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CLIMATE CHANGE™

LAW & POLICY REPORTER

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FEATURE ARTICLE

EPA'S PROPOSED AFFORDABLE CLEAN ENERGY RULE WILL INCREASE EMISSIONS AND CREATE SIGNIFICANT HEALTH RISKS FROM POWER PLANTS

By Danielle E. Leben

On August 21, 2018, the U.S. Environmental Protection Agency (EPA) proposed the Affordable Clean Energy (ACE) rule to reduce carbon pollution from power plants across the United States as a replacement for the 2015 Clean Power Plan (CPP). The EPA asserted that the CPP had to be repealed, as it exceeds EPA's authority under the federal Clean Air Act (CAA). However, numerous states, environmental groups, and climate experts oppose the ACE, claiming it will destroy air standards implemented to prevent climate change, and give polluters free reign to increase emissions and create unhealthy levels of greenhouse gases (GHG) and other toxins. Several states recently announced their intent to pursue legal action against the proposed rule, once it is finalized, assuming no significant changes are made to the existing proposal.

The Clean Air Act

The Clean Air Act (CAA)—codified as 42 U.S.C. §§ 7401 *et seq.*—was established in 1970 to regulate air emissions from stationary and mobile sources to protect public health and the environment from emissions of hazardous air pollutants. The CAA requires and authorizes the EPA to regulate carbon dioxide (CO2) and other GHGs that endanger public health and welfare. In carrying out that duty, EPA establishes certain air quality standards, with which individual states must comply by developing state plans to address different sources and pollutants, which are reviewed and approved by EPA.

Section 111 addresses standards of performance for stationary sources, including power plants. Subsection (d) addresses standards of performance for existing sources, and states:

(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 7410 of this title under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 7408(a) of this title or emitted from a source category which is regulated under section 7412 of this title but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.
(2) The Administrator shall have the same authority—(A) to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under section 7410(c) of this title in the case of failure to submit an implementation plan, and
(B) to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections 7413 and 7414 of this title with respect to an implementation plan. In promulgating a standard of performance under a plan prescribed under this paragraph, the Administrator shall take into consideration, among other factors, remaining useful lives of the sources in the

category of sources to which such standard applies. Section 111(a) defines "standards of performance for any existing source" of certain air pollutants as "the best system of emission reduction…the Administrator determines has been adequately demonstrated." (42 U.S.C. § 7411(a)(1).)•

The Clean Power Plan

Power plants are one of the two largest sources of carbon pollution in the United States, accounting for about 40 percent of all U.S. carbon pollution. In 2015, the Obama administration's EPA adopted the Clean Power Plan as a climate initiative to reduce carbon pollution and particulate matter from the U.S. power sector. Based on the 2011 U.S. Supreme Court ruling in *American Elec. Power Co. v. Connecticut* (2011) 564 U.S. 410, the EPA determined that the CAA provided it with the legal authority to control carbon pollution from power plants. The CPP is considered revolutionary and forward thinking, as it aims to significantly reduce carbon emissions from power plants, which had not been previously regulated by the CAA.

The CPP's stated goal is to reduce GHG emissions from American power plants by 32 percent below 2005 levels by the year 2030, as follows:

•Under the CPP, EPA established national carbon dioxide emissions performance rates for existing coal- and gas-fired power plants. The performance rates are based on emission reductions achievable, using the "best system of emission reduction" (BSER), as required by the CAA.

•The EPA will provide each state with a unique carbon emission reduction goal, determined according to the emissions, number of power plants, and other relevant data from each state. States are provided the opportunity to submit plans demonstrating how they will meet their established goals, either by adopting a state plan enforcing emission rates or by adopting an alternative plan that will achieve the same result. The CPP provides states substantial flexibility in setting these goals, and does not prescribe how power plants should or must achieve emission reductions.

•States that do not submit plans to reduce emissions from their power plants will be directly regulated by the EPA.

•The CPP established an efficient and reasonable timeline for compliance. States are provided nine months to develop plans for achieving emission reduction goals. Once a state plan is submitted, the EPA has four months to act on the plan (approve or deny it). If a state fails to submit a plan, or if EPA disapproves of a state plan, EPA has six months to implement a federal plan for that state.

•Importantly, The CPP only addressed existing sources and did not address New Source Review (NSR), which generally requires a unit that undertakes a major modification, which causes increased emissions of a regulated pollutant, to apply for a construction permit. Because the CPP would improve efficiency and decrease CO2 emissions, it may have increased emissions of other pollutants, triggering NSR. However, the CPP did not discuss this rule.

In promulgating the CPP, the EPA recognized that all power plants are connected through the electric grid, and they all operate jointly to supply the exact amount of electricity demanded. Therefore, if one power plant increases its generation to meet demand, other plants will automatically decrease their generation. Consequently, in determining the BSER for power plants, the CPP allowed coal and gas plants to meet their applicable limits using a combination of methods, including heat rate improvements at individual plants, increased use of natural gas instead of coal to generate electricity, and increased use of renewable energy. Although all of these options combined were referred to as the BSER, no single technology was required to be implemented.

Further, the CPP allowed plants to meet their emissions limits by adopting different plans to establish enforceable limits. These include installing emission control equipment, using cleaner fuelds, or investing in emission reducing technologies and/or actions at other locations in the power system. Investments could be made anywhere in the country, and could either be made through direct investment or by purchasing emission rate credits. The CPP also allowed for power plants to adopt carbon capture and storage.

Prior to the CPP, there were no uniform guidelines for regulation of carbon emissions from the U.S. power sector. Emissions from power plants release CO2, ozone, and particulate matter, which lead to pre-

mature deaths, hospitalizations, and adverse health impacts in communities adjacent to power plants. Under the CPP, the EPA estimates that approximately 90,000 asthma attacks and 3200 premature deaths tied to coal plant emissions will be prevented each year. Although the CPP's carbon emissions reduction target was ambitious, many states are already on their way to achieving the target even with the CPP, and by the end of 2017, emissions had already decreased by 28 percent.

In essence, the CPP requires states to rely less upon coal-fired power plants and other generators for electricity production than they did in 2005. States are authorized to decide whether and how to obtain replacement power, as necessary to achieve the targets prescribed by the EPA. However, this rule will result in decreased coal use, which angers coal-friendly states, coal burning power plants, and coal lobbyists and proponents.

The Legal Battle and Stay

In October 2015, immediately after the CPP was put into effect, it was legally challenged by 24 states, which filed a petition for review in the D.C. Court of Appeals, claiming the CPP exceeded the EPA's statutory authority under the CAA.

In February 2016, the Supreme Court voted (5-4) to stay the implementation of the CPP until the D.C. Circuit ruled on the merits of the challenge, after several applications to stay were filed by states and industry proponents. Since President Trump announced his intent to repeal the CPP, and directed the EPA to review or rescind it via Executive Order 13873, in May 2016 the D.C. Circuit issued a 60-day stay of its ruling, to avoid deciding an issue that may become moot. The D.C. Circuit issued an additional 60-day stay, noting its "reluctan[ce] to continue holding th[e] case in abeyance." (*State of West Virginia, et al. v. U.S. Environmental Protection Agency*, Order *Per Curiam*, June 26, 2018.) The D.C. Circuit court's delay has resulted in an extension of the Supreme Court's stay on allowing the CPP to take legal effect.

EPA has used the stay to suggest that its contention that the CPP exceeded EPA's authority is supported by the courts. Documents related to the proposed ACE, and statements by EPA representatives repeatedly cite to the fact that "the CPP was stayed by the U.S. Supreme Court and has never gone into effect," and refer to the "unprecedented stay." Opponents to the ACE argue that the delay in implementation of the CPP is actually a result of the Applications to Stay, political statements, and EPA's new proposal to repeal the plan and replace it with the ACE. They claim that in reality the CPP is well within EPA's authority under the CAA, and, as explained above, the Supreme Court has not yet considered or ruled on the legality of the CPP.

Proposed Affordable Clean Energy Rule

On December 28, 2017, the EPA released an Advanced Notice of Proposed Rulemaking regarding State Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units (82 *Fed. Reg.* 61507), which, in effect, was a preview of the ACE. EPA received over 270,000 public comments on the Advanced Notice, which it claims informed the Rule proposed on August 21, 2018.

Under the ACE, the EPA will regulate only source emissions, not sector-wide emission reduction activities, under the more limited authority they contend is provided by the CAA. Therefore, the ACE does not establish minimum, federally determined emissions reductions, but rather establishes guidelines for states to reduce emissions, as follows:

- The ACE established the BSER for existing coal-fired power plants as on-site, heat-rate efficiency improvements. Therefore, coal-fired power plants can only reduce CO2 emissions by making on-site efficiency upgrades to reduce the amount of CO2 released per unit of electricity generated.

- The EPA will provide states with a list of "candidate technologies" that can be used to establish standards of performance and incorporate them into their state plans. States would be required to consider these technologies when establishing standards of performance for existing plants, to determine which technologies are appropriate for each plant, and to establish a standard of performance that reflects the degree of emission reduction required.

- The ACE will implement proposed revisions to the NSR permitting program, which will give states the option to adopt an hourly emissions increase test, and only projects that increase a plant's hourly rate of pollutant emissions would have to undergo a full NSR analysis.

- The ACE provides states and the EPA significantly more time than the CPP to develop and approve state plans. Under the ACE, states will have three years to develop plans for achieving emission reduction goals. Once a state plan is submitted, the EPA will have twelve months to act on the plan. If a state fails to submit a plan, or if EPA disapproves of a state plan, EPA will have two years to implement a federal plan for that state.

The new rule relies on the argument that, under § 111(d) of the Clean Air Act, a BSER must consist of measures "applied to or at" an individual facility. In other words, EPA argues that it can only require reductions in carbon dioxide emissions that can be accomplished through the direct application of technology or control systems to power plant operations. According to EPA's new interpretation of the CAA, the CAA authorizes the agency to impose *efficiency_improvements* for coal-fired plants but does not allow EPA to require that the electricity output of a coal fired plant be reduced *in favor of other sources* of electricity. Under this interpretation, EPA could require a coal-fired plant to increase efficiency, but it could not require a coal-powered plant to reduce operations, because that would cause the area to obtain power elsewhere, if necessary. Because obtaining electricity elsewhere is something that happens off-site, and the EPA does not believe the CAA authorizes the agency to require off-site measures, it would be prohibited by the ACE.

Under the CPP, BSER may include a combination of technological, operational, and other options to achieve reductions. One option for reducing emissions under the CPP was to simply reduce use of a polluting facility, which would result in increased use of a less polluting facility. However, EPA's current position, that BSER only includes actual technologies, precludes the implementation of operational changes to achieve emissions reductions, and requires power plants to use only heat-rate efficiency improvements from the list of candidate technologies.

Heat-rate improvements are not capable of achieving significant CO2 emission reductions. In its analysis of the CPP, the EPA previously determined that the quantity of emission reductions achievable through heat rate improvement measures is insufficient for these measures alone to constitute the BSER. Further, heat-rate improvements can only reduce a plant's CO2 emission rate by a small percentage, and many heat-rate improvement technologies only have a heat rate improvement potential of less than one percent. Therefore, relying solely on heat rate improvements for BSER will cause the "more efficient" existing sources to be utilized more frequently, which will emit more pollutants, defeating the purpose of an emissions reduction regulation. (Lynch, Lissa. "Trump's Clean Power Plan Replacement is WORSE Than Nothing." *Natural Resources Defense Council*, August 20, 2018 (available at: https://www.nrdc.org/experts/lissa-lynch/trumps-clean-power-plan-replacement-worse-nothing).) Based on the proposed BSER and the other requirements, the ACE would clearly result in significantly more pollution than if the CPP were implemented, or even if no emissions reduction plan was implemented.

In addition, the EPA projects that replacing the CPP with the ACE rule could result in $3.4 billion in net benefits, including $400 million annually. This estimation, however, appears to fail to account for the $10 billion in climate and health hazards from pollution exposure and the loss of $11 billion in climate and health benefits that proponents of the CPP claim would have resulted from the CPP. (Yeh, Starla. "How EPA Admin. Wheeler Cooks the Books for Dirty Power Scam." *Natural Resources Defense Council*, August 28, 2018 (available at: https://www.nrdc.org/experts/starla-yeh/how-epa-admin-wheeler-cooks-books-dirty-power-scam).

Impacts of the Proposed Rule

EPA estimated that the proposed Rule will decrease CO2 emissions by between 0.7 percent and 1.5 percent below 2005 levels by 2030, which pales in comparison to the 32 percent reduction target in the CPP. As a result, and as EPA admitted, the ACE will make air quality worse and have a detrimental impact on public health. In the agency's regulatory impact analysis for the proposed Rule, the EPA states:

> As compared to the standards of performance that it replaces…implementing the proposed rule is expected to increase emissions of carbon dioxide (CO2) and increase the level of emissions of certain pollutants in the atmosphere that adversely affect human health. These emissions include directly emitted fine particles sized 2.5 microns and smaller (PM2.5), sulfur dioxide (SO2), nitrogen dioxide (NOX), and mercury (Hg).

(*See, Regulatory Impact Analysis for the Proposed Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program*, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards Health and Environmental Impact Division, p. 4-1, August 2018.)

The EPA estimates that these emissions would lead to over 1,400 additional premature deaths, 750 heart attacks, 96,000 cases of exacerbated asthma, and 1,100 cases of acute bronchitis, among other public health impacts, *on an annual basis*, as a result of higher levels of air pollution.

Further, fossil fuel interests won't have to make the big cuts in climate-altering carbon pollution that the Obama era plan required, which will exacerbate the destructive impacts of climate change. According to the Impact Analysis, coal production could rise by up to 5.8 percent by 2025, and 9.5 percent by 2035. (*Regulatory Impact Analysis for the Proposed Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program*, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards Health and Environmental Impact Division, p. ES-20, August 2018.) Under the ACE, polluters can avoid making reductions in emissions and pollution that CPP would have achieved, and can profit from doing so.

Legal Challenges

In *Massachusetts v. U.S. EPA*, 549 U.S. 497 (2007), the Supreme Court held that the EPA is responsible for regulating emissions and pollutants that endanger public health and safety including CO2 and GHGs, under the CAA's authority. In 2009, the EPA made an "Endangerment Finding" in which they determined that greenhouse gas emissions endanger public health and welfare. Consequently, the EPA is legally obligated to establish regulations to monitor GHGs that pose a threat to public health.

Several states, including New York, as well as local governments, environmental groups and coalitions announced that they intend to legally challenge the ACE on the grounds that its implementation abandons EPA's obligations under the Clean Air Act to ensure that state plans address dangerous air pollution from existing sources and satisfy the CAA's statutory requirement to achieve emission reductions commensurate with those achievable using the best system of emission reductions available. Considering the findings in the Regulatory Impact Analysis, and admissions by the Trump administration's EPA, a legal challenge to the ACE may succeed.

Conclusion and Implications

In sum, as compared with the CPP, which it is set to replace, the proposed ACE: will achieve minimal emission reductions, if not lead to increased reductions; allows states to set their own emissions standards, without providing a mandatory national standard; creates new NSR requirements, which will likely permit stationary sources to increase emissions; and will cost more than the CPP, both in economic terms and in health impacts.

Although the current administration continues to deny that climate change exists, or that it is a threat to the United States, most scientist believe it affects all American citizens on a daily basis. The CPP presents a feasible, flexible, and progressive approach to reducing carbon emissions from power plants, while still allowing them to remain productive and profitable. By contrast, if implemented, the ACE will almost certainly increase emissions, and it is argued that increased emissions will lead to more premature deaths and other negative health impacts. Regardless of whether the EPA attempts to replace the CPP with the ACE, the courts are likely to ultimately decide which plan is legal, and which plan fulfills the EPA's duty to protect U.S. citizens from the dangers of pollution.

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CLIMATE CHANGE NEWS

REPORT SHOWS CALIFORNIA'S EMISSIONS POLICIES CAN CREATE A WIN-WIN SITUATION FOR THE ENVIRONMENT AND THE ECONOMY

In August 2018, Next 10, an Oakland-based independent, nonpartisan think tank, released a report entitled "2018 California Green Innovation Index." The annual report, first published in 2009, tracks the economic and environmental impact of 2006's AB 32, California's landmark legislation requiring a reduction in statewide greenhouse gas (GHG) emissions to 1990 levels by 2020. The Next 10 report concludes that between 2006 and 2016, California had higher GHG emissions reductions than the United States as a whole while also achieving greater economic output.

AB 32/SB 32 Targets—Lower GHG Emissions by 2020 and 2030

AB 32, the California Global Warming Solutions Act of 2006, was signed into law by Governor Arnold Schwarzenegger. AB 32 required the California Air Resources Board (CARB) to reduce statewide GHG emissions to 1990 levels by 2020 (a reduction of approximately 15 percent). On July 11, 2018, CARB announced that the target was reached ahead of schedule, with the 2016 Greenhouse Gas Emissions Inventory showing that state GHG emissions were less in 2016 than in 1990. SB 32, signed by Governor Jerry Brown in 2016, now requires CARB, by 2030, to reduce statewide GHG emissions by 40 percent when compared to 1990 levels.

Economic Impact of Laws Requiring GHG Emissions Reductions

In 2006, parties who opposed AB 32 argued that its implementation would hurt California's economy. That argument reappeared during the economic downturn suffered by the nation in 2009 when opponents sought to freeze implementation of AB 32. The Next 10 report rebuts the arguments raised by AB 32's opponents.

According to the Next 10 report, innovation in state policy and technology between 2006 and 2016 delivered positive results for California's environment and its economy. In that ten-year period, California GHG emissions reductions outpaced national reductions (-11.1 percent v. -10.2 percent). California was able to achieve these GHG emissions reductions even as it saw its population increase by 8.5 percent.

At the same time, California achieved 15.2 percent economic growth vs. a national economic growth of 11.6 percent. On a global scale, the European Union had a greater decrease in emissions over the same period (-16.9 percent), but only achieved economic growth of 8.8 percent. In addition to economic growth, the Next 10 report shows that California experienced more job and wage growth than the nation as a whole. The Next 10 report opines that policy, like AB 32, creates market certainty, thereby helping to drive investment and technology advancement.

Future GHG Emissions Reductions

Although the Next 10 report is generally positive, it does point to a potential stumbling block to future GHG emissions reductions—transportation. As noted in the report, although emissions from transportation in 2016 were almost 9 percent lower than in 2006, there was a year to year increase of 2.1 percent between 2015 and 2016. This is problematic because transportation emissions account for almost 41 percent of California's total emissions. The report also notes that transportation emissions have been increasing in recent years, even with improvements in fuel economy attributable to California's stringent emissions regulations. President Donald Trump's administration, however, is currently seeking to revoke California's right to set and enforce its own emissions regulations, which could affect California's ability to meet its GHG emissions reductions targets.

Conclusion and Implications

The California Natural Resources Agency recently published "California's Fourth Climate Change Assessment" (Climate Change Assessment), which includes projections of the economic costs of climate change in California over the next century. For

example, the Climate Change Assessment estimates that, by 2050, $48 billion worth of coastal properties could be impacted by sea level rise statewide, with economic impacts to southern California beaches ranging from $40 million to $63 million per year.

The Next 10 report, however, shows that California's environmental policies can co-exist with its economic goals, leading to positive environmental and economic impacts. A potential stumbling block to future gains in both categories is transportation emissions. The Next 10 report notes that California's transportation emissions are growing and may increase due to the federal government's attempts to roll back fuel standards and limit California's ability to set its own fuel economy standards. If the federal government is successful, the Next 10 report believes that the federal government's action may also roll back the environmental and economic gains attained by California between 2006 and 2016. For more information, *see:* https://next10.org/2018-gii
(Kathryn Casey)

COLORADO'S STATE, COUNTY, AND LOCAL WATER OFFICIALS RESPOND TO RECORD DROUGHT

The 2018 water year in Colorado will likely conclude on September 30 as the fourth driest on record statewide and the driest in southwestern Colorado. The severe drought has caused significant economic and environmental impacts. Local and state water providers and other officials who handle water issues have responded to the drought through a variety of short-term measures, such as municipal outdoor watering restrictions, allocation of state grant money for drought planning, agreements to release recreational and environmental flows from storage, and widespread angler restrictions. These measures have been effective, but will need to be supplemented with long-term solutions to stave off the impacts of future drought years going forward.

Background

The Colorado water year that began on October 1, 2017 and concludes on September 30, 2018 is shaping up to be the fourth driest on record since the state began tracking water supplies 123 years ago. Only 1924, 2002, and 2012 have been drier. It will also likely be the third warmest year on record behind only 1934 and 2000. The statewide yearly precipitation average is a full 4.55 inches (27 percent) below what we typically see, and the yearly temperature average is 3.6 degrees Fahrenheit (8 percent) higher than normal. It will be the hottest and driest year on record for the southwestern quadrant of the state. The water year kicked off with the warmest November in history, followed by winter snowpack levels that ranged from between only 22 percent to 50 percent of average. A warm spring fast-forwarded the typical runoff season by approximately two to six weeks from mountains that did not have the snowmelt deposits to sustain flows for very long. Now, in the early-fall of 2018, rivers throughout Colorado are running at historical lows. The Colorado River Basin is flowing at 40 percent of average, the White River Basin is flowing at 25 percent of average, and the Arkansas River Basin is flowing at just 19 percent of average.

The economic and environmental impacts of the drought have been significant. Fires have scorched more than 200,000 Colorado acres, torching dozens of buildings and prompting hundreds of evacuations. Commercial tubing and rafting companies and boat marinas have suspended operations. State hay prices are at an all-time high, prompting ranchers and horse breeders to sell off their livestock or purchase hay from farmers in Idaho, Montana, and Wyoming. Above-average stream temperatures with decreased oxygen levels have led to aquatic life mortalities and may affect the fall trout spawning season.

Local and State Responses

Local, county, and state water providers and other officials who handle water issues have stepped up to respond to the drought. On a local level, many residents of Colorado's urban areas have not yet felt the proverbial parch of the record dry conditions. That is because many cities draw their domestic water supply from large reservoirs that were full coming into this water year following two productive *El Niño* cycles with plenty of precipitation. However, this summer, water officials began to plan for the severe shortages that may come with a second consecutive dry water

year. Since outdoor watering accounts for more than 50 percent of statewide municipal water use, many communities have implemented limitations on the frequency, duration, and timing of lawn and landscape irrigation. For example, the City of Grand Junction is restricting its water customers to two outdoor watering sessions per week in September, and will allow only one watering session per week in October. The City of Aspen currently does not permit more than 30 minutes of watering per sprinkler zone per day and prohibits all watering between the hours of 10am and 6pm. Eagle County Water and Sanitation District has asked its customers to voluntary reduce their outdoor watering use by 25 percent and has sent personalized letters to all customers who are using more than 10,000 gallons of water per week.

On a state level, the Colorado General Assembly allocated $1 million in grants to implement long-term strategies for water conservation, land use, and drought planning under Senate Bill 218 in May. In addition, many owners of storage water rights have entered into agreements with state and federal agencies, such as the Colorado Water Trust (CWT), Colorado Water Conservation Board (CWCB), Colorado Parks and Wildlife (CPW), and U.S. Fish and Wildlife Service (FWS), to make recreational and environmental reservoir releases. Over the summer, reservoirs in the headwaters of the Arkansas River made a series of releases to help support local recreational activities such as rafting and fishing. Currently, agencies are releasing water out of Elkhead Reservoir, Ruedi Reservoir, Lake Avery, and other sources of storage supplies to protect aquatic life and support fish recovery efforts.

Finally, CPW and others have issued mandatory and voluntary fishing closures on rivers throughout the state, typically from around noon or 2pm until midnight, to help protect already stressed fish populations. CPW has also asked irrigators to voluntarily leave as much irrigation water in the stream as possible.

Conclusion and Implications

CPW has described Colorado's efforts thus far to address the 2018 water year drought as "excellent." However, the state has a long road ahead to adequately prepare for future droughts under a variety of different climate and population scenarios. The Colorado Water Plan has identified over $3 billion in unmet needs and predicted that the state will run out of water by 2050 on its current growth and water usage trajectories. In addition, several water experts prefer to refer the conditions in Colorado as "aridification," meaning not just a lack of rainfall but a whole scale transformation of western lands into a permanent drier landscape. Many local agencies need financial help that cannot be met through consumer ratepayers alone to continue to provide water services, and water managers need to be thinking about implementing new ideas for conservation and efficiency. Right now, most of the money for water conservation projects in Colorado comes from the state's severance tax on oil and gas production. However, because this funding source hinges on fluctuations in oil and gas prices and tax deductions claimed by oil and gas companies, it is providing to be insufficient and volatile. As a result, funding for the Colorado Water Plan was slashed in 2018 from $10 million to $7 million.

Over the last two decades, California has responded to an extended multi-year drought by articulating water conservation as a critical statewide goal. It dedicated significant monetary and personnel resources to coordinated conservation and public education initiatives, and as a result, managed to slash statewide municipal water use by over 25 percent. Hopefully, the 2018 drought will prompt Colorado to band together and do the same.
(Danielle L. Van Arsdale, Paul L. Noto).

LEGISLATIVE DEVELOPMENTS

CALIFORNIA ADOPTS LEGISLATION TO IMPLEMENT 100 PERCENT RENEWABLE ELECTRIC LOAD AND ACHIEVE CARBON NEUTRALITY BY 2045—GOVERNOR BROWN ISSUES EXECUTIVE ORDER

On September 10, 2018, Governor Jerry Brown signed SB 100 (De León), The "100 Percent Clean Energy Act of 2018," into law. SB 100 continues California's upward ratcheting of the Renewable Portfolio Standard (RPS), and creates a new requirement that 100 percent of California's retail electric supply come from zero-carbon, RPS-eligible resources by December 31, 2045.

Simultaneous to his execution of SB 100, Governor Brown also signed an Executive Order (EO), "EO B-55-18 To Achieve Carbon Neutrality," which establishes a statewide goal to:

> . . .achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. (EO B-55-18, § 1.)

The Executive Order directs the California Air Resources Board (CARB) to work with relevant state agencies to implement this goal. (EO B-55-18, § 3.)

Background

California's Renewable Portfolio Standard was established in 2002 by then-Governor Arnold Schwarzenegger. The RPS requires that a certain percentage of the electricity procured and sold by electric utilities be derived from qualifying renewable resources. In its original form, California's RPS required that retail electric sales be comprised of 20 percent renewable energy by 2017. Since its initial adoption in California, the RPS percentage and timeline for compliance has been successively increased, and the scope of application widened.

For example, in 2006, the 20 percent timeline was moved up by seven years to 2010, and the Energy Action Plan II of 2005 added a new requirement that utilities reach 33 percent of renewable electric load by 2020. In 2011, Senate Bill X1-2 increased the RPS from 20 percent to 33 percent by 2020, and further required that publicly owned utilities (POUs) and community choice aggregators (CCAs)— in addition to investor-owned utilities— comply. Under this regime, all electric load-serving entities were required to reach 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and to reach 33 percent by the end of 2020.

In 2015, Governor Brown signed SB 350, which added a new requirement that electric load-serving entities reach 50 percent renewables by 2030. At the time, Governor Brown explained that he was "deepen[ing] our commitment" since California had "taken groundbreaking steps to increase the efficiency of our cars, buildings and appliances" and had deployed "ever more renewable energy."

Since then, the California Public Utilities Commission (CPUC) and California Energy Commission (CEC) have worked to develop the policies, certification requirements and mechanisms to implement the RPS. If an entity fails to comply with the RPS in the time required, penalties may be imposed by the California Air Resources Board (CARB) or the CPUC.

Senate Bill 100

SB 100 further increases California's existing RPS standard such that under the new benchmarks, California's RPS requirement would change from 50 percent to 60 percent by 2030, and from 45 percent to 52 percent by 2027. SB 100 also takes the significant step of creating a new requirement that 100 percent of California's retail electric supply come from RPS eligible and zero carbon resources by December 31, 2045. Since the electricity sector only comprises a small percentage of California's CO2 emissions, EO B-55-18 complements SB 100 by tackling other industries large emitting industries such as transportation, buildings, and agriculture.

SB 100 was passed as Governor Brown is completing his final term, and its passage cements a clear contrarian message to Washington's climate policies. Senator De León, the bill's sponsor, stated:

> Today we send an unmistakable message to… the world. We agree climate change is real, it's here, it's deadly and it's extraordinarily expensive.

He further stated that the measure would increase business opportunities and assist in the development of important technologies.

Conclusion and Implications

California will have to work quickly to develop and deploy new technology solutions to meet these ambitious goals. It will particularly have to contend with the problem of intermittent renewable resources (*i.e.* the times of the day when there is insufficient solar or wind capacity to power the grid) as the electric grid moves towards a supply that is entirely reliant upon renewable energy resources. California will likely see a large push for battery and other storage systems to accommodate the load-shift, and will see an increasing demand for and investment in zero-emission vehicles, in addition to other carbon-reducing technologies. For the complete text of SB 100, *see:* https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100
(Lilly McKenna)

CALIFORNIA ADOPTS WILDFIRE PREVENTION AND EMERGENCY RESPONSE LEGISLATION

On August 31, 2018, the California legislature passed Senate Bill 901, which includes a bundle of measures focused primarily on wildfire prevention and emergency response. Its provisions range from the appropriation of funds for efforts relating to forest health, fire prevention, and fuel reduction, to a controversial measure that could allow utilities to pass along certain wildfire-related costs to ratepayers. Governor Brown signed SB 901 into law on September 21, 2018.

Background

California adopted SB 901 in the midst of yet another devastating wildfire season. The bill was introduced by Senator Bill Dodd, which represents some of the state's counties hardest hit by wildfires in recent years, including Napa and Sonoma counties. SB 901 was one of a number of wildfire-related bills signed by Governor Brown, as summarized in a September 21, 2018 press release from the Office of Governor. [https://www.gov.ca.gov/2018/09/21/governor-brown-signs-legislation-to-strengthen-wildfire-prevention-and-recovery/} With respect to SB 901, Governor Brown is quoted as stating:

> Wildfires in California aren't going away, and we have to do everything possible to prevent them. This bill is complex and requires investment—but it's absolutely necessary.

Summary of SB 901

Key provisions of SB 901 include several provisions summarized below.

Funding for Wildfire Prevention and Response

This section applies $25 million in previously appropriated funds to support activities directly related to regional response and readiness. Provides for two separate additional appropriations—one for $165 million and another for $35 million—to be made in each Budget Act through the 2023-24 fiscal year from the Greenhouse Gas Reduction Fund to CalFire, each for separately identified purposes relating to forest health, fire prevention, and fuel reduction.

New Requirements for Conservation Easements

This section requires (with certain limitations) that for any conservation easement comprised of forest lands that is purchased with state funds on or after January 1, 2019, the landowner must agree to maintain and improve forest health through certain measures such as promotion of more natural tree density, species composition, structure, habitat function and retention of larger trees.

Quantification of Carbon Emissions from Fuel Reduction Activities

This section requires the California Air Resources Board, in consultation with CalFire, to develop a standardized approach to quantifying the direct carbon emissions and decay from fuel reduction activities in order to meet the accounting requirements for expenditures from the state's Greenhouse Gas Reduction Fund and prepare a report that assesses greenhouse gas emissions associated with wildfire and forest management activities.

Creation of Wildfire Resilience Program

This section requires CalFire to create a program to assist nonindustrial timberland owners with wildfire resilience efforts by providing technical assistance on certain topics, including helping applicants to navigate the permitting process.

Modifications to Z'berg-Nejedly Forest Practice Act of 1973 Requirements

This section provides for modifications to and/or the addition of certain exemptions and exceptions to the Z'berg-Nejedly Forest Practice Act's requirements relating to various forest management activities and requires the state forestry board to adopt regulations implementing minimum fire safety standards that are applicable to lands classified and designated as very high fire hazard severity zones.

CEQA Exemption for Certain Management Activities

This section provides that, until January 1, 2023, under specified conditions, the California Environmental Quality Act (CEQA) would not apply to prescribed fire, thinning, or fuel reduction projects undertaken on federal lands to reduce the risk of high-severity wildfire that have been reviewed under the federal National Environmental Policy Act of 1969 (NEPA). The bill would also provide that CEQA would not apply to the issuance of a permit or other project approval by a state or local agency for these fire, thinning, or fuel reduction projects.

New Commission on Catastrophic Wildfire Cost and Recovery

This section establishes, within the Office of Planning and Research (OPR), a Commission on Catastrophic Wildfire Cost and Recovery to evaluate and make recommendations on matters relating to the costs and damage associated with catastrophic wildfires, including recommendations for changes to law to ensure equitable distribution of costs among affected parties.

Recovery of Wildfire Costs and Expenses Incurred by Utilities

This section prohibits electrical corporations from recovering a fine or penalty through a PUC-approved rate but would authorize the Public Utilities Commission (PUC), in an application by an electrical corporation to recover costs and expenses from a catastrophic wildfire, to allow cost recovery if the costs and expenses are "just and reasonable."

SB 901 Requirements for Utilities

SB 901 incudes several provisions applicable to utilities including additional requirements relating to wildfire mitigation plans, including preparation of mitigation plans by local publicly owned utilities and cooperatives and would require local publicly owned utilities and electrical cooperatives to implement mitigation measures if overhead electrical lines and equipment are located in an area that has a significant risk of wildfire resulting from those electrical lines and equipment.

Allowance for Rate Reduction Bonds

Under specific circumstances, authorizes the PUC, upon application by an electrical corporation, to issue financing orders to support the issuance of recovery bonds to finance costs, in excess of insurance proceeds, incurred, or that are expected to be incurred, by an electrical corporation, excluding fines and penalties, related to wildfires, as specified.

Fuel and Feedstock Requirements

This section expands fuels and feedstocks that are eligible to meet the wildfire risk reduction fuel and feedstock requirements of the California Renewables Portfolio Standard Program. Requires certain electrical corporations, local publicly owned electric utilities, and community choice aggregators with contracts to procure electricity generated from biomass

to seek to extend or renew such contracts, as long as they follow the feedstock requirement.

Conclusion and Implications

California experienced in 2018 extensive wildfires with some record breaking. Governor Brown ties these in part to climate change and expects this to be a new normal for the state. SB 901 was designed to address these costly and menacing "new normal" occurrences. More detailed information regarding SB 901 is available at the following location: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB901
(Nicole Martin)

CLIMATE CHANGE SCIENCE

RECENT SCIENTIFIC STUDIES ON CLIMATE CHANGE

Sequestration of Carbon through Improved Soil Quality

Addressing global climate change and reducing greenhouse gas concentrations in the atmosphere will require a multi-faceted approach. There are many high-tech approaches, such as zero carbon electricity production, electrification of cars and buildings, carbon capture and sequestration, and alternative fuels. However, not all approaches to addressing climate change have to be high tech. Low-tech land management practices also have the potential to capture carbon from the atmosphere in the soil to make a significant contribution to mitigating climate change.

A team at the University of California at Berkeley led by Whendee Silver, a Professor of Environmental, Science, Policy and Management, has found that well-established agricultural management practices such as planting cover crops, optimizing grazing, and sowing legumes on rangelands could capture a sizable quantity of carbon from the atmosphere. To understand the potential for land management practices to mitigate global warming, the researchers modelled the climate impact of various agricultural management approaches that are known to increase carbon sequestration in soil. As a first step, they calculated that under a scenario of aggressive reduction in carbon dioxide emissions, 750 million short tons of carbon per year would need to be sequestered to reduce temperatures 0.1 degree Celsius. Their analysis of existing studies of land management practices showed that improving soil quality could exceed this goal, largely through optimizing degraded agricultural and grazing lands that are already in use. Improving land management tends to increase the biomass of the crops and root systems, thereby increasing the carbon storage in the soil.

The researchers found in the best-case scenario, improved agricultural management could reduce global temperatures 0.26 degrees Celsius by 2100. To put this into perspective, the Intergovernmental Panel on Climate Change's goal of limiting the average temperature increase between now and the year 2100 is 1 degree Celsius. The goal of the research is to show that these already known low-tech approaches to land management can have a significant impact in climate change.

See, A. Mayer, Z. Hausfather, A. D. Jones, W. L. Silver. The potential of agricultural land management to contribute to lower global surface temperatures. *Science Advances*, 2018; 4 (8): eaaq0932 DOI: 10.1126/sciadv.aaq0932.

Understanding the Point of No Return for Enacting Climate Policy

Uncertainty in climate change science has shifted from a question of whether climate change will happen to one of how severe climate change will be. In 2015, officials representing 174 countries gathered at the 21st Conference of the Parties (COP21) and agreed to attempt to limit global average warming to 1.5oC. Since the signing of the accords, scientists have been working to assess both what policies can be enacted to ensure that this goal is met and by when the policy must be enacted.

One such study out of Oxford University and Utrecht University identifies the "point of no return" for setting renewable energy standards stringent enough to limit global average warming to 1.5oC and 2oC. The researchers focused on two achievable renewable energy policies: fast mitigation and moderate mitigation, in which the percent of energy generation from renewables increases by 2 percent and 5 percent annually, respectively. The researchers modelled the probability of staying below the warming limit in 2100 based on the starting year of the policy. When the probability of staying below the warming limit fell below a risk threshold of 67 percent, the starting year is considered the "point of no return" year. The study found that policy must be enacted by 2035 and 2045 for moderate and fast mitigation to avoid exceeding 2o of warming, respectively. To stay below 1.5oC warming, fast mitigation must be enacted by 2027; the point of no return for moderate mitigation has already passed. The researchers also included

scenarios where negative emissions such as carbon sequestration are included, but they determined that this only delays the point of no return by under a decade. Finally, the study looks at varying risk thresholds from 50-95 percent probability of staying under the warming limit. Perhaps unsurprisingly, the higher the probability of achieving the warming limit, the earlier the point of no return.

The results of this study emphasize the importance of enacting policies as soon as possible, but there are a few other considerations. First, the study only looks at carbon dioxide (CO2) and neglects any other greenhouse gases. This likely results in an overly optimistic point of no return, since other greenhouse gases contribute to warming. Second, the study only considers mitigation for the energy sector. If mitigation is applied across other greenhouse gas producing industries, it is likely that the point of no return will be delayed. Finally, this study shows that the goal of limiting warming can be achieved either by enacting policy earlier or enacting stronger policy. This provides resource-limited countries with a choice of implementing a weaker policy early or a stronger policy later.

See, Aengenheyster, M., et al. The point of no return for climate action: effects of climate uncertainty and risk tolerance, 2018. DOI: 10.5194/esd-9-1085-2018.

Achieving Deep Decarbonization Will Be Most Expensive Relying on Solar, Wind, and Batteries Alone

California just passed legislation that requires zero-carbon sources to provide 100 percent of electricity used in the state by 2045. Hawaii has a similar target, and several other states are not far behind in terms of renewable electricity mandates. Achieving high proportions of clean energy, termed "deep decarbonization," will require changes in the structure and performance of the electricity grid infrastructure and methods to shift electricity demand to periods of high renewables generation. While the costs of solar panels, wind turbines, and batteries have decreased dramatically over the past decades, the remaining cost to scale up these resources to provide the majority of electricity is subject to high levels of uncertainty.

Researchers from the Massachusetts Institute of Technology have modeled the costs of 1,000 scenarios of electricity source combinations that would achieve deep decarbonization. They incorporate projected low-, mid-, and high-range cost estimates for each technology in the coming decades. Rather than describing the electricity resources with the traditional terms of "baseload," "load following," and "peaking," they instead use a new taxonomy that better describes future electricity resources. New terms "fuel-saving" include solar, wind, and run-of-the river hydroelectric resources; "fast-burst" includes battery storage and demand response techniques that shift power needs; and "firm" resources include nuclear power, large hydropower, biogas, and geothermal. Under all cost scenarios, they find that the continued use of firm resources results in lower costs than relying on solely fuel-saving and fast-burst sources. Scenarios that restrict zero-carbon sources to solar, wind, load-shifting techniques, and upgrading high-voltage transmission lines increases total costs by 10 to 61 percent over scenarios that allow for continued use of firm resources.

While several studies have shown it is technically feasible to achieve a zero-carbon electricity grid, the marginal cost could make it economically infeasible if the set of power resources is overly restricted. In addition, while a zero-carbon electricity grid is an ambitious climate goal, true deep decarbonization will require major carbon reductions in other sectors such as transportation, which is most likely to be achieved by electrification of the transportation sector. Any increases in electricity cost may deter this transformation. Overall, this research reiterates that it is important that policy-makers understand the science and cost implications of choices or restrictions on power sources to be pursued in achieving a low-carbon electricity grid.

See, Sepulveda, N et al. 2018. The Role of Firm Low-Carbon Electricity Resources in Deep Decarbonization of Power Generation. *Joule*. DOI: 10.1016/j.joule.2018.08.006.

Drought-Stressed Ecosystems Absorb Less Carbon Dioxide than Previously Estimated

Typically, land ecosystems absorb around 30 percent of global anthropogenic carbon dioxide (CO2) emissions, serving as an important carbon sink in the global carbon cycle. Plants take in CO2 and water as part of normal photosynthetic growth. However, when plants are water-stressed, they undergo less photosynthesis and therefore capture less CO2. This is a

well-documented phenomenon in laboratory studies, however, it has been difficult to quantitatively measure these water-cycle and carbon-cycle interactions on a global scale.

A new study from ETH Zurich's Land-Climate Dynamics group documents a novel satellite method for assessing the impact of water stress on ecosystem carbon dioxide uptake. While most satellites can only track water dynamics at the Earth's surface, NASA's Gravity Recovery and Climate Instrument (GRACE) mission tracks extremely small perturbations in the Earth's gravitational field caused by changes in underground water storage. The research team used this data to measure the impact of water-stress on rates of photosynthesis and plant respiration. When comparing the interannual (year-to-year) changes in terrestrial water storage across the globe with global measurements of CO2 concentrations in the atmosphere, they found a significant difference in CO2 uptake between wet and dry years. For example, in 2015, which was an unusually dry year, global ecosystems removed 30 percent less CO2 and global CO2 concentrations increased at a faster rate than in a normal year.

These results are significant for numerous reasons. The rate of interannual CO2 concentration can vary significantly, while anthropogenic GHG-generating activities are relatively more stable. Thus, much of this year-to-year variability is due to changes in uptake from global carbon sinks. Therefore, understanding and correctly modeling mechanisms for uptake is important to track the impact of climate policies that aim to curtail global emissions and therefore reduce CO2 concentrations. These results, published in *Nature*, have shown that drought is an even stronger driver than conventional vegetative models predict. The current models are only responsive to shallow soil moisture, rather than deeper water storage, and may not consider changes to wetlands and surface waters. The findings from the research team's work will be included in the next iteration of these global models.

Further research is needed to improve projections of water storage, carbon uptake, and consequent changes to CO2 concentration. For example, vegetative models rely upon future estimates of water storage based on hydrological models that have large uncertainties. Additionally, it is not clear how plant respiration behavior itself may change as atmospheric CO2 concentrations continually increase. Future studies can build upon these results to better understand and model global linkages between the water cycle and the carbon cycle.

See, Vincent Humphrey, Jakob Zscheischler, Philippe Ciais, Lukas Gudmundsson, Stephen Sitch, Sonia I. Seneviratne. Sensitivity of atmospheric CO2 growth rate to observed changes in terrestrial water storage. *Nature*, 2018; 560 (7720): 628 DOI: 10.1038/s41586-018-0424-4
(David Kim, Libby Koolik, Malini Nambiar, Shaena Berlin Ulissi)

REGULATORY DEVELOPMENTS

EPA PROPOSES RULE TO REPLACE OBAMA ADMINISTRATION'S CLEAN POWER PLAN

On August 21, 2018, the U.S. Environmental Protection Agency (EPA) announced its proposal to replace the Clean Power Plan, adopted under the Obama administration, with the Affordable Clean Energy (ACE) Rule, aimed at establishing emission guidelines for states to develop plans to address greenhouse gas emissions from existing coal-fired power plants. According to the EPA, the ACE Rule:

> . . .replaced the prior administration's overly prescriptive and burdensome Clean Power Plan (CPP) and instead empowers states, promotes energy independence, and facilitates economic growth and job creation.

Background

On October 10, 2017, the EPA proposed the repeal of the Obama administration's CPP following President Trump's March 29, 2017 Energy Independence Executive Order, which directed the EPA to review the CPP for consistency with the policy set forth in that Order, providing in part that:

> . . .it is the policy of the United States that executive departments and agencies (agencies) immediately review existing regulations that potentially burden the development or use of domestically produced energy resources and appropriately suspend, revise, or rescind those that unduly burden the development of domestic energy resources beyond the degree necessary to protect the public interest or otherwise comply with the law. (Executive Order 13783, 82 Fed. Reg. 16093.)

In proposing the repeal of the CPP, the EPA stated that CPP exceeds the agency's authority under the Clean Air Act (CAA). (82 *Fed. Reg.* 48035.) Specifically, according to the EPA, Section 111 of the CAA requires the EPA to promulgate emission guidelines for existing sources that reflect the "best system of emission reduction" (BSER). According to the EPA, the CPP departed from the EPA's historic practice, as reflected in other CAA § 111 regulations that were based on a BSER consisting of technological or operational measures that could be applied to or at a single source:

> Instead, the CPP encompassed measures that would generally require power generators to change their energy portfolios through generation-shifting (rather than better equipping or operating their existing plants), including through the creation or subsidization of significant amounts of generation from power sources entirely outside the regulated source categories, such as solar and wind energy.

In proposing repeal of the CPP, the EPA stated that it is:

> . . .reconsidering the legal interpretation underlying the CPP and is proposing to interpret the phrase 'best system of emission reduction' in a way that is consistent with the Agency's historical practice of determining a BSER by considering only measures that can be applied to or at the source.

The Proposed ACE Rule

Echoing its 2017 proposal to repeal the CPP, the EPA asserts that the proposed ACE Rule:

> . . .aligns with EPA's statutory authority and obligation because . . . the BSER is to be determined by evaluating technologies or systems of emission reduction that are applicable to, at, and on the premises of the facility for an affected source.

As summarized by the EPA, the proposed ACE Rule is comprised of the following key components:

(1) a determination of the BSER for GHG emissions from existing coal-fired power plants;

(2) a list of "candidate technologies" states can use when developing their plans;

(3) a new preliminary applicability test for determining whether a physical or operational change made to a power plant may constitute a "major modification" triggering New Source Review under the CAA; and

(4) new implementing regulations for emissions guidelines under CAA Section 111.

According to the EPA, the proposed ACE Rule:

. . .will ensure that coal-fired power plants (the most carbon dioxide (CO_2) intensive portion of the electricity generating fleet) address their contribution to climate change by reducing their CO_2 intensity (*i.e.*, the amount of CO_2 they emit per unit of electricity generated).

According to the EPA, unlike the CPP, the ACE Rule would not promote divestments in coal in favor of renewables and natural gas. Rather than "shut[ting] down coal," the ACE Rule would "keep[ ] coal plants open and make[] them more efficient," and leave it to states to set their own standards that meet a federal guideline for emissions reductions.

Conclusion and Implications

Comments on the proposed ACE Rule are currently due by October 31, 2018. Additional information about the proposed ACE Rule, including how to submit comments, is available at the following location: https://www.epa.gov/stationary-sources-air-pollution/proposal-affordable-clean-energy-ace-rule. Additional information about the proposed repeal of the CPP is available at the following location: https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan. (Nicole Martin)

CALIFORNIA NATURAL RESOURCES AGENCY PUBLISHES STATE'S FOURTH CLIMATE CHANGE ASSESSMENT

On August 27, 2018, the California Natural Resources Agency published a 132-page report entitled "California's Fourth Climate Change Assessment" (Climate Change Assessment).

The Climate Change Assessment

The Climate Change Assessment states:

. . .includes over forty-four technical peer-reviewed reports that examine specific aspects of climate change in California, including projections of climate change impacts, analysis of vulnerabilities and adaptation for various sectors, and social and governance considerations for climate adaptation.

The Climate Change Assessment is intended to be used by groups ranging from the scientific research community and technical staff from local, regional, and state entities to local, regional, and state decision makers and stakeholders. The Climate Change Assessment is guided by five principles:

- Protection of the state's most vulnerable populations and communities
- Prioritization of natural infrastructure solutions
- Promotion and prioritization of integrated climate actions
- Coordination with local and regional governments
- Sustained monitoring and research to increase ability to understand and manage climate change impacts

Some of the key findings from the Climate Change Assessment are highlighted below.

Temperature

The Climate Change Assessment projects an average annual maximum daily temperature increase of between 5.6 degrees and 8.8 degrees by 2100. This rise in temperature has public health impacts, with an increase in mortality rates and illnesses, and significant economic impacts. For example, the Climate Change Assessment estimates approximately $1 billion in increased transportation costs (paving/asphalt) between 2040 and 2070 and approximately $1 billion per year in increased energy costs by 2050.

Water Supply

A major source of water supply for California is its snowpack, but the Climate Change Assessment projects a two-thirds decline in water supply from California's snowpack by 2050. Economic water shortage impacts range from a low of $100 million per year to $1 billion per year. For agricultural production, the Climate Change Assessment estimates that the snowpack supply reduction and hotter conditions could lead to water shortages of up to 16 percent in certain regions of the state.

The Climate Change Assessment notes that although technical solutions have the potential to address the projected declines in water supply, the solutions depend on a number of factors, including funding and the state's legal and political landscape. California's varied water management and governance system also presents a challenge because water suppliers include both public and private entities.

Wildfires

California suffered through more devastating wildfires in 2018. The Climate Change Assessment notes that if greenhouse gas emissions continue to rise, then, by 2100, the frequency of extreme wildfires will increase. According to the Assessment, the average area burned statewide would also increase by 77 percent. This environmental impact also has a corresponding economic impact because the Climate Change Assessment estimates an increase in wildfire insurance costs of 18 percent by 2055 in areas that have the highest fire risk. In addition, wildfires could cost utilities $47 million per year due to damages to their transmission and distribution infrastructure.

Sea Level Rise

California's coast is treasured by Californians and visitors alike. This makes the Assessment's estimates on sea level rise particularly frightening. According to the Assessment, from 31 percent to 67 percent of southern California beaches "may completely erode by 2100 without large-scale human interventions," with conditions worsening if a 100-year costal flood event occurs. The Climate Change Assessment notes that although some areas subject to sea level rise will implement strategies to minimize the impacts from sea level rise, and by 2050, many localities may begin to consider retreat as an option, which may require an expansion of inland cities.

While the environmental impact itself is worrisome, the economic impact is also alarming. The Climate Change Assessment estimates that, by 2050, $48 billion worth of coastal properties could be impacted statewide, with economic impacts to southern California beaches ranging from $40 million to $63 million per year. In addition, inland flooding costs could total $42 billion.

Conclusion and Implications

The Climate Change Assessment is intended to serve as an informational document detailing the potential climate change impacts to California in the coming years. The Climate Change Assessment also includes information on the state's efforts to prepare for these impacts by taking actions that will reduce the acute and long-term effects of climate change while building the state's climate change resiliency. As a result, the Climate Change Assessment serves as a valuable reference guide for California's ongoing efforts to meet its climate change goals. For more information, *see:* http://resources.ca.gov/climate/safeguarding/; and *see:* http://resources.ca.gov/climate/safeguarding/research/
(Kathryn Casey)

PENALTIES & SANCTIONS

RECENT INVESTIGATIONS, SETTLEMENTS, PENALTIES AND SANCTIONS

Editor's Note: Complaints and indictments discussed below are merely allegations unless or until they are proven in a court of law of competent jurisdiction. All accused are presumed innocent until convicted or judged liable. Most settlements are subject to a public comment period.

Civil Enforcement Actions and Settlements—Air Quality

•September 18, 2018—The U.S. Environmental Protection Agency (EPA) has reached a settlement with the Sacramento Regional County Sanitation District for chemical safety and risk management violations at the Sacramento Regional Wastewater Treatment Plant. The sanitation district will pay a $37,830 civil penalty and make improvements to its risk management practices. As part of the settlement, the sanitation district will also spend an estimated $100,500 in support of emergency planning and preparedness programs in the city and county of Sacramento. The sanitation district will provide the County of Sacramento Environmental Management Department with an incident response vehicle, portable radios, and response gear. The Sacramento Metropolitan Fire District will receive a handheld device for identifying chemicals. The Sacramento Regional Wastewater Treatment Plant is located on Laguna Station Road in Elk Grove, California. The facility treats wastewater from the cities of Sacramento, Folsom, West Sacramento, Elk Grove, Rancho Cordova, and Citrus Heights; the communities of Courtland and Walnut Grove; and unincorporated Sacramento County. EPA inspected the treatment plant in May 2016 and found facility staff had not immediately notified the National Response Center of three separate releases of chlorine in 2013 and 2014, in violation of the federal Comprehensive Environmental Response, Compensation, and Liability Act's reporting requirements. Facility staff had not complied with EPA's risk management program regulations, in violation of the Clean Air Act. Proper implementation of risk management programs helps prevent and control chemical releases at facilities that store large amounts of regulated substances. Violations at the treatment plant included failure to perform certain equipment tests and inspections and failure to adequately investigate a release of chlorine. In addition to the civil penalty, the settlement requires the sanitation district certify that certain equipment complies with risk management plan requirements, update the piping and instrument diagrams included in its risk management plan, and arrange for a third-party audit after upgrading the gas management system.

•September 12, 2018—The City of Manchester, New Hampshire, will install equipment to limit the amount of mercury pollution emitted from a city-owned incinerator under an agreement between the city, the U.S. Environmental Protection Agency and the U.S. Department of Justice. The city estimates it will spend more than $6 million to comply with the terms of this settlement, which includes installing and operating pollution control equipment at the incinerator. The consent decree lodged in the U.S. District Court for the District of New Hampshire, provides a July 11, 2019 deadline, for the facility to commence operation of a mercury control system, and requires that the facility meet all other related Clean Air Act regulations by January 12, 2020. In the interim, Manchester will take measures to limit the mercury content of sewage sludge received at the incinerator. The facility will also pay a civil penalty of $131,800. The City of Manchester sewage sludge incinerator processes sewage waste from Manchester and three neighboring communities. Incineration of sewage sludge results in emissions of various pollutants, including mercury, dioxins and furans, cadmium, lead, and carbon monoxide. Under federal Clean Air Act rules that became effective in 2016, owners of sewage sludge incinerators must meet stringent emissions standards for 10 pollutants, must test their emissions, and must institute procedures to limit emissions. The Manchester facility failed to meet the compliance deadline for mercury emissions and for various other requirements of the rules. The City

of Manchester worked with EPA on the compliance plan and schedule, set forth in the proposed consent decree, which are designed to ensure it complies with the emissions standards for all 10 pollutants.

Civil Enforcement Actions and Settlements—Water Quality

•September 5, 2018—The U.S. Environmental Protection Agency has finalized an administrative order with the Los Angeles Department of Water and Power (LADWP) over federal Clean Water Act (CWA) violations. Under the terms of the order, LADWP will purchase $5.3 million in mitigation credits for damaging wetlands on its Granada Hills property. LADWP will also pay a $94,000 penalty. EPA, along with the U.S. Army Corps of Engineers (Corps) and the California Department of Fish and Wildlife, conducted an inspection in 2016 and found extensive vegetation clearing and soil displacement on the property, located in the San Fernando Detention Basin. Inspectors concluded that between 2013 and 2016, almost eight acres of open water and adjacent wetlands in the basin had been graded, filled and channelized without a proper permit. LADWP will purchase $5.3 million in mitigation credits at the Peterson Ranch Mitigation Bank. Mitigation banking is used to preserve, enhance, restore or create a wetland to compensate for adverse impacts to similar nearby ecosystems. Under the Clean Water Act, companies must obtain a permit from the Army Corps of Engineers before discharging pollutants including dredge and fill materials into waters of the United States, which include wetlands. The proposed penalty is subject to a 30-day public comment period

•August 20, 2018—The U.S. Department of Justice (DOJ) and the U.S. Environmental Protection Agency Region 7 have entered into a consent decree with Ag Processing, Inc. (AGP) to ensure compliance with oil pollution prevention requirements of the Clean Water Act. As part of the settlement, the company has agreed to implement specific preventative measures to ensure future compliance and improve accidental spill response. EPA inspectors identified CWA violations at eight large vegetable oil and biodiesel production, processing, refining, and storage facilities in Sheldon, Manning, Algona, Everly, and Eagle Grove in Iowa; Hastings, Nebraska; and Dawson, Minnesota. The eight facilities have a storage capacity greater than 1 million gallons, from which a discharge of oil to navigable waters could cause substantial harm to the environment. These facilities are required to prepare and submit a Facility Response Plan (FRP), and are subject to the Spill Prevention, Control, and Countermeasure (SPCC) rule. At each facility, AGP has agreed to work with EPA Region 7 to ensure compliance with SPCC and FRP regulations, as well as contract with a third party to conduct compliance audits. Additionally, AGP has agreed to install and maintain an electronic level monitoring and control system on seven large, crude soybean oil storage tanks at its Everly and Emmetsburg facilities in Iowa. The estimated $200,000 monitoring system project will provide additional benefits and safeguards at the facilities including real-time continuous monitoring of high and low tank levels; and audible alarms and cutoff switches that will de-energize the equipment from pumping further oil into the tanks when high levels are reached. The electronic system will provide AGP continuous monitoring over the tanks and enhance ability to prevent tank overflows and protect nearby waterways. AGP will also be required to pay a civil penalty of $500,000. Seven of the eight facilities were found to be in noncompliance with maintaining a proper FRP. A proper FRP is critical in providing an action plan for facilities storing large quantities of oil, and demonstrates a facility's preparedness to respond to an oil release and a worst-case discharge scenario. Additionally, five of the facilities exhibited a failure to comply with the SPCC rule. SPCC's are important to help facilities mitigate discharges of oil into navigable waters. The SPCC rule requires facilities to develop, maintain and implement an oil spill prevention plan. These plans help facilities prevent oil spills, as well as control a spill should one occur.The consent decree is subject to a 30-day public comment period and approval by the federal court.

Indictments Convictions and Sentencing

•September 12, 2018—Company in California Agrees to Pay Clean Water Act Fines, Mitigate Impacts to Sensitive Streams and Wetlands—Goose Pond Ag, Inc., a Florida corporation, and its manager of operations Farmland Management Services, Inc., an affiliate of the John Hancock Life Insurance Company, have agreed to pay a civil penalty, preserve streams and wetlands, and perform mitigation to re-

solve violations of the Clean Water Act on property near the Sacramento River located in Tehama County, California, the Justice Department announced today. The property in this case was acquired from Duarte Nursery Inc. and adjoins a Duarte site that was the subject of a settlement agreement announced by the Justice Department in August 2017 and approved by a federal judge on December 7, 2017. Goose Pond Ag and Farmland Management Services have agreed to pay $5.3 million in civil penalties and mitigation for substantial acres of disturbed streams and wetlands on the property that are connected to the Sacramento River. In addition, the settlement requires the companies to permanently preserve hundreds of acres of streams, wetlands, and buffer areas. The agreement allows the companies to continue using the site for cattle grazing, to apply for a CWA permit to conduct other activities in jurisdictional waters on the site, and to seek future determinations concerning jurisdictional waters at the site. This case stems from activities these companies conducted after they purchased property that had laid fallow and unfarmed for more than 20 years. Goose Pond bought the 1,500-acre property in 2012 from Duarte Nursery, Inc. for $8.7 million, and shortly thereafter, Farmland Management Services began operating heavy machinery through streams and wetlands as part of the companies' efforts to convert the property to a walnut orchard. That machinery included "deep rippers" that drag long metal shanks through the ground to break up or pierce highly compacted, impermeable or slowly permeable surface layers, or other similar kinds of restrictive soil layers. The deep ripping in this case destroyed or significantly degraded the streams and wetlands at the site. Even before Goose Pond's purchase of the site, the companies received aerial photographs, advice from environmental consultants, and other information that alerted them to federally-protected streams and wetlands on the property. Despite that information, the companies conducted extensive ripping and other activities in streams and wetlands without a CWA dredge-or-fill permit. The settlement agreement reached today secures a significant penalty and mitigation for these violations, while providing fairness for farmers and other landowners who comply with the applicable laws. Last year, in resolving a related case against John Duarte and Duarte Nursery, Inc., who had conducted unpermitted ripping activities immediately south of the property at issue here, the United States gave assurances that these cases are not (and will not be used as) a pretext for federal prosecution of farmers who engage in normal plowing on their farms. No federal dredge-or-fill permit is required for plowing as defined in the regulations, and no such permit is required for discharges from "normal farming ... activities," such as plowing, if they are part of an established ongoing farming operation and not for the purpose of converting federally protected waters to new uses. Those protections for farmers remain in the law today and will continue to be recognized. The proposed consent decree, lodged in the U.S. District Court in Sacramento, is subject to a 30-day comment period and final court approval.

•September 7, 2018—United States Files Complaint Against Hawaii Fishing Companies, Managers, and Vessel Operator Over Illegal Oil Discharges and Lodges Partial Settlement With Managers—The United States filed a civil enforcement action against Azure Fishery LLC, the company's managers, the operator of the commercial fishing vessel Jaxon T, and the new owner of the vessel for violations of the federal Clean Water Act, the Department of Justice and U.S. Coast Guard announced today. Along with the filing of the complaint, the United States also lodged a partial settlement to resolve the claims against the two company managers, Hanh Nguyen and Khang Dang, who have agreed to pay $475,000 in civil penalties and reimbursements. The managers also committed to perform operational improvements and other compliance measures to their entire fleet of 25-longline fishing vessels based in Honolulu. The claims against the rest of the defendants remain for future adjudication. The complaint, filed in the U.S. District Court for the District of Hawaii today, alleges five causes of action against six defendants: Azure Fishery LLC, company managers Nguyen and Dang, company member and prior owner Tuan Hoang, vessel operator Andy Hoang and current owner Linh Fishery LLC. The complaint alleges willful discharges of oil, including oily bilge water, from the commercial longline fishing vessel Jaxon T, now known as the St. Joseph, into the ocean offshore of Hawaii, as well as related violations of the Coast Guard's longstanding spill prevention and pollution control regulations, including failure to provide sufficient capacity to retain all oily mixtures on board. The complaint further alleges that in order to extend the length of

fishing voyages, the defendants routinely pumped a mixture of fuel oil, lubricating oils, water, and other fluids from the vessel's engine room bilge into the Pacific Ocean rather than retain the waste on board. The United States alleges that Azure Fishery LLC and the company managers and vessel operator are each liable for civil penalties under the Clean Water Act for discharging oily mixtures into the waters off Hawaii. The United States also seeks injunctive relief from these same defendants and Linh Fishery LLC, the current owner of the vessel. The complaint further alleges that company managers Nguyen and Dang fraudulently transferred the vessel to the current owner, Linh Fishery LLC, shortly after the Coast Guard discovered the violations in March 2017. Because the sale of the vessel and distribution of the proceeds to company members rendered Azure Fishery LLC insolvent and thus otherwise unable to pay a civil penalty, the complaint seeks recovery of the value of the fraudulently transferred vessel from the beneficiaries of the transfer, Linh Fishery LLC, Hanh Thi Nguyen, Khang Nguyen Dang, and Tuan Ngog Hoang, under the Federal Debt Collection Procedures Act (FDCPA), 28 U.S.C. § 3001 *et seq*. Contemporaneously with the filing of the complaint, the United States has lodged a partial consent decree addressing the claims against company managers Nguyen and Dang. Under the settlement, Nguyen and Dang will each pay $211,000 for the Clean Water Act penalty claims against them and they will jointly pay an additional $53,000 for their apportioned share of the fraudulent transfer claim under the FDCPA. Moreover, they will perform corrective measures across their fleet of 25 Hawaii-based longline fishing vessels. The corrective measures are designed to ensure safe and lawful operations going forward and include: 1) repairing the vessels to reduce the quantity of oily waste generated during a fishing voyage; 2) obtaining independent verification of repairs; 3) providing crewmembers with training on the proper handling of oily wastes; 4) documenting proper oily waste retention during voyages and disposal after returning to port; and 5) submitting periodic compliance assurance reports to the Coast Guard and the Department of Justice. Section 311(b) of the Clean Water Act makes it unlawful to discharge oil or hazardous substances into or upon the waters of the United States or adjoining shorelines in quantities that may be harmful to the environment or public health. Under the act, the Coast Guard also has promulgated spill prevention and pollution control regulations for vessels and other facilities. Overboard discharges of oily mixtures, whether by directly pumping out oily bilge water that has not been properly treated, or by attempting to pump only the portion of the oily bilge water beneath a floating oil layer in the bilge (so-called decanting), has long been unlawful under federal law. Eliminating oil discharges into the ocean helps protect people, birds, fish, marine mammals, sea turtles and other natural resources. Under the terms of the Clean Water Act, the penalties paid for these violations will be deposited in the federal Oil Spill Liability Trust Fund managed by the National Pollution Funds Center. The Oil Spill Liability Trust Fund is used to pay for federal response activities and to compensate for damages when there is a discharge or substantial threat of discharge of oil or hazardous substances to waters of the United States or adjoining shorelines. The proposed partial consent decree, lodged in the District of Hawaii, is subject to a 30-day public comment period and court review and approval.

• August 27, 2018—Ohio Man Sentenced to 63 Months in Prison for Renewable Fuel Fraud—The owner of a company that bought and sold renewable fuel and fuel credits was sentenced to serve 63 months in prison to be followed by a three year term of supervised release and $26,244,437.06 in restitution for his role in a conspiracy that generated over $47 million in fraudulent EPA renewable fuels credits and over $12 million in fraudulent tax credits connected to the purported production of renewable fuel. The sentencing of defendant Gregory Schnabel was imposed by The Honorable Judge James L. Graham for the U.S. District Court for the Southern District of Ohio and was announced by Acting Assistant Attorney General Jeffrey H. Wood for the Justice Department's Environment and Natural Resources Division; U.S. Attorney Benjamin C. Glassman for the Southern District of Ohio; Special Agent in Charge Ryan L. Korner of the Internal Revenue Service (IRS) Criminal Investigation; Acting Special Agent in Charge John K. Gauthier, of the Environmental Protection Agency (EPA), criminal enforcement program in Ohio; and Special Agent in Charge Grant Mendenhall of the Federal Bureau of Investigation's Indianapolis Division. According to

information disclosed during the court proceedings, Schnabel, owner of GRC Fuels of Oneonta, New York, engaged in a scheme with other co-conspirators to fraudulently claim EPA renewable fuels credits (also known as "RIN" credits) and tax credits on fuel that did not qualify for the credits, on fuel that had already been used to generate credits, and on fuel that was exported or otherwise used contrary to EPA and IRS regulations. Schnabel bought and sold fuel and RINs from several individuals who have already pleaded guilty for their roles in the scheme, including: Fred Witmer and Gary Jury, formerly of Triton Energy, who pleaded guilty in the Northern District of Indiana to conspiracy, fraud, and false statements and were sentenced to 57 months' and 30 months' incarceration, respectively; Malek Jalal, formerly of Unity Fuels, who pleaded guilty in the Southern District of Ohio to conspiracy and obstruction of justice and was sentenced to 60 months' incarceration; and Dean Daniels, William Bradley, Ricky Smith, and Brenda Daniels, of New Energy Fuels and Chieftain Biofuels, who pleaded guilty in the Southern District of Ohio to conspiracy and were sentenced to terms of incarceration ranging from 12 months to 63 months. This case was prosecuted by Assistant U.S. Attorney J. Michael Marous for the Southern District of Ohio, and Trial Attorney Adam Cullman and Senior Trial Attorney Jeremy Korzenik of the Environment and Natural Resources Division. The prosecution is the result of an investigation by the IRS, EPA-CID, and the FBI.
(Andre Monette)

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JUDICIAL DEVELOPMENTS

D.C. CIRCUIT BLOCKS EPA'S USE OF RULEMAKING AUTHORITY TO DELAY EFFECTIVE DATE OF CLEAN AIR ACT ACCIDENTAL RELEASE REGULATIONS BEYOND STATUTORY LIMITATIONS

Air Alliance Houston v. U.S. Environmental Protection Agency, ___F.3d___, Case No. 17-1155 (D.C. Cir. Aug. 17, 2018).

In a *per curiam* opinion, the U.S. Court of Appeals for the D.C. Circuit determined it is improper for the U.S. Environmental Protection Agency (EPA) to use its general rulemaking authority to further delay the effective dates of accidental release prevention regulations under the federal Clean Air Act (CAA). EPA has twice-delayed the effective dates during reconsideration proceedings, despite a three-month limitation on such delays.

Factual and Procedural Background

On January 13, 2017, following public notice and comment, the EPA issued the Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act (Chemical Disaster Rule), 82 *Fed. Reg.* 4594-01 (Jan. 13, 2017). The Chemical Disaster Rule, *inter alia*, revised accidental release prevention requirements in three major areas: 1) accident prevention; 2) emergency response; and 3) public information disclosure. The Chemical Disaster Rule's overall effective date was set at March 14, 2017, with some provisions having later effective dates.

EPA delayed the effective date of the Chemical Disaster Rule three separate times. Relevant to the court's decision, on March 16, 2017, EPA stayed the effective date for 90 days until June 19, 2017 (90-Day Stay). 82 *Fed. Reg.* 13968-02 (Mar. 16, 2017). On June 14, 2017, EPA again delayed the effective date by 20 months to February 19, 2019 (Delay Rule). 82 *Fed. Reg.* 27133-01 (June 14, 2017).

As authority for promulgating the Delay Rule, the EPA cited §§ 307(d)(7)(B) and 112(r)(7) of the Clean Air Act. Section 112(r)(7)(A) grants the EPA general rulemaking authority over accidental release prevention requirements. Where the EPA issues a regulation pursuant to § 112(r)(7)(A), the regulation must "have an effective date … assuring compliance as expeditiously as practicable." Section 307(d)(7)(B) requires EPA to reconsider a rule, in part, where a petitioner demonstrates that it was impracticable to raise an objection within the notice and comment period. Section 307(d)(7)(B) also provides, however, that reconsideration must not postpone the effective of the rule, but that the effectiveness of the rule may be stayed during reconsideration for a period not to exceed three months.

According to the EPA, the 90-Day Stay "was insufficient to complete the necessary steps in the reconsideration process for the Chemical Disaster Rule," and, therefore, the 20-month delay of the Chemical Disaster Rule was necessary. In a petition for review of the Delay Rule, several community and environmental groups, including Air Alliance Houston (Community Petitioners), and several states (State Petitioners) challenged the EPA's authority to further delay the effective date of the Chemical Disaster Rule under §§ 307(d)(7)(B) and 112(r)(7).

The D.C. Circuit's

On August 17, 2018, the D.C. Circuit held that: 1) the both the Community Petitioners and the State Petitioners had standing under Article III of the U.S. Constitution to bring the petition for review of the Delay Rule, 2) the EPA did not have the authority under §§ 307(d)(7)(B) and 112(r)(7) to delay the effective date of the Chemical Disaster Rule for 20 months for the purpose of reconsideration, and 3) the EPA acted arbitrarily and capriciously in doing so. Accordingly, the court vacated the Delay Rule.

Standing

First, the court considered whether the Community Petitioners and State Petitioners had the requisite standing to bring the petition for review of the Delay Rule. As to the Community Petitioners' standing, the

court determined, in part, that living and working with a higher risk of harms caused by accidental releases than would exist if the Chemical Disaster Rule became effective on time is an injury "particularized to the chemical plant workers such as the United Steelworkers' members" and "directly traceable to the Delay Rule."

As to the State Petitioners' standing, the court held that the State Petitioners' "[m]onetary expenditures to mitigate and recover from harms that could have been prevented absent the Delay Rule" constituted "independent proprietary interests in avoiding chemical releases in their territory sufficient to support standing" given that they are "incurred by the [states themselves]."

EPA Authority to Delay

The court next considered whether the EPA had authority under §§ 307(d)(7)(B) and 112(r)(7) to delay the effective date of the Chemical Disaster Rule for 20 months for the purpose of reconsideration. The court noted that, while § 307(d)(7)(B) allows EPA to stay the effectiveness of a regulation while during reconsideration proceedings, this section expressly limits the permissible length of any such stay to "a period not to exceed three months." The EPA claimed that § 307(d)(7)(B) merely limited the length of a stay and did not restrict the length of reconsideration generally. The court did not give deference to EPA's interpretation, finding it contrary to the plain meaning of the section, as well as its legislative history. Thus, the court determined that the 90-Day Stay exhausted EPA's authority to delay the Chemical Disaster Rule because "the Delay Rule is the functional equivalent of a stay under [section 307(d)(7)(B)]."

Moving to § 112(r)(7), the court first noted that, while § 112(r)(7) grants the EPA general rulemaking authority over accidental release prevention requirements, such authority is limited to substantive amendments. The court then highlighted EPA's admission in the preamble to the Delay Rule that it "made no substantive decisions demanded by [section 112(r)(7)]." In the same vein, the court determined that EPA's reasoning with respect to the necessity of an additional 20-month delay:

> . . .does not relate to what is 'practicable' for compliance by regulated sources; its explanation relates to its own 'unidentified, new 'policy preferences' and the mere fact of reconsideration.

Accordingly, the court held that it would be unreasonable to interpret § 112(r)(7) as allowing the EPA to further delay the Chemical Disaster Rule for the purpose of reconsideration through its general rulemaking authority. Such interpretation would "render illusory" § 307(d)(7)(B)'s limitation.

Arbitrary and Capricious Standard

Lastly, the court determined that EPA acted arbitrarily and capriciously in issuing the Delay Rule, citing three reasons. First, the court noted that the EPA's sole justification for the 20-month delay was its reconsideration and that noted that:

> . . .reconsideration, alone, is not a sufficient basis to delay promulgated effective dates specifically chosen by the EPA on the basis of public input and reasoned explanation, particularly where the statute requires the agency to 'assur[e] compliance as expeditiously as practicable.'

Second, the court noted that EPA failed to "rationally explain" its departure from its stated reasoning in setting the original effective and compliance dates. Third, the court concluded it was impermissible for EPA to delay the entire Chemical Disaster Rule on the basis that one explosion may have been caused by something other than an accident.

Conclusion and Implications

While the EPA's general rulemaking authority under the CAA may be broad, it is nevertheless limited. EPA cannot use its general rulemaking authority to effectively circumvent express limitations of a statutory scheme. Importantly, in analyzing whether EPA action comports with statutory requirements, courts may evaluate EPA's reasons for acting against the text of a regulation and also the function of the regulation. This decision also reflects a disfavor of any efforts by EPA to use general procedural mechanisms to change the impact of substantive rules, which have already been promulgated pursuant to the Administrative Procedure Act. The court's decision is available online here: https://www.cadc.uscourts.gov/internet/opinions.nsf/D635BFF007DFAA56852582EC00509B00/$file/17-1155-1746106.pdf
(Rebecca Andrews)

CALIFORNIA SUPERIOR COURT JURY FINDS PIPELINE COMPANY GUILTY OF FELONY AND EIGHT MISDEMEANOR CHARGES IN RELATION TO OIL SPILL

The People of the State of California v. Plains All American Pipeline, L.P., James Colby Buchanan, Case No. 1495091 (Santa Barbara Sup. Ct. Sept. 2018).

After a four-month trial, a California jury recently found Plains All American Pipeline LP (Plains All American) guilty for one felony and eight misdemeanor charges in connection with its oil pipeline rupture in Santa Barbara County in 2015. The verdict found Plains All American guilty of one felony charge for discharging a pollutant into state waters, and for eight misdemeanor charges for the loss of wildlife . The company will be sentenced on December 13, 2018 and, if the Superior Court upholds the jury verdict, could face at least $1.5 million in penalties. The criminal charges are cause for infrastructure companies and pipeline companies in particular to carefully evaluate maintenance practices, and may give cause for opposition parties to slow infrastructure projects currently under way or in development.

Background

On May 19, 2015, a section of Plains All American pipeline Line 901, a 10.6-mile pipeline, ruptured in Santa Barbara County. The spill resulted in the release of over 140,000 gallons of crude, or, as many as 3,400 barrels of crude per the company's count, onto the Refugio State Beach in Santa Barbara County, which is a national marine sanctuary and a state-designated underwater preserve for whales, dolphins, sea lions and marine birds. The incident was the area's largest oil spill since 1969, when 100,000 barrels of crude spilled into California's Santa Barbara Channel.

The spill was caused by corrosion on the pipeline, as identified by federal pipeline safety officials in a 'root cause' report that was conducted after a California grand jury first indicted Plains All American in 2016 on 46 criminal charges. The initial 46 charges that Plains All American faced were reduced to 13 over the course of the trial. Of the remaining charges, the jury found Plains All American guilty of eight misdemeanor charges and one felony charge, declared a mistrial of three, and acquitted Plains American Pipeline of one charge.

The Jury Findings

The jury found Plains All American guilty on the following counts:

- Count 1: Felony charge that Plains All American knowingly engaged or caused oil to spill into state waters.

- Count 4: Misdemeanor charge that Plains All American knowingly made a false or misleading oil spill report to the California Office of Emergency Services.

- Count 7: Misdemeanor criminal charge that Plains All American failed to immediately report any release or threatened release of a hazardous material to

- Count 9: Misdemeanor criminal charge that Plains All American unlawfully allowed a substance/material hazardous to fish, plant and bird life to spill into state waters and beach.

- Count 10: Misdemeanor charge that Plains All American unlawfully took a California Sea Lion.

- Count 11: Misdemeanor charge that Plains All American unlawfully took a common dolphin.

- Count 12: Misdemeanor charge that Plains All American unlawfully took a common dolphin.

- Count 14: Misdemeanor charge that Plains All American unlawfully took a California Sea Lion.

- Count 15: Misdemeanor charge that Plains All American unlawfully took a California Sea Lion.

The jury declared a mistrial on the following three counts:

•Count 2: Felony criminal charge that Plains All-American knowingly discharged a pollutant into state waters.

•Count 3: Felony criminal charge that Plains All-American knowingly caused a hazardous substance to be deposited on roadways, railways, and land of another without permission of the owner.

•Count 13: Misdemeanor criminal charge that Plains All-American unlawfully took a California sea lion.

The Jury acquitted Plains All American of Count 8, a misdemeanor charge that Plains All American unlawfully deposited or permitted oil or residuary product of petroleum to enter state waters.

In a press release, Attorney General Xavier Becerra stated:

> Engaging in this kind of reckless conduct is not just irresponsible—it's criminal. Today's verdict should send a message: If you endanger our environment and wildlife, we will hold you accountable.

Statement by Plains All American

Plains All American issued a statement that it "accept[s] full responsibility for the impact of the accident [and is] committed to doing the right thing." However, the company noted that "the jury did not find any knowing misconduct by Plains with respect to the operation of Line 901," and maintains that its operations on Line 901 met or exceeded legal and industry standards. Plains All American stated that it:

> . . .believe[s] that the jury erred in its verdict on one count where applicable California laws allowed a conviction under a negligence standard.

Plains All American said it intends "to fully evaluate and consider all of [its] legal options with respect to the trial and resulting jury decision."

Conclusion and Implications

Sentencing is scheduled for December 13. Since the company was charged (and not a person), there is no possibility of jail time but the fines could reach at least $1.5 million if the court upholds the jury verdict. Plains states that it has already spent approximately $150 million in clean up, and further estimates that the total company cost from the incident, including actual and projected cleanup costs, emergency response, settlements from third-party claims, penalties, is closer to $335 million.

For companies in this industry, the verdict is a wake-up call that policies to ensure safety oversight and infrastructure maintenance cannot be overlooked, and that companies may even need to go above and beyond what state or federal regulators require to ensure operational safety of energy infrastructure. The verdict is also significant in showing that criminal charges may result not only where human fatalities are involved as with the San Bruno explosion of a PG&E gas line in 2010, but also where the failure to adequately maintain energy infrastructure results in significant harm to the environment.
(Lilly McKenna)

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