) (DIRECTIVE NO. 2016-11).

appropriate remedies are fundamental issues in any successful multi-district prosecution.²⁰

Three discrete examples of how the Department has effectively addressed these issues will underscore the many reasons why prosecutors should consider a multi-district approach to persistent criminal conduct that violates environmental law.

A. The Duke Energy Corporation prosecution and the Alternative Fines Act

One of the most comprehensive multi-district environmental crimes prosecutions in recent memory is the prosecution of three subsidiaries of North Carolina-based Duke Energy Corporation, the largest utility in the United States, for nine misdemeanor violations of the Clean Water Act (CWA) at facilities across the North Carolina and for aiding and abetting.²¹ The case was prosecuted by all three North Carolina USAOs, in conjunction with ECS, and the resulting plea and joint factual statement consolidated offenses from each of the three judicial districts.²²

The Duke subsidiaries were placed on probation for five years and agreed to pay a \$68 million criminal fine and spend \$34 million on environmental and land conservation initiatives in North Carolina and Virginia. Duke Energy Carolinas and Duke Energy Progress agreed to certify that they reserved sufficient funds to meet legal obligations regarding coal ash impoundments within North Carolina, obligations that were expected to be approximately \$3.4 billion. The companies agreed to excavate and close coal ash impoundments at four North Carolina facilities. As a special condition of the

²⁰ JUSTICE MANUAL 1-12.100.

²¹ 33 U.S.C. §§ 1311, 1319, 1342; 18 U.S.C. § 2.

²² See e.g., Joint Factual Statement, *United States v. Duke Energy Bus. Servs., LLC*, No. 15-CR-67 (E.D.N.C. May 14, 2015), ECF No. 60; *Id.* at app.; Memorandum of Plea Agreement, *Duke Energy Bus. Servs., LLC*, No. 15-CR-67, ECF No. 57 [hereinafter *Duke Energy Bus. Servs., LLC, Plea Agreement*]; Memorandum of Plea Agreement, *Duke Energy Carolinas, LLC*, No. 15-CR-67, ECF No. 58 [hereinafter *Duke Energy Carolinas, LLC, Plea Agreement*]; Memorandum of Plea Agreement, *Duke Energy Progress, Inc.*, No. 15-CR-67, ECF No. 59 [hereinafter *Duke Energy Progress, Inc., Plea Agreement*]; see Press Release, Department of Justice Office of Public Affairs, *Duke Energy Subsidiaries Plead Guilty and Sentenced to Pay \$ 102 Million for Clean Water Act Crimes* (May 14, 2015).

probationary sentence, Duke also agreed to fund a court-appointed monitor (CAM) to oversee implementation of both state and nationwide comprehensive compliance programs and to establish a schedule for environmental audits of the defendant's coal ash impoundments and to oversee the bromide claims process. The CAM would also oversee implementation of environmental compliance plans and comprehensive training programs for Duke employees.²³

The scope and specificity of the plea agreement and the subsequent judgment in the Duke Energy prosecution are a direct result of the thoroughness of the underlying investigation and the careful coordination between federal and state law enforcement, in conjunction with ECS and the three USAOs. Also of note is the astonishing speed with which law enforcement and prosecutors worked to resolve the highly complex, multi-district case—from the day coal ash was released into the Dan River to the filing of bills of information in the three North Carolina judicial districts was just over one year, and sentencing of the corporate defendants occurred less than three months later.²⁴

Environmental issues created by the Duke Energy subsidiaries first came to public awareness on February 2, 2014, when an unauthorized release of coal ash into the Dan River occurred at the Dan River Steam Station (Duke Energy), north of Eden, North Carolina, creating what became known as the Eden Ash Spill Site.²⁵ “The coal ash . . . released from the site contained unburned carbon and various

²³ Duke Energy Bus. Servs., LLC, Plea Agreement, *supra* note 22; Duke Energy Carolinas, LLC, Plea Agreement, *supra* note 22; Duke Energy Progress, Inc., Plea agreement, *supra* note 22; *see also* Exhibit A to the Judgment: Additional Special Conditions of Probation, *Duke Energy Progress, Inc.*, No. 15-CR-67, ECF No. 65 [hereinafter Special Conditions of Probation].

²⁴ Notice of Related Case, *United States v. Duke Energy Bus. Servs., LLC*, No. 15-cr-62 (E.D.N.C. Feb. 20, 2015), ECF No. 2; Joint Factual Statement, *supra* note 22; Duke Energy Bus. Servs., LLC, Plea Agreement, *supra* note 22; Duke Energy Carolinas, LLC, Plea Agreement, *supra* note 22; Duke Energy Progress, Inc., Plea Agreement, *supra* note 22.

²⁵ *Case Summary: Duke Energy Agrees to \$3 Million Cleanup for Coal Ash Release in the Dan River*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/case-summary-duke-energy-agrees-3-million-cleanup-coal-ash-release-dan-river#site> (updated Oct. 27, 2020) [hereinafter EPA Case Summary: Duke Energy]; Joint Factual Statement, *supra* note 22, at 27–29.

metals including arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc,” and the Eden Ash Spill Site extended 70 miles downstream.²⁶ The Dan River “is a source [for] drinking water [for] . . . North Carolina and Virginia” residents, provides water for livestock and irrigation, and “is home to two identified endangered species.”²⁷

The subsequent investigation revealed that the Duke subsidiaries failed to properly maintain and inspect two stormwater pipes located beneath the primary coal ash basin at the Dan River Steam Station. On February 2, 2014, one of the pipes failed, allowing for the “discharge of approximately 27 million gallons of coal [and] ash wastewater and between 30,000 and 39,000 tons of coal ash into the Dan River.”²⁸ The Duke subsidiaries also failed to take reasonable steps to minimize or prevent the discharge of coal ash into the Dan River and failed to maintain the coal ash basins, which continued to store settled ash and particulate material for years or decades.²⁹

At the time of the Eden Ash Spill, Duke operated facilities with 14 coal ash basins in North Carolina. Federal and state investigations revealed that “[e]ach of [these] facilities . . . with coal ash basins sought and received permits to discharge treated coal ash wastewater through permitted outfalls into the waters of the United States.”³⁰ At some of these facilities, however, the Duke subsidiaries failed to maintain treatment system equipment and related appurtenances, allowing for the negligent discharge of coal ash basin pollutants into the waters of the United States.³¹ The negotiated guilty pleas and 62-page joint factual statement summarize the consequences of Duke’s criminal conduct.³²

²⁶ EPA Case Summary: Duke Energy, *supra* note 25.

²⁷ *Id.*

²⁸ Joint Factual Statement, *supra* note 22.

²⁹ *Id.* at 8, 27. “Coal ash has not been defined . . . as a ‘hazardous substance’ or ‘hazardous waste’ under federal law” *Id.* at 7. Conversely, “constituents of coal ash may be hazardous in sufficient quantities or concentrations.” *Id.* at 7.

³⁰ *Id.* at 8.

³¹ *Id.* at 2, 5–6, 8, 12, 27, 35.

³² Duke Energy Bus. Servs., LLC, Plea Agreement, *supra* note 22; Duke Energy Carolinas, LLC, Plea Agreement, *supra* note 22; Duke Energy Progress, Inc., Plea Agreement, *supra* note 22; Joint Factual Statement, *supra* note 22.

Resolving the case required imposing appropriate criminal fines; developing and implementing a comprehensive nationwide environmental compliance plan and a comprehensive statewide environmental compliance plan (ECP-NC); creating a comprehensive environmental training program for Duke employees; cooperating with the bromide remediation claims process; community service payments to the National Fish and Wildlife Foundation; payments to an authorized wetlands bank or conservation trust; publishing an apology in national and North Carolina newspapers; developing plans to ensure that any new, expanded, or reopened coal ash or coal ash wastewater impoundments would be lined to prevent unauthorized discharges; and retaining a CAM to ensure compliance.³³

One of the most consequential provisions of the negotiated Duke Energy plea and subsequent judgment was the application of the Alternative Fines Act (AFA). The AFA provides that, “[i]f any person derives pecuniary gain from the offense, or if the offense results in pecuniary loss to a person other than the defendant, the defendant may be fined not more than the greater of twice the gross gain or twice the gross loss.”³⁴ “Gross gain” means “any additional before-tax profit to the defendant that derives from the relevant conduct of the offense.”³⁵ The AFA’s causation requirement “mandates[s] that gain or

³³ Duke Energy Progress, Inc, Plea Agreement, *supra* note 22; Special Conditions of Probation, *supra* note 23.

³⁴ 18 U.S.C. § 3571(d).

³⁵ *United States v. Sanford Ltd.*, 878 F. Supp. 2d 137, 150 (D.D.C. 2012). For a discussion of the meaning of “gross gain” and “derived from,” see *Sanford Ltd.*, 878 F. Supp. 2d at 148–52. The *Sanford* court noted that there is a variety of interpretations among courts regarding the precise meaning of “gross gain” in § 3571(d): “there is a difference of opinion as to whether it includes only ‘net’ gains, i.e., profits, whether it includes all revenues derived from an offense without deducting costs and taxes.” *Id.* at 149; *United States v. Wilder*, 15 F.3d 1292, 1301 (5th Cir. 1994); *United States v. Bader*, No. 07-cr-00338, 2010 WL 2681707, at *2 (D. Colo. July 1, 2010); *United States v. Foote*, No. CR.A. 00-20091-01, 2003 WL 22466158, at *7 (D. Kan. July 31, 2003); *S.E.C. v. Bilzerian*, 814 F. Supp. 116, 120 (D.D.C. 1993). The *Sanford* court also noted that “[a]t least one court . . . approved of a definition of ‘gross gain’ that was neither gross revenue nor gross profit.” *Sanford Ltd.*, 878 F. Supp. 2d at 150. The *Stanford Ltd.* court then referenced *United States v. BP Products N. Am. Inc.*, 610 F. Supp. 2d 655, 660 (S.D. Tex. 2009). For further discussion of the complexity of issues courts must address when assessing

loss be both factually and proximately caused by the defendant's acts."³⁶ Proximate causation serves "to preclude liability in situations where the causal link between conduct and result is so attenuated that the consequence is more aptly described as mere fortuity."³⁷

The AFA was intended to fill a gap in the types of criminal fines courts can impose.³⁸ The House Judiciary Committee Report accompanying the AFA's predecessor statute, 18 U.S.C. § 3623(c)(1), explains that the provision was "intended to enable federal courts to impose fines that will prevent convicted offenders from profiting from their wrongdoing."³⁹ The AFA addresses situations where the potential maximum criminal fine per count would allow the defendant to pay the fine and still profit from criminal conduct. Likewise, the AFA applies in situations where the defendant's criminal actions have created a pecuniary loss to one or more persons. An enhanced fine, however, is unavailable if it "would unduly complicate or prolong the sentencing process."⁴⁰

gross gain, see *United States v. CITGO Petroleum Corp.*, 908 F. Supp. 2d 812, 815–17 (S.D. Tex. 2012).

³⁶ *BP Products N. Am., Inc.*, 610 F. Supp. 2d at 688 (finding under the AFA, appropriate fine imposed on corporate defendant for violation of the Clean Air Act arising from refinery explosion restricted to pecuniary losses or gains; nonpecuniary factors such as victims' pain and suffering, mental anguish, or loss of consortium could not be considered); see *United States v. Spinney*, 795 F.2d 1410, 1415 (9th Cir. 1986) (holding "[c]ausation in criminal law has two requirements: cause in fact and proximate cause"). Consider too, that "but for" causation requires proof "that the harm would not have occurred in the absence of—that is, but for—the defendant's conduct." *Burrage v. United States*, 571 U.S. 204, 211 (2014) (internal quotations omitted).

³⁷ *United States v. Paroline*, 572 U.S. 434, 445 (2014) (holding proximate cause requirement applied to all losses described in statute requiring award of restitution for certain federal criminal offenses). See also *BP Products N. Am., Inc.*, 610 F. Supp. 2d at 688 (holding "proximate causation in a criminal case presents a higher threshold for proof than proximate causation is a civil tort case.")

³⁸ *Sanford Ltd.*, 878 F. Supp. 2d at 148–49; Def.'s Mot. To Dismiss the Alternative Fines Acts Allegations at 8, *United States v. Pac. Gas & Elec. Co.*, No. 14-cr-175 (N.D. Cal. Sept. 7, 2015), ECF No. 126.

³⁹ H.R. Rep. No. 98-906, at 5549 (1984) (discussing 18 U.S.C. § 3623(c)); see *Sanford Ltd.*, 878 F. Supp. 2d at 148–49.

⁴⁰ 18 U.S.C. § 3571(d). For a discussion of the meaning of "undue complication," see *Sanford*, 878 F. Supp. 2d at 152–53 (D.D.C. 2012). See also

An alternative fine must be based on damages caused by the “offense of conviction” and not on “losses stemming from all conduct attributable to the defendant.”⁴¹ Hence, prosecutors must be prepared to establish that the counts of the conviction, not relevant conduct, proximately caused the gains or losses upon which an alternative fine is based. Finally, any fact that the trial court uses to increase a fine beyond the statutory maximum must have been found by the jury beyond a reasonable doubt, which is discussed below.⁴²

In the Duke Energy case, negotiated plea agreements obviated the need for a jury determination of underlying supporting facts. The plea agreements with Duke subsidiaries Duke Energy Carolinas, LLC, and Duke Energy Progress, Inc., expressly acknowledged the applicability of the AFA and stipulated as to the total amount of criminal fines the defendants were paying.⁴³ The plea agreement with Duke Energy Business Services provided that, in light of the two Duke subsidiaries’ agreed upon total criminal fine of \$68 million, no additional fine would be imposed upon the defendant.⁴⁴

Before the Duke Energy case, the leading example of a negotiated plea that applied the AFA was *United States v. BP Products North America, Inc.*, which imposed the largest fine against a single corporation under the Clean Air Act to date and the largest criminal fine imposed for a fatal industrial accident.⁴⁵ In that case, the district court was asked to accept a plea agreement negotiated between the government and the defendant arising from a Clean Air Act violation that caused an oil refinery explosion, killing 15 people and injuring at

H.R. Rep. No. 98-906, at 5550 (1984) (referencing 18 U.S.C. § 3623(c), predecessor to 18 U.S.C. § 3571(d), saying, “if determining the amount of the defendant’s gain were to require a protracted hearing that would last longer than the trial, the judge could decline to base the fine on the defendant’s gain. The court’s determination as to whether imposing a fine based on defendant’s gain or victim’s loss is discretionary, and the committee is confident that federal judges will not abuse that discretion.”)

⁴¹ *BP Products N. Am., Inc.*, 610 F. Supp. 2d at 688 (quoting *Hughey v. United States*, 495 U.S. 411, 418 (1990)).

⁴² See *S. Union Co. v. United States*, 567 U.S. 343, 350, 360 (2012)

⁴³ Duke Energy Bus. Servs., LLC, Plea Agreement, *supra* note 22; Duke Energy Carolinas, LLC, Plea Agreement, *supra* note 22; Duke Energy Progress, Inc., Plea Agreement, *supra* note 22.

⁴⁴ Duke Energy Bus. Servs., LLC, Plea Agreement, *supra* note 22.

⁴⁵ *BP Products N. Am., Inc.*, 610 F. Supp. 2d at 660.

least 170 workers, over the objections of victims, who argued for a much higher fine.⁴⁶ The court’s detailed analysis of the application of the AFA emphasizes that “[a] court need not—and should not—calculate a fine under [section] 3571(d) if calculating the gain or loss ‘would unduly complicate or prolong the sentencing process.’”⁴⁷

As part of its review of the proposed plea agreement, BP Products and the government argued that, if the case were to go to trial, the court would conceivably conclude that calculating the pecuniary gain and loss resulting from the offense would unduly complicate and prolong the sentencing process. Hence, BP Products and the government argued that the court would likely forgo applying the AFA, limiting the fine in this case to \$500,000.⁴⁸ Per the terms of the proposed plea agreement, the parties stipulated to a \$50 million fine and three years of probation.⁴⁹ The \$50 million fine represented a reasonable estimate of twice BP Product’s gross pecuniary gain derived from the Clean Air Act violation to which it pleaded guilty.⁵⁰ The victims’ objections to the terms of the plea agreement asserted that the fine was “based on too low a gain amount” and was “not based on the victims’ losses.”⁵¹ The court, however, determined that the victims’ information was “unreliable, incomplete, and contradicted by other documents and data.”⁵² In reaching its decision to accept the plea agreement, the court took into account “the exigencies of plea bargaining from the government’s point of view” and the “limited

⁴⁶ *Id.* at 660–62.

⁴⁷ *BP Products N. Am., Inc.*, 610 F. Supp. 2d at 690 (quoting 18 U.S.C. § 3571(d)). The court also noted that under the *Apprendi* rule, the government might have to prove the amount of gain or loss caused by the offense to a jury. *Id.* at 684–87 (citing *Apprendi v. New Jersey*, 530 U.S. 466, 490 (2000)). Less than three months after the court accepted the plea agreement in *BP Products N. Am. Inc.*, the Supreme Court held that the *Apprendi* rule does apply to the imposition of criminal fines because any fact that increases a criminal penalty beyond the prescribed statutory maximum must be submitted to a jury and proven beyond a reasonable doubt. *S. Union Co.*, 567 U.S. at 350, 360.

⁴⁸ *BP Products N. Am. Inc.*, 878 F. Supp. 2d at 690.

⁴⁹ *Id.* at 660.

⁵⁰ *Id.* at 695–96.

⁵¹ *Id.* at 707.

⁵² *Id.* at 706.

resources and uncertainty” of the outcome.⁵³ Thus, the court concluded “that the proposed plea [was] a reasonable disposition given the available alternatives, the risks they present, and the limits inherent in the statutes that the government can use to obtain and punish a felony conviction for conduct leading to an industrial accident.”⁵⁴

A final aspect of the AFA that prosecutors must consider when assessing complex and multi-district prosecutions is the application of the *Apprendi* rule, if these cases go to trial. The leading case on what a jury must determine for the AFA to apply is the Supreme Court case *Southern Union Co. v. United States*. The defendant in that case was charged and convicted of knowingly storing hazardous waste without a permit, a violation of the Resource Conservation and Recovery Act (RCRA), between September 19, 2002, and October 19, 2004.⁵⁵ Violations of the RCRA are punishable by a fine of not more than \$50,000 per day for each day of violation.⁵⁶

Preparing for sentencing, the federal probation office calculated a maximum fine of \$38.1 million, based on the conclusion that Southern Union violated the RCRA for each of the 762 days during the period alleged in the indictment.⁵⁷ Southern Union countered that imposing a fine greater than the one-day penalty of \$50,000 would be unconstitutional under *Apprendi v. New Jersey* because, based upon the jury’s verdict and the court’s instructions, the only violation that the jury necessarily found was for one day.⁵⁸ The government, in turn, acknowledged that the jury was not asked to specify the duration of the offense, but argued that the *Apprendi* rule did not apply to criminal fines. The district court disagreed and held that *Apprendi* applied.⁵⁹ The First Circuit reversed,⁶⁰ and the Supreme Court granted certiorari.⁶¹

⁵³ *Id.* at 729–30 (quoting *United States v. Bundy*, 359 F. Supp. 2d 535, 538 (W.D. Va. 2005)).

⁵⁴ *Id.* at 730.

⁵⁵ *S. Union Co.*, 567 U.S. at 346–47.

⁵⁶ 42 U.S.C. § 6928(d).

⁵⁷ *S. Union Co.*, 567 U.S. at 347.

⁵⁸ *Id.* (citing *Apprendi v. New Jersey*, 530 U.S. 466 (2000)).

⁵⁹ *United States v. S. Union Co.*, 643 F. Supp. 2d 201 (D.R.I. 2009).

⁶⁰ *United States v. S. Union Co.*, 630 F.3d 17 (1st Cir. 2010).

⁶¹ *S. Union Co. v. United States*, 565 U.S. 1057, 1057 (2011).

In its analysis, the Supreme Court noted that, where a fine is so insubstantial that the underlying offense is considered petty, there is no Sixth Amendment right to a jury trial, and the *Apprendi* rule does not apply. The AFA, however, “has been used to obtain substantial judgments against organizational defendants.”⁶² The Court stressed that the RCRA subjected Southern Union to a maximum fine of \$50,000 for each day of violation, but no jury made a factual determination as to the number of days over which the violation was committed. According to the Court, “This is exactly what *Apprendi* guards against: judicial factfinding that enlarges the maximum punishment a defendant faces beyond what the jury’s verdict or the defendant’s admissions allow.”⁶³

Clearly, the Supreme Court’s application of the *Apprendi* rule to the imposition of criminal fines has significant consequences for prosecutors evaluating complex prosecutions against corporate defendants. As noted above, implementing the AFA requires prosecutors to identify the damages or losses based on the offense of conviction. Moreover, it requires prosecutors to identify any pecuniary gain to the defendant and loss to a person other than the defendant while, at the same time, ensuring that the fines determination does not unduly complicate or prolong the sentencing process. There is always a risk that, when considering application of the AFA, the trial judge may conclude that it will unduly complicate the trial, the sentencing process, or both, leaving the parties with only the fines provided by applicable statutes.⁶⁴ Indeed, trial courts have not

⁶² *S. Union Co.*, 567 U.S. at 351 (citing cases).

⁶³ *Id.* at 352.

⁶⁴ An excellent example of how courts weigh the sheer complexity of application of the Alternative Fines Act when considering whether to accept a negotiated plea is *United States v. BP Expl. & Prod., Inc.*, No. 12-cr-292 (E.D. La. Nov. 15, 2012) (defendant agreed to plea agreement with fines of \$1,256,000,000 and payment of \$350,000,000 to the National Academy of Sciences and \$2,394,000,000 to the National Fish and Wildlife Foundation (NFWF) for damages to natural resources). In explaining its reasons for accepting the negotiated plea, the court stated that it was “very important” to its decision that there was a “significant risk” that absent a negotiated plea, the government would be unable to recover more than \$8.19 million in fines from BP. The court explained that applicability of the Alternative Fines Act “would not be a sure thing.” The sheer complexity of the case would require the court to determine whether application of the Act would unduly

hesitated to exercise their authority to preclude the government from seeking enhanced fines under the AFA.⁶⁵

In both the Duke Energy multi-district prosecution and the BP Products prosecution, the looming prospect of complex jury factfinding and protracted sentencing proceedings weighed heavily in favor of negotiated plea agreements. Agreed-upon fines ensured that victims' rights were vindicated and environmental crimes would be remedied. In sum, applying the AFA may better serve the interests of negotiated pleas than the interests of a criminal case tried to a jury because of the significant risk that a trial judge may deem the AFA inoperable, thereby limiting the potential criminal fine.

B. Prosecuting a corporate recidivist in multiple venues: the McWane, Inc., prosecutions

Many environmental crime prosecutions are the culmination of long-term investigations conducted in relative obscurity. Others emerge in response to investigative journalism and reporting that brings to light a long history of corporate malfeasance. The McWane, Inc., prosecutions fall into the latter category. Over an eight-day period in January 2003, New York Times investigative reporters David Barstow and Lowell Bergman published four groundbreaking, Pulitzer Prize-winning articles that described environmental and worker safety crimes committed by employees of one of the largest manufacturers of

complicate or prolong the sentencing proceeding, thereby making the Act inapplicable. Reasons for Accepting Plea Agreement at 7–8, *BP Expl. & Prod., Inc.*, No. 12-cr-292, ECF No. 65.

⁶⁵ See e.g., *United States v. CITGO Petroleum Corp.*, 908 F. Supp. 2d 812, 818–19 (S.D. Tex. 2012) (holding it was not appropriate to empanel sentencing jury to determine operator's gross pecuniary gain arising from operation of two oil tanks in violation of the Clean Air Act as the evidence presentation "would unduly complicate or prolog sentencing process"); see also *United States v. Gibson*, 409 F.3d 325, 342 (6th Cir. 2005) (holding district court did not abuse its discretion refusing to hear evidence of pecuniary gain in sentencing defendant, operator of coal mine, for violations of the Mine Safety and Health Act (MSHA); district court recognized that defendant had profited to some extent and took that gain into account in deciding whether to depart upward from the base fine, and refused to hear the evidence because it believed it would prolong sentencing; district court agreed with the recommendation of U.S. Probation and Pretrial Services that "there's no defensible methodology to use in calculating the gain with any reasonable certainty.").

cast-iron sewer and water pipe in the world.⁶⁶ Also that month, PBS Frontline aired “The McWane Story,” which detailed the same corporate misconduct and negligence described by the New York Times.⁶⁷

Reporters from the New York Times reported that McWane had “by far the worst safety record in an industry that, for three of the last four years, has had the highest injury rate the nation.”⁶⁸ The corporation was cited for more than 400 safety violations since 1995, four times more than its six major competitors combined. McWane also had a lengthy history of environmental violations—at least 450 violations of pollution rules and emissions limits since 1995. There were also more than 4,600 injuries at McWane plants between 1995 and 2003.⁶⁹ According to the reporters, environmental regulators stated that McWane plants were among the worst polluters in New

⁶⁶ David Barstow & Lowell Bergman, *At a Texas Foundry, An Indifference to Life*, N.Y. TIMES (Jan. 6, 2003), <https://www.nytimes.com/2003/01/08/us/at-a-texas-foundry-an-indifference-to-life.html>; David Barstow & Lowell Bergman, *A Family's Fortune, a Legacy of Blood and Tears*, N.Y. TIMES (Jan. 9, 2003), <https://www.nytimes.com/2003/01/09/us/a-family-s-fortune-a-legacy-of-blood-and-tears.html>; David Barstow & Lowell Bergman, *Deaths on the Job, Slaps on the Wrist*, N.Y. TIMES (Jan. 10, 2003), <https://www.nytimes.com/2003/01/10/us/deaths-on-the-job-slaps-on-the-wrist.html>; David Barstow & Lowell Bergman, *2 at Hazardous Foundry Tell of Events Costing One His Legs*, N.Y. TIMES (Jan. 16, 2003), <https://www.nytimes.com/2003/01/16/us/2-at-hazardous-foundry-tell-of-events-costing-one-his-legs.html>; *The 2004 Pulitzer Prize Winner in Public Service: The New York Times*, THE PULITZER PRIZE, <https://www.pulitzer.org/winners/new-york-times-5> (last visited Oct. 29, 2021).

⁶⁷ James Sandler et al., *The McWane Prosecutions*, FRONTLINE (Feb. 5, 2008), <https://www.pbs.org/wgbh/pages/frontline/mcwane/etc/prosecutions.html>. The Canadian Broadcasting Corporation program “The Fifth Estate” also featured a story on McWane’s environmental violations. David Barstow & Lowell Bergman, *A Family's Fortune, a Legacy of Blood and Tears*, *supra* note 66.

⁶⁸ David Barstow & Lowell Bergman, *A Family's Fortune, a Legacy of Blood and Tears*, *supra* note 66.

⁶⁹ David Barstow & Lowell Bergman, *Pipe Maker is Fined Over Safety Violations*, N.Y. TIMES (Apr. 15, 2003), <https://www.nytimes.com/2003/04/15/us/pipe-maker-is-fined-over-safety-violations.html>.

Jersey, Alabama, and Texas.⁷⁰ The Environmental Protection Agency (EPA) designated five plants—in Alabama, New Jersey, Utah, and Texas—“high priority” violators. A sixth in New York had a history of what the reporters described as “reckless criminal conduct.”⁷¹

Based upon their investigation, the reporters surmised that McWane managers viewed the burden of regulatory fines as far less onerous than complying with safety and environmental regulations.⁷²

⁷⁰ *Supra* note 66.

⁷¹ David Barstow and Lowell Bergman, *Deaths on the Job, Slaps on the Wrist*, *supra* note 66. The New York Times reporters described McWane’s Kennedy Valve facility in Elmira, New York, where a worker at the plant, Frank J. Wagner, was killed in January of 1995 when an oven exploded near where he was standing. The company pleaded guilty to a state hazardous waste felony and agreed to pay \$500,000 in donations and fines, but the charge did not hold the company accountable for Wagner’s death. *Id.* In May of 2007, Kennedy Valve also pleaded guilty to two state counts of violating environmental law after the New York Attorney General accused the company of illegally dumping toxic waste. The company was ordered to pay a fine of \$1.5 million to fund a Chemung County-based program to reduce childhood lead exposure. Sandler, et al., *The McWane Prosecutions*, *supra* note 67. The former Kennedy Valve plant engineer, Ronald Wagner, also pleaded guilty to a related misdemeanor offense. *See* Press Release, N.Y. State Off. of the Att’y Gen., Kennedy Valve and Former Plant Engineer Plead Guilty to Environmental Crimes (May 10, 2007); *see generally* James Sandler et al., *The McWane Prosecutions*, *supra* note 67.

⁷² Barstow & Bergman, *Deaths on the Job, Slaps on the Wrist*, *supra* note 66. The New York Times reporters continued their coverage of McWane Inc. as the Occupational Safety and Health Administration (OSHA) and the Department of Justice initiated a series of investigations. *See* Barstow & Bergman, *Pipe Maker is Fined Over Safety Violations*, *supra* note 69; David Barstow & Lowell Bergman, *Criminal Inquiry Under Way at Large Pipe Manufacturer*, N.Y. TIMES (May 15, 2003), <https://www.nytimes.com/2003/05/15/us/criminal-inquiry-under-way-at-large-pipe-manufacturer.html>; David Barstow & Lowell Bergman, *U.S. Brings New Set of Charges Against Pipe Manufacturer*, N.Y. TIMES (May 26, 2004), <https://www.nytimes.com/2004/05/26/us/us-brings-new-set-of-charges-against-pipe-manufacturer.html>; David Barstow & Lowell Bergman, *Foundry Pleads Guilty to Environmental Crimes*, N.Y. TIMES (March 23, 2005), <https://www.nytimes.com/2005/03/23/us/foundry-pleads-guilty-to-environmental-crimes.html>; David Barstow & Lowell Bergman, *With Little Fanfare, a New Effort to Prosecute Employers That Flout Safety Laws*, N.Y. TIMES (May 26, 2005), <https://www.nytimes.com/2005/05/02/politics/with->

The reporters noted that “regulators and law enforcement officials have never joined forces to piece this record together, never taken a coordinated approach to end patterns of transgression. Their responses, piecemeal and disjointed, bring into sharp relief weaknesses in government’s ability to take on corporations with operations spread far and wide.”⁷³

If the Duke Energy prosecution demonstrates how a coordinated multi-district investigation of similar CWA violations can be resolved in a plea agreement across three contiguous judicial districts, the McWane prosecutions demonstrate how ECS, in conjunction with its USAO partners, can vindicate federal interests involving a plethora of environmental and worker safety violations committed by a corporate entity and its managers that are (initially) unwilling to acknowledge guilt. Equally important, as this article describes, is that the successful prosecution of McWane across five judicial districts was followed by a civil settlement that effectively resolved over 400 violations of federal and state environmental laws.⁷⁴ Finally, as discussed below, commentators have concluded that one of the McWane prosecutions’ important consequences was a significant shift in corporate culture that has paid dividends for worker safety and protecting the environment.⁷⁵

The Department initiated five criminal prosecutions of McWane between December 2003 and November 2005 in New Jersey, Alabama, Texas, and Utah.⁷⁶ Two of those cases went to trial in 2005—the first

little-fanfare-a-new-effort-to-prosecute-employers-that-flout.html; Kyle Whitmire, *Pipe Maker Found Guilty of Violating Pollution Law*, N.Y. TIMES (June 11, 2005), <https://www.nytimes.com/2005/06/11/us/pipe-maker-found-guilty-of-violating-pollution-law.html>.

⁷³ Barstow & Bergman, *Deaths on the Job, Slaps on the Wrist*, *supra* note 66.

⁷⁴ Complaint, *United States v. McWane, Inc.*, No. 10-cv-1902 (N.D. Ala. July 15, 2010), ECF No. 1; Memorandum of Law in Support of Unopposed Motion to Enter Proposed Consent Decree, *McWane, Inc.*, No. 10-cv-1902, ECF No. 3.

⁷⁵ David M. Uhlmann, *The Pendulum Swings: Reconsidering Corporate Criminal Prosecution*, 49 U.C. DAVIS L. REV. 1235, 1256–57 (2016).

⁷⁶ See *United States v. Maury*, 695 F.3d 227, 227 (3d Cir. 2012) (Atlantic States Cast Iron Pipe, Phillipsburg, N.J.); *United States v. McWane, Inc. (McWane II)*, No. 04-cr-199 (N.D. Ala. Dec. 13, 2005) (McWane Cast Iron Pipe, Birmingham, A.L.); *United States v. Tyler Pipe Co.*, No. 05-cr-29 (E.D. Tex. Apr. 12, 2005) (Tyler Pipe, Tyler, T.X.); *United States v. Union Foundry Co.*, No. 05-cr-299 (N.D. Ala. Sept. 7, 2005) (Union Foundry, Anniston, A.L.);

in the Northern District of Alabama, McWane's corporate headquarters, and the second in New Jersey. Both cases resulted in convictions of the corporation and corporate officials, with four of the New Jersey defendants receiving active prison sentences and the Alabama defendants receiving probationary sentences.⁷⁷ The Alabama trial lasted five weeks,⁷⁸ and the New Jersey trial lasted seven

United States v. McWane Inc. (*McWane III*), No. 05-cr-811 (D. Utah June 28, 2006) (Pacific States Cast Iron Pipe, South Provo, U.T.). See generally James Sandler et al., *The McWane Prosecutions*, supra note 67.

⁷⁷ The N.D. Ala. convictions were reversed, vacated, and remanded by the Eleventh Circuit, and three of the defendants eventually entered guilty pleas in the district court. See United States v. Robison, 505 F.3d 1208, 1208 (11th Cir. 2007); *McWane, Inc. II*, No. 04-cr-199. Defendant Donald Harbin, who oversaw maintenance at the facility, pleaded before trial to a one-count information, charging him with conspiracy to violate environmental laws for which he received a one-year probationary sentence. Information at 1, United States v. Harbin, No. 04-cr-227 (N.D. Ala. May, 25, 2004), ECF No. 1; Plea Agreement at 1, *Harbin*, No. 04-cr-227, ECF No. 2; Judgment in a Criminal Case at 1, *Harbin*, No. 04-cr-227, ECF No. 24. Of the four individual defendants who were convicted at trial, Charles "Barry" Robson, McWane's vice president of environmental affairs, agreed on or about January 31, 2006, to resolve his Utah and Northern District of Alabama cases by agreeing to withdraw his appeal of his Northern District of Alabama conviction, in exchange for the government dismissing charges pending against him in the District of Utah. See *McWane Inc. III*, No. 05-cr-811 (D. Utah Nov. 3, 2005); Respondent United States Answer in Opposition to Petitioner Charles "Barry" Robson's Petition for Post-Conviction Relief Pursuant to 28 U.S.C. § 2255 or 28 U.S.C. § 2241 at 3, United States v. Robison, No. 07-cv-8039 (N.D. Ala. Jan. 6, 2009), ECF No. 15 [hereinafter *Robinson 2255 Answer*]. The remaining three defendants who were convicted at trial—McWane, Inc., former general manager James Delk, and former plant manager Michael Devine—entered guilty pleas to bills of information on December 18, 2009, and were sentenced to probationary terms. Plea Agreement, United States v. McWane, Inc. (*McWane Inc. IV*), 09-cr-00394 (N.D. Ala. Sept. 24, 2009), ECF No. 4; Plea Agreement, *McWane Inc. IV*, No. 09-cr-00394, ECF No. 5; Plea Agreement, *McWane Inc. IV*, No. 09-cr-00394, ECF No. 6. McWane, Inc. was ordered to pay a criminal fine of \$4 million. Judgment, *McWane, Inc. IV*, No. 09-cr-00394, ECF No. 25; Judgment, *McWane Inc. IV*, No. 09-cr-00394, ECF No. 28; Judgment, *McWane Inc. IV*, No. 09-cr-00394, ECF No. 31.

⁷⁸ Whitmire, supra note 72.

months,⁷⁹ the longest environmental crimes jury trial in the history of the Department.⁸⁰

Although both cases were directed at McWane and its managers, the two prosecutions addressed distinct criminal conduct and federal violations. The first case, tried in the Northern District of Alabama, involved violations of the CWA and evidence that the company vice president made false statements to EPA. Testimony presented at trial showed that McWane and its managers repeatedly discharged polluted wastewater from their Birmingham plant into Avondale Creek, a small stream east of the city. Witnesses, including former McWane employees, testified that managers ordered employees to discharge huge quantities of industrial wastewater into storm water drains that emptied into the creek.⁸¹ The discharge had high concentrations of toxic pollutants, including oil, grease, and zinc.⁸² Prosecutors also argued that McWane managers engaged in an elaborate subterfuge to hide the discharges from regulators.⁸³ The McWane Alabama case resulted in the conviction of the highest ranking corporate official, Vice President of Environmental Affairs Charles “Barry” Robison, who was found guilty of making a false statement to EPA.⁸⁴ Obtaining convictions in the hometown of McWane’s corporate headquarters was no small achievement because, in Birmingham, the McWane family was chiefly known for their philanthropy.⁸⁵

Equally impressive was the prosecution of McWane subsidiary Atlantic States Cast Iron Pipe Company in Phillipsburg, New Jersey.⁸⁶ There, the corporation and four defendants were found guilty

⁷⁹ *Maury*, 695 F.3d at 245

⁸⁰ EPA Fact Sheet: United States v. Atlantic States Cast Iron Pipe Company, et al., No 03-CR-00852 (D.N.J.).

⁸¹ *Robison*, 505 F.3d at 1212–13; see Press Release, Dep’t of Just., McWane Inc. and Executives Charged with Environmental Crimes: One Former Employee Agrees to Plead Guilty to Conspiracy to Commit Environmental Crimes (May 26, 2004); Whitmire, *supra* note 72.

⁸² United States’ Sentencing Memorandum at 7, *McWane, Inc. II*, No. 04-CR-199, ECF No. 427 (citing the trial transcript).

⁸³ *Id.* at 8–9.

⁸⁴ See Robison 2255 Answer, *supra* note 77, at 2; see also *supra* note 77 (discussing the procedural background of Robison conviction).

⁸⁵ See Barstow & Bergman, *supra* note 66.

⁸⁶ United States v. Maury, 695 F.3d 227 (3d Cir. 2012).

of a total of 70 criminal counts, including 52 felonies.⁸⁷ Only one defendant, an engineering manager, was acquitted.⁸⁸ In addition to extensive evidence of knowingly and negligently violating the CWA, the prosecution introduced evidence that several McWane employees were killed or injured at the New Jersey plant due to unsafe working conditions and Occupational Safety and Health Administration (OSHA) violations. Evidence at trial showed that, in March 2000, an employee was run over and killed by a forklift operated by another employee who had received no training to operate a forklift. The subsequent investigation revealed that the brakes on the forklift were not functioning at the time of employee's death and that this was the cause of the accident. Testimony at trial demonstrated that managers took steps to conceal the cause of worker injuries and to obstruct OSHA investigators' inquiries.⁸⁹ The sentences imposed were significant: The former plant manager was sentenced to 70 months' imprisonment; the former human resources manager was sentenced to 41 months; the former maintenance superintendent was sentenced to 30 months; the former Atlantic States finishing department head was sentenced to 6 months; and the corporation was ordered to pay an \$8 million fine, to serve four years' probation, and to comply with a court-ordered monitor to ensure regulatory compliance.⁹⁰

The remaining three McWane criminal cases also moved toward resolution in 2005. In March, Tyler Pipe Company, depicted by the

⁸⁷ Verdict as to John Prisque, *United States v. Atl. States Cast Iron Pipe Co.*, No. 03-CR-852 (D.N.J. Apr. 26, 2006), ECF No. 610; Verdict as to Scott Faubert, *Atl. States Cast Iron Pipe Co.*, No. 03-CR-852, ECF No. 611; Verdict as to Jeffrey Maury, *Atl. States Cast Iron Pipe Co.*, No. 03-CR-852, ECF No. 612; Verdict as to Craig Davidson, *Atl. States Cast Iron Pipe Co.*, No. 03-CR-852, ECF No. 614.

⁸⁸ Verdict as to Daniel Yadzinski, *Atl. States Cast Iron Pipe Co.*, No. 03-CR-852, ECF No. 613; Memorandum Opinion at 3 n.6, *Atl. States Cast Iron Pipe Co.*, No. 03-CR-852, ECF No. 721.

⁸⁹ *United States v. Maury*, 695 F.3d 227, 240–43, 245–46 (3d Cir. 2012). For a more detailed review of the evidence presented at the trial, see *United States v. Atl. States Cast Iron Pipe Co.*, No. 03-852, 2007 WL 2282514, at *69–133 (D.N.J. Aug. 2, 2007). See generally James Sandler et al., *The McWane Prosecutions*, *supra* note 67.

⁹⁰ *Maury*, 695 F.3d at 246; see Press Release, Dep't of Just., Cast Iron Pipe Manufacturer Sentenced for Environmental Crimes and Worker Safety Violations: Four Managers Sentenced to Prison Time (April 24, 2009).

New York Times investigative reporters as a dangerous workplace,⁹¹ pleaded guilty, in the Eastern District of Texas, to concealing a material fact from EPA and knowingly violating the Clean Air Act (CAA) by making major modifications at Tyler Pipe without installing the necessary air pollution controls. The company was ordered to pay a fine of \$4.5 million, to serve five years on probation, and to spend an estimated \$12 million on plant upgrades.⁹²

In July, Union Foundry Company of Anniston, Alabama, entered a guilty plea to willfully violating an OSHA safety regulation that resulted in the August 2000 death of employee Reginald Elston, who was pulled into a running unguarded machine and crushed to death, and to one count of violating the RCRA for allowing facility employees to illegally treat hazardous waste without a permit. The company was sentenced, in September, to pay a \$3.5 million criminal fine and to serve a probationary sentence of three years.⁹³ In addition, the company was sentenced to pay \$750,000 for a Department-approved community service project directed toward worker safety or environmental remediation in the Anniston area.⁹⁴

Finally, in February of 2006, McWane and its former vice president and general manager, Charles Matlock, pleaded guilty to false statements and environmental crimes regarding the operation of Pacific States Cast Iron Pipe Company in Provo, Utah. McWane pleaded guilty to two counts of submitting a document to Utah containing falsified emission test results. McWane, through its employees, conspired to melt pig iron instead of shredded scrap metal

⁹¹ On July 19, 2002, Tyler Pipe Co. was convicted of willfully violating mandatory machine “lock-out” procedures. This crime resulted in the death of Rolan Hoskins, who was pulled into a running unguarded machine and crushed to death. *United States v. Tyler Pipe Co.*, No. 02-cr-52 (E.D. Tex. July 19, 2002). See David Barstow & Lowell Bergman, *At a Texas Foundry, An Indifference to Life*, *supra* note 66.

⁹² Judgment, *Tyler Pipe Co.*, No. 05-cr-29, ECF No. 17; Barstow & Bergman, *Foundry Pleads Guilty to Environmental Crimes*, *supra* note 72; Press Release, Dep’t of Just., McWane Pipe Manufacturing Facility in Texas Will Plead Guilty to Air Violations, Pay \$4.5 Million (March 22, 2005).

⁹³ Plea Agreement at 3–4, *Union Foundry Co.*, No. 05-cr-299, ECF No. 3.

⁹⁴ *Id.* at 4; Judgment, *Union Foundry Co.*, No. 05-cr-299, ECF No. 11; Press Release, Dep’t of Just., Division of McWane, Inc. Sentenced to \$4.25 Million in Criminal Fines & Community Service Related to Worker Safety, Environmental Crime (Sept. 7, 2005).

in the plant's cupola to improperly lower the amount of emissions from the cupola and pass a September 2000 compliance stack test. The company misled regulators by using clean-burning raw materials on the day of the pollution test, instead of the routinely used high-pollution shredded scrap metal, to artificially lower emissions. In 2001 and 2002, McWane submitted falsified emission inventory documents that were based on the inaccurate September 2000 compliance stack test. The corporation was ordered to pay a \$3 million fine, the largest criminal environmental fine in Utah's history, and to serve a three-year probationary sentence.⁹⁵ Matlock was later sentenced to a year and a day of incarceration and ordered to pay a \$20,000 fine.⁹⁶ One Utah Valley resident described the air pollution generated and subsequently obfuscated by McWane as "smoke and haze" that could be felt in the lungs, which "was affecting the kids," while his wife characterized it as "the strongest chemical kind of smell that you can imagine."⁹⁷

Successfully resolving the Department's criminal cases against McWane did not, however, conclude federal efforts to address the company's history of corporate malfeasance. In July 2010, the United States, acting by the authority of the Attorney General and at the request of the EPA Administrator, together with the Alabama Department of Environmental Management and the State of Iowa, negotiated a proposed consent decree. The settlement covered 28 of McWane's manufacturing facilities in 14 states and was negotiated to resolve over 400 violations of federal and state environmental laws.⁹⁸

⁹⁵ Statement by Defendant in Advance of Plea, *United States v. McWane, Inc.* (*McWane, Inc. V*), No. 05-cr-00811 (D. Utah Feb. 8, 2006), ECF No. 56; State by Defendant in Advance of Plea of Guilty, *Matlock*, No. 05-cr-00811, ECF No. 57; Judgment, *McWane, Inc. V*, No. 05-cr-00811, ECF No. 61; Press Release, Dep't of Just., McWane, Inc. and Company Executive Plead Guilty and McWane Sentenced for Environmental Crimes (Feb. 8, 2006).

⁹⁶ Minute Entry, *McWane, Inc. V*, No. 05-cr-00811, ECF No. 73; Judgment, *Matlock*, No. 05-cr-00811, ECF No. 74; Press Release, Dep't of Just., McWane, Inc. Executive Sentenced for Committing Environmental Crimes (June 12, 2006).

⁹⁷ Env't Prot. Agency, *EPA Criminal Case File: Brent and Arlene McGregor*, YouTube (Nov. 29, 2012), <https://www.youtube.com/watch?v=ScMyRrTsuLc> (recounting couple's recollections of Pacific States' pollution),

⁹⁸ Notice of Lodging of Consent Decree at 1–2, *McWane, Inc.*, No. 10-cv-1902, ECF No. 2 [hereinafter *McWane, Inc.*, Consent Decree].

It was subject to a 30-day public comment period and the federal court's approval.⁹⁹ The proposed settlement addressed civil violations of the CAA, the CWA, the RCRA, the Emergency Planning and Community Right-to-Know Act, the Toxic Substances Act, the Safe Drinking Water Act, and the Comprehensive Environmental Response, Compensation and Liability Act, as alleged in the complaint filed by the United States, Alabama, and Iowa.¹⁰⁰ The consent decree required the company to pay a \$4 million civil penalty, divided among the United States, Alabama, and Iowa,¹⁰¹ and perform seven environmental projects valued at \$9.1 million. The projects were designed to address storm water contamination at various locations; to reduce mercury emissions in Provo, Utah, and Tyler, Texas; to reduce volatile organic compound emissions in Bedford, Indiana, and Anniston, Alabama; and to enhance air quality in Coshocton, Ohio.¹⁰²

The proposed consent decree, which the court subsequently approved,¹⁰³ also required McWane to develop and implement a corporate-wide environmental system (EMS) to foster environmental compliance, to prevent pollution, and to enhance overall environmental performance. The EMS was implemented before execution of the consent decree, and the agreement required McWane to audit the EMS to evaluate its sufficiency and submit the EMS audit report to EPA for approval.¹⁰⁴

In February 2018, the parties filed a joint motion to terminate the consent decree. They represented to the court that McWane had met the requirements for termination and that the corporation had “satisfactorily completed’ its obligations related to compliance.”¹⁰⁵ The court granted the motion and entered an order terminating the

⁹⁹ *Id.* See generally Press Release, Dep’t of Just., *McWane Inc. Agrees to Resolve Environmental Violations at Manufacturing Facilities in 14 States* (July 14, 2010).

¹⁰⁰ Complaint at 2, *McWane, Inc.*, No. 10-cv-1902, ECF No. 1.

¹⁰¹ *McWane, Inc.*, Consent Decree, *supra* note 98, at 2.

¹⁰² *Id.* at 2, 20–23.

¹⁰³ Order, *McWane, Inc.*, No. 10-cv-1902, ECF No. 7.

¹⁰⁴ *McWane, Inc.*, Consent Decree, *supra* note 98, at 8.

¹⁰⁵ Joint Unopposed Motion to Terminate Consent Decree at 1–3, *McWane, Inc.*, No. 10-cv-1902, ECF No. 9; Order, *McWane, Inc.*, No. 10-cv-1902, ECF No. 10.

agreement on February 26, 2018, thereby officially concluding the Department's McWane cases.¹⁰⁶

In reviewing the considerable resources that were dedicated to prosecuting McWane, albeit a large corporation operating in many diverse jurisdictions, the question must be asked: Was it worth it for the Department to proceed on so many different fronts when it would have been possible to bring perhaps a single prosecution or civil action directed at the corporation and corporate leadership in Birmingham? Referenced at the beginning of this article¹⁰⁷ is an analysis of successive, multi-district criminal prosecutions written by one of the defense attorneys associated with the McWane cases, John F. Cooney. Cooney's oft cited article raises questions about the Department's use of multiple prosecutions against a single corporation for similar environmental crime charges brought in different judicial districts.¹⁰⁸

Cooney argues, among other things, that the McWane prosecutions were in contravention of the Justice Manual Dual and Successive Prosecution Policy, also known as the "Petite Policy," which provides guidelines for vindicating substantial federal interests through appropriate federal prosecutions in situations where the previous state or federal prosecution left a federal interest "demonstrably unvindicated."¹⁰⁹ According to Cooney, the McWane cases and other multi-district prosecutions "have caused the harms that the [Department] policies were intended to prevent, by consuming a disproportionate amount of scarce prosecutorial resources and diminishing the 'impact of Federal resources on crime' and imposing unfair burdens on the corporate defendants."¹¹⁰ He averred that federal prosecutors can obtain a fine proportional to the illegal conduct in a single prosecution and obtain effective relief assuring future compliance in a single proceeding.¹¹¹ By his reasoning, "punishment and deterrence effects of the criminal process on the

¹⁰⁶ Joint Unopposed Motion to Terminate Consent Decree, *supra* note 105; Order, *supra* note 101.

¹⁰⁷ Cooney, *supra* note 7.

¹⁰⁸ *Id.* at 435.

¹⁰⁹ JUSTICE MANUAL 9-2.031.

¹¹⁰ Cooney, *supra* note 7, at 450–51 (citing Memorandum from Larry D. Thompson, Deputy Att'y Gen. to Heads of Dep't Components and U.S. Att'ys, Principles of Federal Prosecution of Business Organizations 14 (Jan. 20, 2003)).

¹¹¹ *Id.* at 453–55.

offender are identical regardless of the district in which an appropriate conviction is obtained.”¹¹²

Not so, argues David M. Uhlmann, the Jeffrey F. Liss Professor from Practice and the Director of the Environmental Law and Policy Program at the University of Michigan Law School. Professor Uhlmann reasons, persuasively, that “both corporations and individuals must be held accountable when misconduct occurs in the corporate setting.”¹¹³ In the McWane prosecutions, where managers committed separate crimes in several judicial districts, holding them accountable required more than one prosecution. Had the Department prosecuted McWane in only one district, some of the culpable managers would not have been prosecuted, and important federal interests would not have been vindicated. The significant criminal consequences incurred by the guilty managers vindicate the Department’s decision to proceed in more than one district.¹¹⁴

Like Cooney, Uhlmann was directly involved in the McWane cases. He served as Chief of ECS from 2000 to 2007 and supervised the ECS McWane prosecutions. Professor Uhlmann has written extensively about those cases, noting that, despite McWane’s egregious environmental crimes and worker safety record, the company’s only federal criminal conviction before 2005 was a 2002 misdemeanor OSHA violation by the Tyler Pipe facility arising out of a worker being crushed to death, for which the company paid a \$250,000 fine.¹¹⁵

The Department’s multi-district McWane prosecution had profound consequences far beyond the corporate headquarters in Birmingham, Alabama. Indeed, the prosecutions impacted the industry at large as

¹¹² *Id.* at 457.

¹¹³ Uhlmann, *The Pendulum Swings*, *supra* note 75, at 1241; *see also* DAVID M. UHLMANN, PROSECUTING WORKER ENDANGERMENT: THE NEED FOR STRONGER CRIMINAL PENALTIES FOR VIOLATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (2008).

¹¹⁴ In the Birmingham prosecution, one McWane manager pleaded guilty before trial, four were convicted at trial, and the three who appealed and saw their convictions reversed, all subsequently entered guilty pleas. *Supra* note 76. In the New Jersey prosecution, four McWane managers were sentenced to prison terms of 70 months, 41 months, 30 months, and 6 months, respectively. *See supra* note 84. In the Utah prosecution, the former vice president and general manager pleaded guilty and received a prison sentence of a year and a day. *See supra* note 94.

¹¹⁵ UHLMANN, PROSECUTING WORKER ENDANGERMENT, *supra* note 113, at 6.

well as McWane's corporate culture. Professor Uhlmann stresses that strong criminal enforcement policies that hold corporations and corporate officials accountable for their actions create a powerful deterrent effect in a highly regulated industry. A credible threat of criminal enforcement also encourages corporate responsiveness to regulatory enforcement.¹¹⁶

There remains a moral component to criminal prosecution, about which Professor Uhlmann has written persuasively. "The criminal law imposes blame and provides accountability for illegal behavior. The criminal law also validates the choices made by those who comply with the law by imposing punishment upon those who break the law."¹¹⁷ Holding corporations and individuals accountable contains a redemptive component for those who follow the law, as well as a deterrent component for those who may be tempted not to do so.¹¹⁸

Criminal prosecutions can also create reputational damage to a business. The uncertainty as to how much loss will occur as a result of corporate malfeasance is itself a deterrent. Then too, criminal convictions' collateral consequences create their own deterrent effect. For example, suspension and disbarment are not criminal penalties, but companies are prohibited from entering into new government contracts until they remedy the conditions that gave rise to a conviction.¹¹⁹ Under the CWA, for example, convictions impose a mandatory loss of government contracts.¹²⁰

¹¹⁶ UHLMANN, PROSECUTING WORKER ENDANGERMENT, *supra* note 113, at 6–7.

¹¹⁷ Uhlmann, *supra* note 75, at 1242.

¹¹⁸ *Id.* at 1232–43. As Professor Uhlmann points out, in two of the McWane prosecutions—Tyler Pipe in Texas and Union Foundry in Alabama—a worker died as a result of willful OSHA violations. OSHA only allows criminal violations to be brought against the employer, which in both cases was a McWane subsidiary. Absent criminal prosecution, the two McWane subsidiaries faced only modest OSHA administrative fines. By proceeding with criminal prosecutions for the worker deaths, the Department was able to secure “a \$4.25 million criminal penalty in the Tyler Pipe case and a \$3.5 million criminal penalty in the Union Foundry case, in addition to” comprehensive compliance agreements for improvements at both McWane businesses. *Id.* at 1280–81.

¹¹⁹ *Id.* at 1257–58.

¹²⁰ 33 U.S.C. § 1368(a) (prohibiting federal agencies from contracting with any person convicted under the CWA “until the [EPA] Administrator certifies that the condition giving rise to such conviction has been corrected”).

Another reason Professor Uhlmann cites for criminally prosecuting corporations' environmental crimes is the potential for criminal fines that far exceed civil penalties when the AFA is implemented. He raises, for example, the April 2010 Deep Water Horizon–BP Gulf of Mexico oil spill, where the maximum criminal penalty was more than \$40 billion based on the economic loss and natural resource damages associated with the spill. The maximum civil penalty for BP was only \$13 billion—and for other companies, far lower. Hence, imposing criminal fines made available significantly more financial resources to address losses due to the spill and to ensure that remedial measures were implemented to prevent future harm.¹²¹

An equally important consequence of the Department's prosecutions has been the change in corporate culture at McWane. Even before the federal prosecutions were fully resolved, PBS Frontline interviewed dozens of McWane employees who described a “new McWane,” where worker safety and environmental compliance were corporate priorities.¹²² At the April 2009 sentencing hearing for the New Jersey Atlantic States Cast Iron Pipe Co. defendants, the sentencing judge was clearly persuaded that the company had adopted a new corporate philosophy: “[McWane] comes before the court . . . with actions of reform, and it has instituted systems and attitudes that were hard to accomplish.”¹²³ Other media accounts also reported a positive change in McWane's corporate culture.¹²⁴ Certainly, the hope and expectation is that the change will be permanent.

The contemporary media reporting revealed that the government had failed to address McWane's widespread, systemic, and chronic

¹²¹ Uhlmann, *The Pendulum Swings*, *supra* note 75, at 1253–54; *see also* UHLMANN, PROSECUTING WORKER ENDANGERMENT, *supra* note 113, at 7.

¹²² James Sandler et al., *The McWane Prosecutions*, *supra* note 67; *see also* UHLMANN, PROSECUTING WORKER ENDANGERMENT, *supra* note 113, at 7.

¹²³ David Barstow, *Iron Pipe Maker is Fined \$ 8 Million for Violations*, N.Y. TIMES (April 24, 2009), <https://www.nytimes.com/2009/04/25/nyregion/25pipe.html> (quoting Judge Cooper).

¹²⁴ Anthony Salamone, *Foundry Operator McWane Ductile Tries to Repair Corporate Damage*, THE MORNING CALL (April 23, 2016), <https://www.mcall.com/business/mc-mcwanepipe-factory-tour-20160423-story.html>; *10 Essentials of McWane's Culture Change*, INDUS. SAFETY & HEALTH NEWS (June 3, 2010), <https://www.ishn.com/articles/89805-10-essentials-of-mcwanes-culture-change?v=preview>.

criminality in a unified and coordinated way. Critically, it asserts that, finally, the prosecutions offer a powerful response to the complaint raised by New York Times reporters Barstow and Bergman in their January 2003 articles about McWane. The reporters complained that “regulators and law enforcement have never joined forces to piece this record together, never taken a coordinated approach to end patterns of transgression.”¹²⁵ The Department’s response was to do exactly what the reporters argued needed to be done—agents and prosecutors pieced the record together, took a coordinated and methodical approach, and ended a pattern of transgression. The results speak for themselves.

C. Multi-district environmental crimes in the navigable waters and ports of the United States: MARPOL and the Vessel Pollution Initiative

Beginning in the 1990s, ECS and its USAO partners became more deeply involved in the prosecution of individuals and corporations responsible for the intentional release of oil and garbage from ships and the deliberate falsification of official ship records intended to conceal criminal conduct. This priority has commonly been referred to as the Vessel Pollution Initiative.¹²⁶ Many of these cases involved multi-district prosecutions that effectively addressed repeated instances of criminal conduct and vindicated important federal interests.

The United States is party to the International Convention for the Prevention of Pollution from Ships, modified by the Protocol of 1978, known as MARPOL.¹²⁷ Annex I of MARPOL states that its purpose is

¹²⁵ Barstow & Bergman, *Deaths on the Job, Slaps on the Wrist*, N.Y. TIMES (Jan. 10, 2003), <https://www.nytimes.com/2003/01/10/us/deaths-on-the-job-slaps-on-the-wrist.html>.

¹²⁶ *Vessel Pollution Enforcement*, DEP’T OF JUST., ENV’T & NAT. RES. DIV., <https://www.justice.gov/enrd/vessel-pollution-enforcement> (updated Apr. 13, 2015); see Daisy de Wolff, *Hiding Behind the Flag: Jurisdictional Impediments Imposed by the Law of the Flag on the Enforcement of Violations of Annex I of MARPOL 73/78 Pursuant to the Act to Prevent Pollution from Ships*, 42 FORDHAM INT’L L.J. 1475, 1500–01 (2019).

¹²⁷ “‘MARPOL’ is a portmanteau of ‘marine’ and ‘pollution.’” See de Wolff, *supra* note 126, at 1477 n.2 (quoting International Convention for the Prevention of Pollution from Ships, Feb. 17, 1973, 1340 U.N.T.S. 184 (entered into force 1983)).

“to achieve the complete elimination of intentional pollution of the marine environment by oil and other harmful substances and the minimization of accidental discharge of such substances.”¹²⁸

International law grants primary responsibility for maritime pollution enforcement to the country where a vessel is registered. Thus, the discharge of pollutants on the high seas is generally left for enforcement to the flag state where the vessel is registered.¹²⁹

The United States enforces MARPOL through the Act to Prevent Pollution from Ships (APPS).¹³⁰ The APPS applies to all vessels registered or operating under the authority of the United States; to commercial vessels operating in the navigable waters of the United States; and to vessels while in a port or terminal under the jurisdiction of the United States, including vessels operating under the authority of another country.¹³¹ Among its other provisions, the APPS provides criminal penalties for knowing violations of APPS regulations that require maintenance of oil record books for regular inspection by the United States Coast Guard (USCG).¹³² The United States is the largest port country in the world, and vessels entering American ports must have operable pollution control equipment, as well as accurate records of their waste management to comply with APPS.¹³³

¹²⁸ *Id.* at 1477 (quoting International Convention for the Prevention of Pollution from Ships, Feb. 17, 1973, 1340 U.N.T.S. 184).

¹²⁹ *See generally* United Nations Convention on the Law of the Sea, arts. 94, 217, Dec. 10, 1982, 1833 U.N.T.S. 397. The United States is not actually a member of the Convention, but it is party to the Protocol of 1978, known as MARPOL. *See* *Cunard S.S. Co. v. Mellon*, 262 U.S. 100, 123 (1923) (recognizing that the law of the flag does not completely trump a sovereign’s territorial jurisdiction to prosecute violations of its laws); *see also* *United States v. Jho*, 534 F.3d 398, 406 (5th Cir. 2008). For a discussion of the challenges created by the law of the flag, *see de Wolff, supra* 6, at 1479.

¹³⁰ 33 U.S.C. §§ 1901 et. seq. The APPS makes it a crime for any person to knowingly violate MARPOL, APPS, or regulations promulgated under AAPS. 33 U.S.C. § 1908.

¹³¹ 33 U.S.C. § 1902(a)–(3).

¹³² 33 U.S.C. § 1908; 33 C.F.R. § 151.25. *See* *United States v. Ionia Mgmt.*, 555 F.3d 303, 307–09 (2d Cir. 2009) (per curiam); *Jho*, 534 F.3d at 401–02.

¹³³ David M. Uhlmann, *Prosecutorial Discretion and Environmental Crime*, 38 HARV. ENV’T L. REV. 159 (2014).

The Department also prosecutes ship owners, operators, masters, engineers, and crew members who intentionally cause the release of “a harmful quantity of oil” into inland waters or navigable waters of the United States or into contiguous zones under the Oil Pollution Act of 1990 (OPA).¹³⁴ Both the OPA and the APPS penalize the intentional discharge of oil from ships, but the OPA also penalizes unintentional and accidental discharges of oil from ships and oilrigs.¹³⁵

Vessel pollution cases typically involve efforts to bypass or sabotage pollution control equipment requirements and to present falsified records of the company’s waste management practices. The Department has historically brought charges against the vessel companies, their captains, and their chief engineers for these offenses.¹³⁶ Vessel pollution cases frequently include Title 18 offenses involving obstruction of justice and the making of false statements.¹³⁷ These cases are a Department priority because vessel discharges are a significant source of pollution, estimated to cause eight times the discharge released from the 1989 Exxon Valdez oil spill annually and to kill hundreds of thousands of seabirds.¹³⁸

¹³⁴ The OPA, 33 U.S.C. § 2701 et seq., amended the Federal Water Pollution Act of 1973, 33 U.S.C. § 1251 et. seq.; 40 CFR § 110.3; *see de Wolff, supra* note 126, at 1498.

¹³⁵ 33 U.S.C. §§ 1319(c)(2), 1321(b)(3); 33 U.S.C. § 2701(7). A third basis for criminal prosecution, although not directly focused on illegal discharges of pollutants, is the Ports and Waterways Safety Act, 46 U.S.C. § 70011, et seq. *See* 46 U.S.C. § 70036(b)(1) (Failure to Notify of a Hazardous Condition).

¹³⁶ Uhlmann, *supra* note 129, at 193.

¹³⁷ 18 U.S.C. § 1501 et seq.; 18 USC § 1001; *see de Wolff, supra* note 122, at 1501–07.

¹³⁸ *Vessel Pollution Enforcement*, DEP’T OF JUST., ENV’T & NAT. RES. DIV., <https://www.justice.gov/enrd/vessel-pollution-enforcement> (updated Apr. 13, 2015). The Exxon Valdez spill released “[a]pproximately 11 million gallons or 257,000 barrels or 35,000 metric ton[s] (38,800 short tons)” of oil. *Questions and Answers about the Spill*, EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL, <https://evostc.state.ak.us/oil-spill-facts/q-and-a/> (last visited Oct. 29, 2021). *See* Ian Urbina, *The Outlaw Ocean: Stowaways and Crimes Aboard a Scofflaw Ship*, N.Y. TIMES (July 17, 2015), <https://www.nytimes.com/2015/07/19/world/stowaway-crime-scofflaw-ship.html> (“Ships intentionally dump more engine oil into the oceans in the span of three years than that spilled in the Deepwater Horizon and Exxon Valdez accidents combined . . .”).

Vessel pollution enforcement prosecutions oftentimes involve recidivist corporate defendants,¹³⁹ multi-district prosecutions, or both.¹⁴⁰ Just as with the CWA violations in the Duke Energy cases and the CAA and OSHA violations in the McWane cases, OPA and APPS prosecutions of vessel pollution cases frequently involve coordination between ECS and USAOs in several districts. These prosecutions usually include other relevant criminal conduct, including interference with the government’s investigation and witness tampering. What the vessel pollution cases cannot address is the *scope* of the harm offending corporations and individual defendants cause. Quantifying the amount of illegal pollution discharges is usually impossible. Instead, investigators and prosecutors must identify the malfeasance and craft criminal settlements that will deter further misconduct, punish offenders, and at the same time, rectify some of the environmental damage. As discussed below, one criticism of these prosecutions is that many are primarily based upon “interference with a government function.”¹⁴¹

¹³⁹ See *United States v. Princess Cruise Lines Ltd.*, No. 16-cr-20897 (S.D. Fla. Apr. 20, 2017). The defendant corporation was responsible for repetitive discharges from at least four cruise ships and was a repeat offender, having been prosecuted in 2007. *United States v. Princes Cruise Lines*, No. 07-cr-5 (D. Alaska Feb. 6, 2007); see also *United States v. Ionia Mgmt.*, No. 07-cr-134 (D. Conn. June 7, 2007) (consolidating prosecutions from the District of Connecticut, Eastern District of New York, District of the Virgin Islands, and Southern District of Florida). The defendant was previously prosecuted in 2002 in New York. *United States v. Ionia Mgmt.*, No. 02-cr-530 (E.D.N.Y. Nov. 2, 2004).

¹⁴⁰ See *United States v. Pacific Carriers, Ltd.*, No. 20-cr-87 (E.D.N.C. Nov. 25, 2020) (consolidating prosecutions from Eastern District of North Carolina, Eastern District of Louisiana, and Southern District of Texas); *United States v. Columbia Shipmanagement, Ltd.*, No. 13-cr-193 (D.N.J. Mar. 19, 2013) (consolidating criminal conduct involving four vessels in 3 districts—District of New Jersey, District of Delaware, and the Northern District of California); *United States v. Overseas Shipholding Grp., Inc.*, 06-cr-10408 (D. Mass. Dec. 12, 2006) (consolidating cases from District of Massachusetts, Central District of California, Northern District of California, District of Maine, and the Eastern District of North Carolina); *United States v. Evergreen Int’l, S.A.*, No. 05-cr-238 (C.D. Cal. 2005) (consolidating prosecutions from the Central District of California, District of New Jersey, District of Oregon, District of South Carolina, and the Western District of Washington).

¹⁴¹ Cooney, *supra* note 7, at 457.

A recent example of vessel pollution impacting more than one district and incorporating crimes more serious than “interference with a governmental function” is the prosecution of a Singaporean shipping company, Pacific Carriers Limited (PCL). The investigation commenced in September 2019 after a crew member of the *M/V Pac Antares* walked off the ship in Wilmington, North Carolina, and informed a Customs and Border Protection officer that he had information regarding illegal discharges emitted from the vessel and falsified entries in the vessel’s oil records book (ORB).¹⁴² In December 2020, PCL pleaded guilty and was sentenced for eight felony vessel pollution related offenses across three judicial districts.¹⁴³

As part of its guilty plea, PCL acknowledged *M/V Pac Antares* crew members concealed the illegal discharge of oily bilge water and oil

¹⁴² The 1973 International Convention for the Prevention of Pollution from Ships and the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, are commonly referred to as the “MARPOL Protocol” or “MARPOL 73/78.” MARPOL established the international standard that discharges of bilge waste must not contain more than 15 ppm oil. Under APPS regulations, each oil tanker of 150 gross tons or more or non-tanker vessel of more than 400 gross tons must maintain a record known as an oil record book. 33 C.F.R. § 151.25(a). Entries must be recorded in the oil record book for certain engine room operations including the disposal of oil residue or the discharge overboard or disposal otherwise of bilge wastewater that has accumulated in machinery spaces. 33 C.F.R. § 151.25(d). All accidental, emergency, or other exceptional discharges of bilge waste or oil must also be recorded in the oil record book, along with the reason for the discharge. 33 C.F.R. § 151.25(g). Each of these engine room operations, including the overboard discharge of bilge waste, is required to be fully and promptly recorded in the oil record book. 33 C.F.R. § 151.25(h). Entries are to be signed by the person or persons in charge of the operation and each completed page must be signed by the Master of the vessel. 33 C.F.R. § 151.25(h). These regulations apply to foreign-flagged ships when they are in the navigable waters of the United States, or while at a port or terminal under the jurisdiction of the United States. 33 C.F.R. § 151.09. The U.S. Coast Guard regularly inspects oil record books during port state inspections to determine compliance with U.S. law and the MARPOL Protocol and to assure that vessels are not an environmental threat to U.S. ports and waters.

¹⁴³ Judgment, *United States v. Pac. Carriers Ltd.*, No. 20-cr-98 (E.D.N.C. Dec. 1, 2020), ECF No. 24.

waste without using required pollution prevention equipment over approximately a six-month period; knowingly falsified the vessel's ORB; knowingly falsified the vessel's garbage records book (GRB); knowingly created a hazardous condition on the vessel by illegally storing oily waste water in the ship's duct keel, a large space along the vessel's keel; and knowingly obstructing justice. As a result of PCL's plea, a \$12 million fine and a four-year probationary sentence were imposed in the Eastern District of North Carolina, in conjunction with consolidated pleas from the Eastern District of Louisiana (EDLA) and the Southern District of Texas (SDTX). As a condition of the plea, PCL agreed to implement and fund an Environmental Compliance Plan (ECP) with a CAM and third-party auditor to oversee and audit vessels subject to the ECP.¹⁴⁴ In addition to PCL's guilty pleas, the vessel's chief engineer also pleaded guilty to falsifying the oil engine record book, was fined, and received a probationary sentence.¹⁴⁵

Consolidating the three PCL district prosecutions into one negotiated plea enabled the Department to capture the full panoply of the defendant corporation's criminal conduct—illegal discharges of pollutants; falsified corporate records of the discharges; creation of a hazardous condition on a vessel that had potential environmental and worker safety consequences; and the falsification of the ORB and the GRB. Had the Department proceeded in only one judicial district, significant federal interests would have remained unvindicated

¹⁴⁴ Information, *Pac. Carriers Ltd.*, No. 20-cr-87, ECF No. 1; Disclosure of Corporate Affiliations and Other Entities with a Direct Financial Interest in Litigation, *Pac. Carriers Ltd.*, No. 20-cr-87, ECF No. 9; Notice of Appearance, *Pac. Carriers Ltd.*, No. 20-cr-87, ECF No. 12; Order Granting Motion to Consolidate Plea and Sentencing and to Waive Presentence Report, *Pac. Carriers Ltd.*, No. 20-cr-87, ECF No. 19; Corporate Resolution, *Pac. Carriers Ltd.*, No. 20-cr-87, ECF No. 24; see Press Release, Dep't of Just., Singaporean Shipping Company Fined \$ 12 Million in a Multi-District Case for Concealing Illegal Discharges of Oily Water and Garbage and a Hazardous Condition (Dec. 1, 2020). This was not the *M/V Pac Antares's* first involvement with the United States criminal justice system. In 2008, the vessel was prosecuted for concealing the overboard discharge of oily bilge water and assessed a criminal penalty of \$2.1 million. Judgment, *United States v. PACCSHIP (UK), Ltd.*, No. 08-cr-16 (E.D.N.C. Apr. 4, 2008), ECF No. 15; Press Release, Dep't of Just., Ship Operator Pleads Guilty to Concealing Vessel Pollution (April 4, 2008).

¹⁴⁵ Judgment, *United States v. Ye*, No. 20-cr-36 (E.D.N.C. Oct. 13, 2020), ECF No. 34.

because a single prosecution would not have captured the full scope of the criminal conduct. The discharges of oil waste and garbage preceded the vessel's entry into ports in EDLA and SDTX and yet, during those visits, the illegal conduct remained undetected. The intentional cover-up of the illegal discharges is at the core of the harm to the United States. Without knowing that polluting activities are taking place on the vessel, the United States has no ability to stop them. Prosecution exclusively in the Eastern District of North Carolina would have failed to capture the breadth of the vessel pollution beyond the ports of eastern North Carolina.

A second multi-district vessel pollution prosecution, comparable to the PCL case, is the Department's 2013 prosecution of Columbia Shipmanagement (Deutschland) GmbH (CSM-D), a German corporation, and Columbia Shipmanagement Ltd. (CSM-CY), a Cypriot company, for violations of the APPS related to the deliberate concealment of vessel pollution from four ships—three oil tankers and one container ship—that visited ports in New Jersey, Delaware, and Northern California and for obstruction of justice. Similar to the PCL investigation, the criminal charges involved crew members who intentionally bypassed required pollution prevention equipment and falsified the ships' ORBs. Further, this investigation was also initiated when crew members, acting as whistleblowers, provided evidence of the criminal conduct to federal authorities.¹⁴⁶ Just as in the PCL case, one of the ships' engineers was indicted and pleaded guilty to an obstruction charge and received a probationary sentence.¹⁴⁷

The government's investigation of CSM-D began after a May 7, 2012, inspection of the *M/T King Emerald* in the Port of Carteret, New Jersey. Upon the vessel's arrival in port, several crew members approached USCG officers with evidence of improper pollution

¹⁴⁶ Plea Agreement, *United States v. Columbia Shipmanagement (DEUTSCHLAND) GmbH*, No. 13-cr-205 (D.N.J. Mar. 21, 2013), ECF No. 5; Joint Factual Statement, *Columbia Shipmanagement (DEUTSCHLAND) GmbH*, No. 13-cr-205, ECF No. 6; Judgment, *Columbia Shipmanagement (DEUTSCHLAND) GmbH*, No. 13-cr-205, ECF No. 12; *see* Press Release, Dep't of Just., Two Shipping Firms Sentenced to Pay \$10.4 Million for Obstructing Justice and Environmental Crimes for Concealing Vessel Pollution (July 23, 2013).

¹⁴⁷ Joint Factual Statement, *United States v. Lupera*, No. 12-cr-816 (D.N.J. Dec. 17, 2012), ECF No. 5; Plea Agreement, *Lupera*, No. 12-cr-816, ECF No. 6; Order, *Lupera*, No. 12-cr-816, ECF No. 7.

discharges, including cell phone photographs that showed the bypassing of pollution prevention equipment in August 2010. Throughout the investigation, law enforcement officers identified at least three different chief engineers who were involved in intentionally making illegal discharges and deliberately falsifying the ORB, including the ship engineer who pleaded guilty in a related criminal case.¹⁴⁸ Investigators learned that the ORB was misleading because it contained entries indicating that the oily water separator (OWS) and the oil content monitor (OCM) were properly used to make overboard discharges containing not more than 15 ppm of oil. In fact, the required equipment was not used at all, or it was used in a deliberately improper manner that effectively disabled the OCM to no longer detect and prevent illegal discharges.¹⁴⁹

The Delaware investigation of CSM-D and CSM-CY commenced in October 2012 after several *M/T Nordic Passat* crew members approached USCG officers during a USCG inspection at the Delaware Bay Big Stone Anchorage. The crew members provided a thumb drive and a note that read “illegal activities using magic pipes.”¹⁵⁰ Evidence subsequently developed indicated that senior ship engineers had instructed the crew to make illegal discharges of waste oil and to illegally dispose of sludge oil. Neither activity was recorded in the ship’s ORB as required by law. Several crew members had decided to gather evidence of the illegal activity and report it to the USCG when the ship arrived in Delaware.¹⁵¹

Despite these whistleblowers, other *M/T Nordic Passat* crew members actively obstructed the USCG investigation. Both the chief

¹⁴⁸ *Supra* note 147.

¹⁴⁹ Joint Factual Statement at 2–3, *Lupera*, No. 12-cr-816, ECF No. 5; Joint Factual Statement at 3–4, *Columbia Shipmanagement Ltd.*, No. 13-cr-193, ECF No. 7 [hereinafter *Columbia Shipmanagement Joint Factual Statement*]; *see supra* note 142.

¹⁵⁰ *Columbia Shipmanagement Joint Factual Statement*, *supra* note 149, at 9. In vessel pollution cases, a “magic pipe” or “bypass pipe” refers to a pipe configuration used to facilitate illegal vessel pollution discharges. *See United States v. DSD Shipping, A.S.*, No. 15-cr-102, 2015 WL 5613175, at *1 (S.D. Ala. Sept. 24, 2015); *see generally United States v. Oceanic Illsabe Ltd.*, 889 F.3d 178, 186 (4th Cir. 2018) (the magic pipe is a “a surreptitious bypass hose—between the Ocean Hope’s sludge pump and an illegal onboard discharge valve on the storage tank”).

¹⁵¹ *Columbia Shipmanagement Joint Factual Statement*, *supra* note 149, at 9.

engineer and the second engineer provided false statements to USCG inspectors, and senior ship engineers engaged in witness tampering with crew members.¹⁵² As part of the factual statement in support of the guilty pleas, the corporation acknowledged that crew members knowingly failed to maintain an accurate ORB. Moreover, the defendant admitted that the ORB had falsely indicated that the required pollution prevention equipment was properly used to discharge bilge waste when, in fact, it was “tricked” or manipulated using fresh water. Hence, it was impossible to know how much oil was discharged overboard.¹⁵³

The same month that the Delaware investigation commenced, CSM-CY’s *M/V Cape Maas* sailed into the port of San Francisco. Shortly before it arrived, a crew member phoned the USCG to report that the vessel’s pollution prevention equipment had been disabled and oily bilge wastewater had been discharged directly overboard. When USCG investigators boarded the ship to conduct an inspection, they were greeted by the crew member who made the phone call. The crew member gave them a video made a few days earlier that showed the OWS operating with the sample lining removed, which prevented the OWS from accurately determining whether effluent being pumped overboard exceeded legal limits. USCG officers also identified other irregularities and evidence of regulatory non-compliance. Pleading guilty, CSM-CY acknowledged a knowing failure to properly maintain the ORB, which falsely indicated that the required pollution prevention equipment was used properly. CSM-CY also admitted that it was impossible to know how much oil was discharged overboard.¹⁵⁴

Finally, in March 2013, during the government’s criminal investigation, CSM-D self-disclosed criminal conduct associated with the *M/T Cape Taft*. Counsel for CSM-D advised that their investigation revealed crew members “tricked” the vessel’s OCM, using fresh water to make illegal, overboard oily bilge waste discharges, that were not accurately recorded in the *M/T Cape Taft*’s ORB. Between April 2011 and November 16, 2012, when the OCM was “tricked” with fresh water, the *M/T Cape Taft* made two ports of call in New Jersey.¹⁵⁵

¹⁵² *Id.* at 12–13.

¹⁵³ *Id.* at 15.

¹⁵⁴ *Id.* at 13–15.

¹⁵⁵ *Id.* at 17–19.

The day after CSM-D's counsel informed the government of the illegal conduct, the USCG conducted a previously scheduled inspection of the *M/T Cape Taft*. As a result of the inspection and subsequent investigation, the CSM-D acknowledged the knowing failure to properly maintain the ORB. The book was deliberately false and misleading because it contained entries attesting that the OWS and OCM were properly used to make overboard discharges when, in fact, the equipment was either not used or was used in such a way that it effectively disabled the OCM, which could no longer detect large concentrations of oil. As such, it was once again impossible to know how much oil was discharged overboard.¹⁵⁶

The court's judgment took into account the breadth of criminal conduct the two shipping firms' employees perpetrated and imposed the largest vessel pollution settlement in the histories of New Jersey and Delaware.¹⁵⁷ The corporations were placed on probation for four years and ordered to pay \$10.4 million as a criminal penalty, \$2.6 million of which was directed to the National Fish and Wildlife Foundation to fund community service projects to restore the coastal environment. The remaining \$7.8 million were designated as a criminal fine. During the period of probation, the companies were subject to an ECP with independent monitor audits and a CAM's oversight.¹⁵⁸

A third and final example of vessel pollution prosecution is the Department's 2005 five-district case of Evergreen International, S.A., a shipping container business, which culminated in the then-largest monetary penalty of \$25 million for intentional vessel pollution. The investigation began in 2001 after authorities discovered approximately 500 gallons of oil in the Columbia River near Kalama, Washington. The USCG traced the spill to the *Ever Group*, a container ship managed by Evergreen Marine (Taiwan) Ltd., which had negligently discharged the oil. The subsequent federal investigation revealed that, over a three-and-a-half-year period, at least seven Evergreen ships regularly and routinely used bypass equipment to

¹⁵⁶ *Id.* at 17.

¹⁵⁷ Press Release, Dep't of Just., Two Shipping Firms Sentenced to Pay \$10.4 Million for Obstructing Justice and Environmental Crimes for Concealing Vessel Pollution (July 23, 2013).

¹⁵⁸ Judgment, *Columbia Shipmanagement (DEUSTCHLAND) GmbH*, No. 13-cr-205, ECF No. 12; Consent Order, *Columbia Shipmanagement Ltd.*, No. 13-cr-193, ECF No. 12.

discharge oily waste and sludge oil while circumventing pollution equipment requirements and concealing these discharges in falsified ORBs.¹⁵⁹

The prosecution in the Central District of California consolidated cases from the Districts of New Jersey, Oregon, South Carolina, and the Western District of Washington—a total of twenty-four felony counts and one misdemeanor.¹⁶⁰ The felony counts were for violations of the APPS, the knowing failure to maintain ORBs, for making false statements, and for obstruction of an agency proceeding. The misdemeanor was a CWA violation for negligently discharging a harmful quantity of oil into the navigable waters of the United States.¹⁶¹

Evergreen received a three-year probationary sentence, with the \$25 million penalty to be divided equally among the five judicial districts and \$10 million of that amount directed to environmental community service projects in each district. The corporation was also ordered to create and fund a comprehensive ECP.¹⁶²

Similar to his criticism of the Department's multi-district McWane prosecutions, Cooney argues that multi-district vessel pollution prosecutions are frequently not warranted because "the principal harm is interference with a governmental function, the ability of the Coast Guard to police compliance with applicable legal requirements. This federal interest is not local in nature and can be vindicated by one conviction in any appropriate jurisdiction."¹⁶³ The environmental compliance obligations obtained by a corporate conviction in one district, he believes, will usually suffice because "localized differences in the environmental harm suffered cannot be resolved through the

¹⁵⁹ Press Release, Dep't of Just., Evergreen to Pay Largest Ever Penalty for Concealing Vessel Pollution: Container Shipping Company to Pay \$25 Million (April 4, 2005); Craig Welch, *Waste Dumping Draws Big Fine*, SEATTLE TIMES (April 6, 2005), <https://www.seattletimes.com/seattle-news/waste-dumping-draws-big-fine/>; *Shipping Company to Pay \$25 Million for Waste Oil Pollution*, 19 ANDREWS WHITE-COLLAR CRIME REP. No. 8 (April 25, 2005).

¹⁶⁰ *Evergreen Int'l, S.A.*, No. 05-cr-238.

¹⁶¹ Judgment and Probation Order, *Evergreen Int'l, S.A.*, No. 05-cr-238, ECF No. 27 [hereinafter Evergreen Judgment and Probation Order]; see 33 U.S.C. § 1908(a); 33 C.F.R. § 151.25; 18 U.S.C. §§ 1001, 1002; 18 U.S.C. §§ 1502, 1505; 33 U.S.C. §§ 1319(c)(1)(A), 1321(b)(3).

¹⁶² Evergreen Judgment and Probation Order, *supra* note 161.

¹⁶³ Cooney, *supra* note 7, at 457.

criminal process.”¹⁶⁴ As recent vessel pollution prosecutions make clear, however, the principal harm is *not* interference with a governmental function. It is the perpetuation of environmental damage through continuing discharges of oil and waste. Measuring the extent of these discharges and ensuing environmental impact is impossible; holding corporate defendants and their employees accountable for this criminal conduct is not.

Furthermore, most criminal vessel pollution cases include some element of the corporation’s employees’ deceptive or misleading conduct on behalf of the corporation. Deceptive conduct, such as manipulating a vessel’s pollution prevention equipment or illegal dumping of oily water and waste, allows illegal pollution to go undetected. As Professor Uhlmann noted, environmental laws rely on an honor system where vessel owners and operators must obtain permits or other authorization for operations involving pollution and then must self-monitor and report their compliance. Companies that violate these norms undermine the self-policing required by our nation’s environmental laws. Deceptive and misleading conduct also deprives regulators of accurate data on overall levels of pollution. Professor Uhlmann opined that, “lying is the most significant factor in making a criminal case out of what otherwise might be a civil or administrative violation.”¹⁶⁵ As demonstrated in the three vessel pollution cases discussed above, deceptive conduct, false statements to law enforcement, and falsifications of ships’ ORB and GRB are recurring issues in vessel pollution cases. To address the full scope of the deception, prosecutors must be prepared to investigate and charge in more than one judicial district.

V. Conclusion

In many cases, apprehending systemic criminal conduct requires prosecutors to investigate and prosecute separate and distinct criminal offenses in more than one district to address the full scope of criminal conduct. Resolution of criminal allegations in a fulsome, multi-district prosecution promotes finality, which is beneficial both to the cause of justice and to the interests of individual and corporate defendants. Communities and individuals harmed by the criminal

¹⁶⁴ *Id.*

¹⁶⁵ Uhlmann, *Prosecutorial Discretion and Environmental Crime*, *supra* note 133, at 197–98.

conduct and resulting environmental damage obtain the satisfaction that their particular concerns have been addressed. Furthermore, corporations, through their officers and managers, can move forward to make necessary reforms without fear of additional prosecutions of as yet unaddressed misconduct.

About the Author

Gretchen C.F. Shappert is the United States Attorney for the U.S. Virgin Islands. Previously, she was the Assistant Director for the Indian, Violent and Cyber Crime Staff at the Executive Office for U.S. Attorneys. Ms. Shappert served as the U.S. Attorney for the Western District of North Carolina from 2004–2009. She was also an Assistant U.S. Attorney from 1990–2004 and specialized in violent crime and outlaw motorcycle gang prosecutions.

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Note from the Editor-in-Chief

This large issue brings an important, timely topic into focus: environmental crimes. Our articles cover a variety of issues, including climate change, energy, wildlife protection, and prosecuting environmental crimes in general. We hope that you enjoy the hard work of our esteemed Department of Justice subject-matter experts, who tells us how each day they ensure that we live in a safe and comfortable world.

This issue was indeed a huge undertaking, and a lot of people in addition to our authors deserve credit. Thanks to Deborah Harris, who acted as our point of contact with the Environmental and Natural Resources Division (ENRD). The Publications Team here at the Office of Legal Education is second to none. Addison Gantt, Managing Editor; Phil Schneider, Associate Editor; and our law clerks painstakingly check and recheck everything for accuracy and make the issue look aesthetically pleasing. Putting together a law review is hard work, but together they form an amazingly talented group of professionals who get the job done.

I hope that 2022 is a better year for you than 2021. We'll meet up again in the next issue. Until then, take care and stay safe.

Chris Fisanick
Columbia, SC
December 2021