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FEATURE ARTICLE

CALIFORNIA WATER COMMODITIZED?—
A NEW PRICING INDEX EMERGES ON THE NASDAQ

By Derek Hoffman and Michael Duane Davis

On the first day of one esteemed university economics course, a professor circulates physical objects around the classroom for students to heft and examine—things like corn, wheat, soybeans, gold, silver, copper, spices and wood. These items, the lesson goes, are valuable natural resources. They also comprised the means of trade in the earliest of civilizations—gold for wheat; spices for wood—that is, until the concept of *money* took hold as the primary currency of trade. “Currency” is commonly defined as the fact or quality of being generally accepted or in use. So long as money is “generally accepted” and “in use” in the marketplace, those with gold can simply *buy* wheat. Those with spices can simply *buy* wood. No longer must one commodity be directly exchanged for another.

In today’s sophisticated and global marketplace, thousands if not millions of commodities transactions occur daily. Data-driven financial indexes inform buyers and sellers regarding commodity prices. Tradable financial instruments enable transactions not only to meet today’s commodity demands but also future demands, and can hedge against anticipated fluctuations in price and availability.

But what about water? More specifically, what about California water? Is it—or should it be—considered a commodity? How does such a characterization reflect and respect established water rights, laws and regulations? How are—or should—water rights transactions be priced, and based on what types and quality of information?

A New Index on the NASDAQ®

Indexes have long existed to track value and provide investors with access to *companies and utilities*

that develop, produce, treat and supply water resources (e.g.: S&P Global Water Index, ticker symbol: SPGTAQD). Likewise, indexes for commodities like those mentioned above are ubiquitous.

On October 31, 2018, a new index emerged. The NASDAQ Veles California Water Index (ticker symbol: NQH20) (NQH20 or Index) tracks what it describes as the “spot price” of *water* in California based on certain types of groundwater and surface water transactions in specific California water markets. Veles Water Limited’s (Veles) Chief Executive Officer expects the Index:

...to facilitate tradeable cash-settled futures contracts within [a year] to allow farmers, utilities and industrial water users to hedge the financial risk of volatile water availability [and] provide investors with a means to speculate on the future price of water without taking on the underlying risk of owning assets. (See, <https://www.globalwaterintel.com/news/2019/2/california-water-pricing-index-launches-on-nasdaq>, last visited February 21, 2019.)

NQH20 was developed and is maintained by NASDAQ, Veles and WestWater Research LLC (WestWater). NASDAQ created the world’s first electronic stock market and today provides global trading, clearing, exchange technology, listing, information, and public company services, including supporting more than 100 marketplaces in 50 countries and over 4,000 total listings with a market value of approximately \$15 trillion. (See, <https://business.nasdaq.com>, last visited February 21, 2019.) Veles is a financial products company based in the United Kingdom specializing in water pricing, water financial products,

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and water economic and financial methodologies. (See, www.veleswater.com, last visited February 21, 2019.) Data for the Index is provided exclusively by WestWater, an economic and financial consulting firm specializing in water rights and water resource acquisition and development throughout the United States.

Index Calculations, Adjustments, Pricing

While many aspects of the Index are deemed proprietary, NASDAQ provides some information about the functionality of the Index in its “NQH2O Methodology Report” (Index Report) (See, https://indexes.nasdaqomx.com/docs/methodology_NQH2O.pdf, last visited February 21, 2019.) The Index Report states that listed figures reflect the “commodity value of water” at the source, and do not include additional costs associated with transportation or losses such as through evaporation. Index data is also limited to transactions resulting from arms-length negotiations, and excludes transactions that do not include financial consideration.

The Index is priced in terms of U.S. Dollars per acre-foot and uses a “modified volumeweighted average” of prevailing prices in selected underlying water markets after adjusting for “idiosyncratic pricing factors” specific to those water markets and specific types of eligible transactions. The Index is calculated and published following the close of business each Wednesday based on data obtained through the end of the prior week.

On opening day, the Index listed a California water “spot price” of \$511.33 per acre-foot based upon 293 water transactions between approximately January and August 2018. Since then, the listed spot price has ranged between a low of \$ 447.64 per acre-foot and a high of \$576.30 per acre-foot. (See, <https://indexes.nasdaqomx.com/Index/History/NQH2O>, last visited February 21, 2019.)

Index Data: Eligible Water Markets and Transactions

Only certain groundwater and surface water markets and transactions are deemed eligible data sources for the Index. As described in the Index Report, current Index-eligible data sources are limited to five large and actively traded markets in California, including four groundwater markets and a generally-described surface water market.

Central Basin—Groundwater

The Central Basin underlies an approximately 227-square-mile area in Los Angeles County. The original judgment in Central Basin adjudication was entered in 1965 (*Central and West Basin Water Replenishment District v. Charles E. Adams et al.*, Los Angeles County Superior Court Case No. 786656) and has since been amended several times including most recently in 2013. The Central Basin adjudication establishes limits on total annual groundwater production and establishes “allowed pumping allocations” (APA) among the parties. The total APA exceeds the natural yield of the basin and relies upon recharge from imported and reclaimed water. The adjudication authorizes parties to purchase or lease APA through an established “Exchange Pool”. Unused APA may be carried over into the following administrative year subject to certain timing and volumetric limitations; and, carryover water may also be traded. Eligible transactions for inclusion in the Index include permanent transfers of APA, single- and multi-year leases of APA and leases of carryover water.

Chino Basin—Groundwater

The Chino Basin underlies an approximately 235-square-mile area of the Upper Santa Ana River Watershed within portions of San Bernardino, Riverside, and Los Angeles counties. The original judgment in the Chino Basin adjudication was entered in 1978 (*Chino Basin Municipal Water District v. City of Chino et al.*, San Bernardino Superior Court Case No. RCV 164327 (now Case No. RCV 51010)), and has since been amended several times including most recently in 2012. The Chino Basin adjudication established a basin safe yield and allocated water rights among three distinct producer “Pools”, including an Overlying Agricultural Producers Pool, an Overlying Non-Agricultural Producers Pool and an Appropriative Producers Pool.

Transfers and leases of water rights are subject to specific limitations. Transfers are generally not permitted within the Agricultural Pool; though, unused water is made available annually to the Appropriative Pool. Overlying Non-Agricultural Pool producers may both permanently transfer and temporarily lease water within their Pool and may lease water annually to Appropriative Pool producers pursuant to specific regulatory requirements. Appropriative Pool producers which primarily comprise municipal water provid-

ers, may both permanently transfer and temporarily lease water within their Pool. Both Overlying Non-Agricultural Pool and Appropriative Pool producers may carry over unexercised rights subject to certain limitations. Supplemental water may be stored, and both carryover and storage water may be transferred following the same rules applicable to the use of groundwater rights for each Pool.

Eligible transactions for the Index include temporary (single- and multi-year) transfers within the Appropriative Pool and within the Overlying Non-Agricultural Pool, and annual leases from the Overlying Non-Agricultural Pool to the Appropriative Pool pursuant to the regulatory framework. Eligible temporary transfers include those with single or multi-year terms. Temporary transfers of carryover and storage water are also considered eligible. The Index also includes permanent transfers of rights among Appropriative Pool and Overlying Non-Agricultural Pool producers.

Main San Gabriel Basin—Groundwater

The Main San Gabriel Basin underlies an approximately 167-square mile area in the southeastern portion of Los Angeles County. The original judgment in the Main San Gabriel adjudication was entered in 1973 (*Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al.*, Los Angeles County Superior Court Case No. 924128), and has since been amended several times including most recently in 2012. Among many of its major components, the judgment established a Watermaster responsible to determine an annual basin Operating Safe Yield (OSY). The judgment allocated prescriptive water rights (and other types of rights in certain circumstances) among producers, which also provides the basis for each party's share of the OSY. Unused OSY may be carried over one fiscal year. Eligible transactions for the Index include both temporary (single- and multi-year) transfers of production rights and carry over, as well as permanent transfers of water rights.

Mojave Basin Alto Subarea—Groundwater

The Mojave Basin Area underlies an expansive approximately 3,400-square-mile area the high desert region of San Bernardino County. The original judgment in the Mojave Basin Area adjudication was entered in 1996 (*City of Barstow, et al. v. City of Ad-*

elanto, et al., Riverside County Superior Court Case No. CIV 208568) comprising a stipulation among over seventy-five percent (75 percent) of the parties and representing over eighty percent (80 percent) of the verified water production within the basin. The judgment was partially amended in 2002 following a decision of the California Supreme Court (*City of Barstow v. Mojave Water Agency*, 23 Cal.4th 1224 (2000)) arising from appeals pursued by certain non-stipulating parties.

The judgment recognized five distinct but hydrologically interconnected Subareas including the Alto (including a portion referred to as the "Transition Zone"), Centro, Este, Oeste and Baja Subareas. The judgment required each Subarea to ensure a certain amount of Mojave River flow to adjacent downstream Subareas. The Judgment established Base Annual Production Rights (BAP) within each Subarea, and imposed Rampdown obligations to achieve basin sustainability. Each year, the court reviews and determines the volume of water to be allocated to water producers in the form of a Free Production Allowance (FPA), which is a portion of BAP that may be produced during without incurring a Replacement Obligation necessary to fund imported supplemental water. Unproduced FPA may be carried over for one administrative year. The judgment authorizes both temporary and permanent transfers of BAP and FPA.

Eligible transactions for the Index are limited to those within the Alto Subarea, which is the largest and most active Subarea market. The Index includes temporary (single- and multi-year) transfers, including carryover, and permanent transfers of Alto Subarea BAP.

Surface Water

As noted in the Index Report, the majority of California's surface water resources originate north of the Sacramento-San Joaquin River Delta (Delta), while the majority of demand for that water is located south of the Delta. The extensive California State Water Project (SWP) and federal Central Valley Project (CVP) storage and conveyance facilities enable a surface water market through which (complex) water transfers are established among parties throughout California. The Index Report describes eligible surface water transactions for the Index to include temporary (single- and multi-year) and permanent transfers of SWP entitlements, CVP entitlements, and "other surface water entitlements."

A First Step—To Where?

According to Veles' CEO:

... [w]ater is our most important commodity and until now, there were no financial risk management instruments available in the global financial markets. We see the [Index] as an important first step to understanding water as a commodity, which means a more transparent and accessible marketplace for all.

Similarly, NASDAQ's Vice President and Head of Research and Product Development for NASDAQ's Global Indexes, Dave Gedeon, stated that:

... [t]he NASDAQ Veles California Water Index can bring dramatic change to the way we quantify and value an important resource. (See, <https://www.nasdaq.com/press-release/nasdaq-launches-water-pricing-index-20190108-00379>, last visited February 21, 2019.)

Notably, these comments declare the Index to be a first step toward dramatic change in the way water is valued. This begs the question, "a first step to where?" One notable financial industry leader has painted a picture of what he believes this "dramatic change" will be. In a lengthy report principally authored by Willem Buiter, Global Chief Economist for Citi Investment Research & Analysis (a division of Citigroup Global Markets Inc.) (Citi) Citi predicted in 2011:

I expect to see in the near future a massive expansion of investment in the water sector, including the production of fresh, clean water from other sources (desalination, purification), storage, shipping and transportation of water. I expect to see pipeline networks that will exceed the capacity of those for oil and gas today. I see fleets of water tankers (single-hulled!) and storage facilities that will dwarf those we currently have for oil, natural gas and LNG ... I expect to see a globally integrated market for fresh water within 25 to 30 years. *Once the spot markets for water are integrated, futures markets and other derivative water-based financial instruments—puts, calls, swaps—both exchange-traded and OTC will follow. There will be different grades and types of fresh water, just the way we have light sweet and heavy sour crude oil today. Water as an asset class*

will, in my view, become eventually the single most important physical-commodity based asset class, dwarfing oil, copper, agricultural commodities and precious metals. (Citi, "Global Themes Strategy: Thirsty Cities—Urbanization to Drive Water Demand, July 20, 2011, <http://www.capital-synthesis.com/wp-content/uploads/2011/08/Water-Thirsty-Cities.pdf>, last visited February 21, 2019.)

Water Rights and SGMA

The changes predicted by Citi are, indeed, dramatic. While price indexing may serve to inform market participants and transactions, water markets themselves are governed by established and (generally) orderly water rights laws and principles—at least in California and the United States.

In California, one potentially fertile testing ground for the Index's informational value may be through the implementation of the Sustainable Groundwater Management Act of 2014 (SGMA). As of today, the California Department of Water Resources has identified 517 distinct groundwater basins and sub-basins, approximately a quarter of which are required to develop and implement first-ever Groundwater Sustainability Plans (GSPs) to achieve long-term basin sustainability.

Among its many features, SGMA authorizes newlyformed Groundwater Sustainability Agencies (GSAs) to establish groundwater pumping allocations and transferability as a management tool to achieve basin sustainability. (California Water Code, § 10726.4). GSP allocation schemes are, however, subject to limitations including, for example, generally complying with established land use plans and occurring only within the GSA's jurisdictional boundaries. (*Id.*) Of course, neither a GSP nor a GSA has authority to determine or alter water rights, which also delimits the parameters of an allocation framework. (*Id.* at § 10720.5.)

In this context, the question to be tested in the coming years would be whether and to what extent the Index (or something like it) might meaningfully inform a specific buyer and/or seller regarding an appropriate price in transacting a pumping allocation transfer in a specific groundwater basin pursuant to a specific allocations framework that is subject to specific GSP provisions and other State laws and municipal ordinances. Extending the hypotheti-

cal, the question becomes more acute with respect to inter-basin transfers (subject to the same, if not more, legal limitations). In other words, the ultimate informational value of the Index will likely be shaped by the extent to which the underlying assumptions and data that are used for the Index are considered to be similar to and reflective of the local conditions of a particular basin and transaction.

As GSAs implement allocation frameworks through their GSPs resulting in new local markets, more transactional data will presumably become available for inclusion in the Index, which may reduce perceived data asymmetry and build confidence in the Index. Regardless, buyers and sellers will need sufficient information about the Index itself, including how it functions and the data upon which it is based, in order to evaluate its appropriateness in valuing a particular transaction.

Conclusion and Implications

Clearly, the value of water as a natural resource necessary to life and economy in California will only continue to rise. The whiplash of the recent historic

drought followed by dramatic wet years has triggered major changes in California water law and policy, including providing for the development of new water markets and more expansive and robust databases and information.

Transferability of water resources will continue to serve an important management tool. The price attributed to a particular transfer is expected to be governed by *market conditions*, the applicable *laws and ordinances* and the nature and value of the underlying water *rights* upon which the transaction is based. The informational value of the Index to any particular transaction remains to be seen and will depend on these and many other factors. A buyer and seller would need to evaluate whether and to what extent the “spot price” of the Index reflects the unique local conditions and aspects of the transaction. That informational value may grow over time as new and broader market data is incorporated.

So long as that buyer and seller are transacting in a system still governed by water rights laws, they are probably not confronted with the naval-gazing question of whether water is simply a commodity.

Derek Hoffman is a senior associate at Gresham | Savage practicing extensively in the areas of California water rights and natural resources law, real estate, business and eminent domain. In his water law practice he represents landowners, agricultural interests, developers, water districts, mutual water companies and regional to multi-national businesses in evaluating, protecting and litigating water rights and supply. He actively represents clients in SGMA implementation and provides guidance for effective water resources management and compliance with state and federal water law and regulation. Derek writes regularly for the *California Water Law & Policy Reporter*.

Michael Duane Davis is of counsel and vice president of Gresham | Savage who has represented businesses, individuals and governmental clients in complex real estate and business transactions and litigation for nearly 40 years. Mr. Davis has decades of experience evaluating water rights and resources and in water rights disputes, with an emphasis on groundwater basin adjudications. He has represented dozens of clients in the Mojave and Antelope Valley Groundwater adjudications. He provides business and land use guidance, and water resources management under the Sustainable Groundwater Management Act, and regarding Urban Water Management Plans, Integrated Regional Water Management Plans, Water Supply Assessments and Proposition 218. He has extensive experience serving as general counsel to numerous county water districts and mutual water companies. Mr. Davis serves on the Editorial Board of the *California Water Law & Policy Reporter*.

CLIMATE CHANGE NEWS

PROPOSED UTAH-COLORADO WATER TRANSFER PIPELINE PROJECT REVIVED UNDER NEW TERMS

A Colorado entrepreneur, through a newly created LLC, has filed for water rights in Utah's Green River in the latest iteration of a decade-old plan to bring additional water to Colorado's Front Range. That application, like its predecessors, faces steep opposition from a variety of environmental, private, and governmental groups.

Background

Aaron Million originally conceived of this plan 15 years ago while working on his master's thesis at Colorado State University. Since then, Million's plans have been defeated and then re-hatched multiple times, giving the project the nickname "zombie pipeline." An early version called for pumping 250,000 acre-feet to Colorado and was quickly dismissed. In 2010 the project was called the Flaming Gorge Pipeline and proposed to pump more than 200,000 acre-feet water from Flaming Gorge Reservoir in Wyoming to Colorado annually. That 500-mile pipeline was slated to run all the way to Pueblo, Colorado on the southern tip of the Front Range. After being opposed on all fronts, it was finally rejected by the Colorado Water Conservation Board and Federal Energy Regulatory Commission in 2012.

A New Proposal

Undeterred, the project has again surfaced, this time under Million's new entity Water Horse Resources, LLC. Water Horse submitted an application to the State of Utah in January of 2018, this time claiming 76 c.f.s. for a total of 55,000 acre-feet, annually, from the Green River below Flaming Gorge. This revised version of the pipeline project is only about a quarter of the 2010 proposal, which Million hopes will allay the 2012 concerns that there was simply not enough water in the river.

Nevertheless, the application was opposed by almost 30 individuals, environmental groups, river districts in Colorado and Utah, and governmental agencies including the Bureau of Reclamation and the BLM. The State of Colorado has taken a wait-

and-see approach, noting that it will remain neutral for the time being.

One of the chief concerns raised by opposers is that the plan is widely speculative, considering that Water Horse has not yet revealed a buyer for the large volumes of water. Million claims that he does in fact have a buyer interested in purchasing the entire 55,000 acre-feet to use on the Front Range. However, the only evidence presented in the application were letters of interest from potential buyers relating to the 2010 proposal. The Central Colorado Water Conservancy District (CCWCD) is the only Colorado entity to have openly expressed interest in the water from the Water Horse pipeline. The CCWCD, which has since joined an advisory board for the Water Horse project, is very interested in the pipeline because water shortages have left the district about 50 percent short on its deliveries in an average year.

This latest proposal plans for an underground pipeline, approximately 40 inches in diameter, that would divert from the Green River—below Flaming Gorge and above Dinosaur National Monument—and then run east across Wyoming before turning south into Colorado along the Front Range. Water Horse has estimated that the project will cost between \$860 million and \$1.1 billion to construct. Million has mentioned the possibility of using existing oil and gas pipelines to transport the water, but there have been no official plans yet revealed so it is unclear how viable such a plan would be.

Water and Hydroelectricity

In addition to revenue from the sale of water, the pipeline is projected to generate 70 megawatt hours of hydroelectric power per year thanks to a 3,800-foot vertical drop from the Continental Divide to the Front Range. After the pipeline is up and running, Million has discussed a second phase involving pumped-storage facilities to increase hydropower efficiency, generating an additional 500 to 1,000 megawatt hours annually. At a November hearing of the Utah Board of Water Resources, Million noted

that, “[i]t’s becoming as much a renewable-energy project as water supply.” In that hearing the proposal was roundly criticized by groups and individuals as disparate as Utah ranchers and Colorado environmental groups. The only group to support the project had a clear agenda—Pipeliners Local Union 798. Much of the other criticism brought up at the hearing dealt with the vagueness of the proposal, with the initial plans leaving the public unable to determine the viability of the plan. Those concerns led to the Utah State Engineer’s office on December 10, 2018 to request additional information from Million and Water Horse to prove, principally, that water is available and that the project is feasible.

Water Rights and Environmental Concerns

Water Horse answered those questions on February 8, 2019 in a sprawling response that totaled almost 250 pages, including exhibits. Responding to the questions about physically and legally available water, Water Horse noted that the Green River has so few diversions compared to users that “it has never been necessary to regulate Green River water rights by priority.” Turning to a legally available water supply, Water Horse claims that: 1) the Law of the River dictates that this water would be charged to Colorado because the 1922 Colorado River Compact focuses on place of use, and 2) the 2010 CWCB Statewide Water Supply Initiative found that Colorado has be-

tween 445,000 and 1,438,000 acre-feet per year available under its Compact entitlements. Therefore, the response claims, the Water Horse proposal would use both a physically and legally available water supply.

Pivoting to environmental issues, Water Horse admitted that the most straightforward legal approach would have been to divert from the Green River in Colorado, run the pipeline through Colorado, and therefore file the application in Colorado. However, Water Horse claims that technical and environmental issues make that current proposal the most feasible. Other environmental issues, particularly those concerning fish and other wildlife, have been a contentious point through the various iterations of this project. In the February 8 response, Water Horse seemed to punt on this issue, claiming that there is plenty of water in the Green River at the point of diversion to support fish habitat, but that’s also a moot point at this time because federal involvement will necessitate Endangered Species Act and National Environmental Policy Act (NEPA) review in the future.

Conclusion and Implications

All opposers now have 30 days from February 8 in which to offer any comments to Water Horse’s response. There is no timetable on an expected resolution of this proposal, but if the past applications are any guide, it will be several years before the application is granted or denied.

(John Sittler, Paul Noto)

CLIMATE CHANGE SCIENCE

RECENT SCIENTIFIC STUDIES ON CLIMATE CHANGE

**Methane Emissions in China
Are Growing Despite Regulations**

Methane is a potent greenhouse gas (GHG), with a global warming potential (GWP) around 28 to 36 times higher than that of carbon dioxide (CO₂); it traps 28 to 36 times as much heat per ton of emissions compared to CO₂. Because of its high GWP and relatively large human-caused emissions sources, along with its economic potential to be burned for fuel, recent regulations have focused on reducing methane emissions and leaks.

China likely emits more anthropogenic methane than any other country, with the largest fraction attributable to coal mine methane (CMM). The methane accumulates in coal seams over millions of years and is released to the atmosphere when the coal is mined. In 2010, China enacted regulations to limit CMM emissions. All mines are required to drain mines of methane gas prior to coal production and utilize the majority of the methane such as for electricity production. Gas that cannot be used can be flared, which produces CO₂ emissions with a lower GWP than the methane. If the methane content of the gas is less than 30 percent, the methane may be explosive, so it is allowed to be vented instead of utilized or flared.

Researchers at the Carnegie Institution for Science, the Netherlands Institute for Space Research, the National Oceanic and Atmospheric Administration, and the University of Colorado Boulder use satellite data and emissions models to evaluate the effectiveness of China's CMM regulations from 2010 to 2015. They show trends in global Greenhouse Gases Observing Satellite (GOSAT) methane observations using a grid covering the globe. While much of the world shows no discernible trend, China shows a clear increase in methane concentrations. When fitted to an inverse model, this trend corresponds to an annual increase of approximately 1.1 teragrams of methane per year from China. This is consistent with the annual trend reported by studies before enactment of the CMM regulations. No other major

methane emissions sources in China (including rice, agriculture, waste, oil/gas, or natural sources) have increased significantly since 2010. The researchers conclude that the CMM regulations have not resulted in a discernible change from business-as-usual CMM emissions in China.

Future studies and regulations could focus on understanding the reasons why the CMM regulations have been unsuccessful and how to implement more effective measures. The researchers note that there may be a combination of insufficient natural gas infrastructure, technological limitations on draining CMM, and noncompliance.

See, Miller, S., et al. 2019. China's coal mine methane regulations have not curbed growing emissions. *Nature Communications*. DOI: [10.1038/s41467-018-07891-7](https://doi.org/10.1038/s41467-018-07891-7)

**Changes in Global Heat Transport
as a Result of Climate Change**

The atmosphere and the ocean regulate the Earth's temperature by moving heat through a series of heat fluxes. A heat flux is a physical concept that describes the flow of heat energy from one body to another. There are many different types of naturally-occurring heat fluxes in the environment, and these all work together as a fundamental part of the climate system. Atmospheric heat fluxes and ocean advective heat fluxes move air and water around the atmosphere and ocean, respectively, carrying heat between the poles and the equator. Bridging these two mediums together is the ocean surface heat flux, which connects the atmospheric and oceanic heat systems together by transferring heat between them.

Previous modelling studies have shown that global warming causes atmospheric heat fluxes to increase toward the poles and a compensating ocean heat flux that increases toward the equator in both hemispheres. These studies, however, do not typically account for the increase in the ocean's ability to store heat, which is expected as a result of climate change.

A new study primarily out of the Ohio State University investigates the initial effects of climate

change on the atmospheric and oceanic heat fluxes, specifically focusing on ocean heat fluxes and ocean heat capacity. The study looked at both historical heat transport from datasets recorded from as early as 1850 and models that predict global heat transport out to 2600. The focus on the study was near-future responses of ocean heat fluxes; the majority of the efforts were directed towards 21st century simulation results. The researchers find that in the first century of warming, much of the change in heat fluxes manifest as changes in overall circulation patterns that ultimately create stronger heat fluxes in the atmosphere but weaker heat fluxes in the ocean. This occurs partially because changes in the ocean heat capacity cause a difference in the ratio of heat moved laterally within the ocean by the ocean advective heat flux and the heat transferred to the atmosphere by the ocean surface heat flux. When the ocean surface heat flux overtakes the ocean advective heat fluxes, global heat moves to the atmosphere instead of the oceans.

Because atmospheric and oceanic heat fluxes are the Earth's primary mechanism for regulating temperatures, it is critical that scientists investigate how these pathways will change in the changing climate. Understanding how heat fluxes change with increased surface temperature will provide insight on which regions on earth will get warmer, which will get colder, and by how much, thus informing climate adaptation strategies.

See, He, C., et al. 2019. The transient response of atmospheric and oceanic heat transports to anthropogenic warming. *Nature Climate Change*. DOI: [10.1038/s41558-018-0387-3](https://doi.org/10.1038/s41558-018-0387-3)

Determining the Drivers for Arctic Amplification

In the last extreme heat wave in the Arctic in February 2018, the North Pole was 30 to 35 degrees above normal, at the melting point of ice. Since the 1980s, Arctic glacier mass has declined more than 70 percent. The term used to describe this accelerated warming pattern is Arctic Amplification. There has been a clear pattern of warming in the Arctic region and Siberia, Northern Canada, and Alaska relative to the global mean surface temperature.

An International team of researchers led by Malte F. Stuecker at the IBS Center for Climate Physics in Busan, South Korea has been studying the drivers for this Arctic Amplification. A common hypothesis is that the main driver for the accelerated warming

is heat is being transported to the Arctic by winds and ocean currents from the Gulf Stream and North Atlantic. Another common hypothesis is that of the "ice-albedo" feedback: surface warming in the Arctic reduces snow and sea-ice which decreases the reflectivity of the surface and more sunlight can reach the top layers of soil and ocean, leading to accelerated warming.

The researchers used complex computer simulations to show that remote physical processes from outside the polar regions and ice-albedo feedback do not play a major role in Arctic Amplification. What their findings suggest is that the atmospheric stability in the Arctic compared to other parts of the globe may play a large part in the amplification. In the tropics, the atmosphere is less stable and carbon dioxide can be carried to the upper air where heat can be more easily lost to space. In the Arctic, since the atmosphere is more stable, less carbon dioxide is transported to the upper air and less heat can escape into space further amplifying surface-trapped warming. This study highlights the importance of Arctic processes in controlling sea-ice retreat and understanding how the Arctic permafrost and the Greenland ice-sheet will respond to a warming planet.

See, Malte F. Stuecker, Cecilia M. Bitz, Kyle C. Armour, Cristian Proistosescu, Sarah M. Kang, Shang-Ping Xie, Doyeon Kim, Shayne McGregor, Wenjun Zhang, Sen Zhao, Wenju Cai, Yue Dong, Fei-Fei Jin. Polar amplification dominated by local forcing and feedbacks. *Nature Climate Change*, 2018; 8 (12): 1076 DOI: [10.1038/s41558-018-0339-y](https://doi.org/10.1038/s41558-018-0339-y)

Aerosol Cooling Greatly Underestimated by Current Estimates

Aerosols are small particulates generated via natural processes (e.g., dust) and emitted from anthropogenic activities (e.g., fossil fuel combustion), which can induce cloud formation and result in a cooling effect. Cloud droplets condense on tiny aerosol particles, resulting in increased low-level cloud cover that can reflect more solar radiation back to space. Aerosol cooling is an important factor in global climate models, however, existing estimates are considered uncertain due to the difficulty of separating out the impacts of aerosols and other cloud meteorology from available measurements.

A new study published in *Science* demonstrates that the aerosol cooling effect has been dramatically

underestimated in existing literature. The research team, led by Daniel Rosenfeld at Hebrew University of Jerusalem, developed novel techniques to retrieve cloud droplet concentrations and vertical wind information from satellite data, allowing them to isolate aerosol effects from other meteorological data. The team applied this methodology to the world's oceans between the equator and 40 degrees South, as marine low-level clouds are responsible for reflecting much of the solar radiation received by Earth. Their analysis found that three-fourths of the variability in the cooling effects of the studied low-level marine clouds was due to aerosols. This finding implies a much greater sensitivity to aerosols than currently accounted for in climate models.

The study authors note that this technical advancement actually increases uncertainty in aerosol cloud-mediated radiative forcing. If global climate models did account for this large sensitivity, they would indicate too much cooling, at odds with observations of global warming. Thus, the study results imply that there may be another positive forcing yet unaccounted for in current models, requiring further research and potentially significant revisions to climate predictions.

See: Daniel Rosenfeld, Yannian Zhu, Ming-huai Wang, Youtong Zheng, Tom Goren, Shaocai Yu. Aerosol-driven droplet concentrations dominate coverage and water of oceanic low level clouds. *Science*, 2019; DOI: [10.1126/science.aav0566](https://doi.org/10.1126/science.aav0566) (David Kim, Libby Koolik, Malini Nambiar, Shaena Berlin Ulissi)

REGULATORY DEVELOPMENTS

EPA REVERSES PREVIOUS FINDINGS RELATING TO THE REGULATION OF COAL- AND OIL-FIRED POWER PLANTS UNDER CLEAN AIR ACT, SECTION 112

On December 27, 2018, the U.S. Environmental Protection Agency (EPA) issued a proposed “Reconsideration of Supplemental Finding and Residual Risk and Technology Review” in which it proposed to find that it is not “appropriate and necessary” to regulate hazardous air pollutant (HAP) emissions from coal- and oil-fired electric utility steam generating units (EGUs) under federal Clean Air Act (CAA) § 112.

Background

The EPA determined on December 20, 2000, pursuant to CAA § 112(n)(1)(A), that it was “appropriate and necessary” to regulate coal- and oil-fired EGUs under § 112(d) of the CAA and added such units to the CAA § 112(c) List of Categories of Major and Area Sources (65 FR 79825). § 112(n)(1)(A) of the CAA provides that the EPA:

... shall regulate electric utility steam generating units under this §, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study required by this subparagraph. (42 U.S.C. §7412(n)(1)(A)).

Under § 112(d) of the Clean Air Act, the EPA must:

... promulgate regulations establishing emission standards for each category or subcategory of major sources and area sources of hazardous air pollutants listed for regulation pursuant to sub§ (c) ... (42 U.S.C. §7412(d)).

As described in the December 27, 2018 notice, the EPA has taken various actions in the nearly two decades since the original December 2000 determination, including reversing and then reaffirming its 2000 “appropriate and necessary” finding and, in 2011, proposing National Emission Standards for Hazardous Air Pollutants (NESHAP) for coal- and oil-fired EGUs, known as the Mercury and Air Toxics

Standards (MATS) rule. The EPA now proposes to again reverse its “appropriate and necessary” finding with respect to the regulation of coal- and oil-fired EGUs:

After considering the cost of compliance relative to the HAP benefits of regulation, the EPA proposes to find that it is not ‘appropriate and necessary’ to regulate HAP emissions from coal- and oil-fired EGUs, thereby reversing the Agency’s prior conclusion under CAA § 112(n)(1)(A) and correcting flaws in the Agency’s prior response to *Michigan v. EPA*.

As noted, the EPA’s proposed action would supplant the agency’s 2016 Supplemental Finding in response to the U.S. Supreme Court’s decision in *Michigan v. EPA*, 135 S. Ct. 2699 (2015). In that case, the U.S. Supreme Court held that the EPA erred “when it deemed cost irrelevant to the decision to regulate power plants” under § 112(n)(1)(A) of the CAA. In 2016, in response to the Supreme Court’s decision, the EPA issued the “2016 Supplemental Finding” at issue in the current action. In the 2016 Supplemental Finding, the EPA considered costs under two different approaches, both of which were flawed according to the EPA’s December 27, 2018 notice.

Proposed Reversal of Agency’s 2016 Findings

The EPA proposes to determine that the cost analysis underlying the agency’s 2016 Supplemental Finding did not satisfy the agency’s obligations under CAA § 112(n)(1)(A). Specifically, the EPA now concludes that the “preferred approach” described in the 2016 Supplemental Finding, also described as the:

... cost reasonableness test ... [did]. ... not meet the statute’s requirements to fully consider costs, and was an unreasonable interpretation of CAA § 112(n)(1)(A)’s mandate, as informed by the Supreme Court’s opinion in *Michigan*.

As summarized by the EPA, the cost reasonableness test evaluated:

...whether the cost of regulation could be absorbed by the power sector without negatively affecting the industry's ability to continue performing its primary function. Upon finding that the costs of compliance with the rule across the entire utility sector were within historical variability and would not shut down the sector as a whole, the EPA concluded that the cost of compliance with MATS was reasonable.

In its December 27, 2018 notice, the EPA concludes that reliance on the cost reasonableness test was improper:

[W]hether an industry can bear the cost of regulation does not demonstrate that the cost of MATS was 'reasonable' under the particular statutory context.

The EPA also takes issue with the metrics previously evaluated by the agency:

Each cost metric the Agency examined compared the cost of MATS to other costs borne by the industry, but never in its 'preferred approach' did the Agency make the statutorily mandated assessment of whether the benefits garnered by the rule were worth it—*i.e.*, a direct comparison of costs and benefits.

The EPA also concluded that the "alternative" approach employed in the 2016 Supplemental Finding was flawed. According to the agency:

...the EPA improperly made an independent finding under CAA § 112(n)(1)(A) that was based on a formal benefit-cost analysis, which evaluates whether a regulation will increase economic efficiency, to find that it was appropriate and necessary to regulate EGUs under CAA § 112.

That assessment included consideration of air quality benefits resulting from a reduction in pollutants such as nitrogen oxides and sulfur oxides, which are not regulated by MATS (non-HAP air quality benefits), expected to occur as a result of the control technologies and compliance strategies necessary to

reduce HAP emissions directly regulated by MATS. These "co-benefits" comprised the majority (approximately 99.9 percent) of the monetized benefits of MATs in the cost-benefit analysis underlying the agency's alternative approach:

In this action, we propose to find that the EPA's equal reliance on the particulate matter (PM) air quality co-benefits projected to occur as a result of the reductions in HAPs was flawed as the focus of CAA § 112(n)(1)(A) is HAP emissions reductions.

EPA's New Cost Calculus

In lieu of the cost considerations undertaken by the agency in its 2016 Supplemental Finding, the EPA now proposes a direct comparison of the cost of compliance with MATS with the quantifiable benefits specifically associated with reducing emissions of HAPs. According to the EPA, a:

...proper consideration of costs based on this approach demonstrates that the total cost of compliance with MATS (\$7.4 to \$9.6 billion annually) dwarfs the monetized HAP benefits of the rule (\$4 to \$6 billion annually). . . .while there are unquantified HAP benefits and significant monetized PM co-benefits associated with MATS, the Administrator has concluded that the identification of these benefits is not sufficient, in light of the gross imbalance of monetized costs and HAP benefits, to support a finding that it is appropriate and necessary to regulate EGUs under CAA § 112.

EPA further stated that it:

...proposes to conclude that it is not appropriate and necessary to regulate HAP from EGUs under CAA § 112 because the costs of such regulation grossly outweigh the HAP benefits.

Conclusion and Implications

According to the EPA, "finalizing this new response to *Michigan v. EPA* will not remove the Coal and Oil-Fired EGU source category from the CAA § 112(c) list of sources that must be regulated under CAA § 112(d) and will not affect the existing CAA

§ 112(d) emissions standards that regulate HAP emissions from coal- and oil-fired EGUs.” However, the agency is also soliciting comments on “alternative interpretations” of the effects of its proposed action, including: (i) whether the agency would in fact have the authority to rescind the MATS rule and delist EGUs from CAA § 112 once it finalizes its proposed conclusion that it is not appropriate and necessary to regulate HAP emissions from coal- and oil-fired

EGUs; and (ii) whether the agency would be *obligated* to rescind the MATS rule upon such a finding even if such a finding did not remove EGUs from the list of covered sources under CAA § 112(c).

Additional information about EPA’s proposed action is available at the following location: <https://www.epa.gov/mats/proposed-revised-supplemental-finding-and-results-residual-risk-and-technology-review>

(Nicole Martin)

DEPARTMENT OF DEFENSE ISSUES JANUARY 2019 CLIMATE VULNERABILITY REPORT HIGHLIGHTING IMPACTS TO THE MILITARY INFRASTRUCTURE

In 2018, a report from the U.S. Department of Defense (DoD) concluded that climate change threatens over 50 percent of United States military sites. The report, entitled “Climate-Related Risk to DoD Infrastructure—Initial Vulnerability Assessment Survey (SLVAS) Report” (2018 DoD Report), consisted of a web-based survey of over 3,500 military sites (*see*, 10 *Climate Change L. & P’lcy Rptr.* 278 (Mar. 2018)). In 2019, DOD issued a second report: “Report on Effects of a Changing Climate to the Department of Defense.” The new report is discussed below.

Background

In May 2018, the *Washington Post* reported on the effect President Trump’s administration may have had on the 2018 DoD Report. According to the *Washington Post*, a December 2016 draft of the 2018 DoD Report, prepared under President Obama’s administration, contained “numerous references to ‘climate change’ that were omitted or altered to ‘extreme weather’ or simply ‘climate’” in the final report. In addition, the phrase “climate change” appeared 23 times in the draft report and only appeared once in the 2018 DoD Report.

On January 10, 2019, the DoD delivered another legally-mandated climate report to Congress entitled “Report on Effects of a Changing Climate to the Department of Defense” (2019 DoD Report). When comparing the two reports, which cover similar topics, it appears that the 2019 DoD Report lacks the detail contained in the 2018 DoD Report. The adequacy of the 2019 DoD Report was questioned in a January 25, 2019 letter to the Acting Secretary of

Defense from three Democratic congressmen, including the chairman of the House Armed Services Committee. In the letter, the congressmen asked the DoD to submit a revised report to Congress no later than April 1, 2019.

The 2019 Department of Defense Report

The 2019 DoD Report, required by § 335 of the National Defense Authorization Act for Fiscal Year 2018 (NDAA), reviewed climate-related events in order to identify high risks to mission effectiveness on military installations and operations. Specifically, the 2019 DoD Report looked at five climate-related events and their current and potential effects on 79 military installations. The five climate-related events were: 1) Recurrent Flooding; 2) Drought; 3) Desertification; 4) Wildfires, 5) Thawing Permafrost

A summary of the potential military vulnerabilities resulting from these five climate-related events as set forth in the 2019 DoD Report is provided below:

•Recurrent Flooding

According to the report, recurrent flooding could result in coastal and riverine flooding. In addition, coastal flooding and gradual sea level changes could result in permanent inundation of property.

•Drought

According to the report, droughts can negatively impact military installations in areas dependent on surface water. Droughts can also increase wildfire potential and severity and may impair testing activities. On the health-related front, the report

indicates that droughts can contribute to heat-related illnesses, including heat exhaustion and heat stroke.

- Desertification

According to the report, desertification results in reductions in vegetation cover leading to increases in the amount of runoff from precipitation events. The additional runoff then contributes to higher erosion rates, increased stream sediment loads and deposition of sediment in unwanted areas. The report opines that desertification could limit future training and testing exercises.

- Wildfires

The report notes that increased wind and drought can lead to an increase in the severity of wildfire activity. The increased severity could then result in infrastructure impacts and affect testing and training.

- Thawing Permafrost

The report notes that permafrost presents risks for critical built infrastructure and thawing permafrost decreases the structural stability to foundations, buildings, and transportation infrastructure. These effects would then require costly mitigation responses that disrupt planning, operations, and budgets.

Congressional Response to 2019 DoD Report

The 2019 DoD Report concludes that it is “a high-level assessment of the vulnerability of DoD installations to five climate/weather impacts.” The letter from the three congressmen, however, questions the adequacy of the analysis provided. According to the

congressmen, the 2019 DoD Report “lacks key deliverables mandated by [§] 335 and is at odds with the plain language of the NDAA.”

The letter specifies that § 335 required:

... each Service within the [DoD] to assess the top ten military installations that are most vulnerable to climate change over the next 20 years and detail specific mitigation measures - including their costs - that can be taken to ensure the continued operational viability and resiliency of the identified installations.

The letter notes that 2019 DoD Report did not include the top ten lists or a specific discussion of costs. The letter also questions why no U.S. Marine Corps bases were mentioned and why the report did not include any discussion of the vulnerabilities of overseas installations.

Conclusion and Implications

The 2019 DoD Report indicates that the disconnect between Democratic lawmakers in Congress and President Trump on climate change will continue in 2019. In a House Armed Services Committee press release, Congressmen Smith and Garamendi made their positions clear. Congressman Smith said the 2019 DoD Report “demonstrates a continued unwillingness to seriously recognize and address the threat that climate change poses to our national security and military readiness” and Congressman Garamendi added “It’s shameful that the Trump administration refuses to take the threat of climate change seriously.” The full 2019 Report is available online at: https://partner-mco-archive.s3.amazonaws.com/client_files/1547826612.pdf (Kathryn Casey)

WITH PG&E'S BANKRUPTCY FILING, NEXT ERA ENERGY PARTNERS FILE PETITION WITH FERC SEEKING TO BAR PG&E FROM CANCELLING POWER PURCHASE AGREEMENTS

With Pacific Gas & Electric Company's (PG&E) early expression of its ultimate decision to file for Chapter 11 Bankruptcy protection, NextEra Energy, Inc. and NextEra Energy Partners, L.P. (NextEra) filed a petition for declaratory relief with the Federal Energy Regulatory Commission (FERC or the Commission), seeking a Commission ruling that would effectively bar PG&E from cancelling or modifying any of its power purchase agreements (PPAs) with NextEra during the bankruptcy proceeding. The petition argued that Congress gave FERC the exclusive authority to regulate the rates, terms and conditions of wholesale electric sales under the Federal Power Act (FPA), and that a bankruptcy court does not have jurisdiction to modify these contacts.

Numerous parties quickly followed suit as more than 60 motions to intervene were filed by various parties similarly seeking to protect the terms of their power purchase agreements from possible intervention by the bankruptcy court.

NextEra's Petition

NextEra argued that while the Bankruptcy Code establishes the bankruptcy court's broad authority over PG&E's estate, such authority cannot invade the Commission's exclusive jurisdiction over interstate wholesale electric sales under the Federal Power Act. Specifically, NextEra claimed that sections 205 and 206 of the FPA establish a comprehensive regulatory framework whereby the FERC is charged with regulating wholesale electric sales and interstate transmission in furtherance of the public interest. This framework has given rise to the "filed-rate doctrine", which bars any part from claiming a rate other than the filed-rate that has been reviewed and accepted by the Commission as "just and reasonable." Under this doctrine, NextEra contends, a bankruptcy court is barred from taking any action to amend, cancel or modify the terms of PPAs subject to the filed-rate doctrine.

This conflict between the power of FERC and bankruptcy courts is not one of first impression; however, the precedent is conflicting. In a Fifth Circuit Court of Appeals' decision, *In the Matter of Mirant*

Corp., 378 F.3d 511 (5th. Cir. 2004), the court found that the rejection of a power contract in bankruptcy court does not constitute an improper invasion of the FERC's jurisdiction under the Federal Power Act because it merely creates a contract breach, giving rise to a claim for contract damages. Some federal courts have declined to follow this rationale, however, and NextEra relied upon two more recent decisions from the Second Circuit, *In re Calpine Corp.*, 337 B.R. 27 (S.D. N.Y. 2006) and *In re Bos. Generating, LLC*, No. 10 Civ. 6258, 2010 WL 4616243 (S.D. N.Y. Nov. 12, 2010).

These decisions were more deferential to the FERC, noting that as compared to precedent supporting "FERC's vast authority over filed rate energy contracts," the Bankruptcy Code provides little evidence of congressional intent to limit FERC's jurisdiction, and thus barred any such intrusion. NextEra also urged the Commission to adopt the policy rationale in these decisions, noting that a rejection of PG&E's wholesale contracts would not have a significant impact on PG&E's estate since power costs are generally passed through to utility customers. Therefore, cancelling or modifying such contracts would not serve the primary goal of bankruptcy—preserving and fairly distributing the assets of the debtor.

PG&E's Response

PG&E responded that: 1) NextEra's petition was not ripe for consideration because the company had not yet filed for bankruptcy, 2) FERC jurisdiction only extends to electric sales and not to electric purchases, and thus the FERC cannot order a buyer (PG&E) to continue to purchase power, 3) bankruptcy courts have jurisdiction because the Bankruptcy Code does not list wholesale power purchase agreements among the exclusions of bankruptcy oversight; 4) that FERC does not have jurisdiction over what is squarely a contract dispute; and 5) that even if FERC does have jurisdiction, it should decline to exercise it because the dispute does not draw upon the Commission's area of expertise, the dispute does not raise important policy concerns as compared to the Commission's other responsibilities, and that Commission intervention would create regulatory uncertainty.

FERC's Ruling

FERC issued an *expedited* ruling finding that it has “concurrent jurisdiction” with a bankruptcy court:

. . .to review and address the disposition of wholesale power contracts sought to be rejected through bankruptcy.

Accordingly, any party to a Commission-jurisdictional wholesale power purchase agreement is required to obtain approval from both the Commission and a bankruptcy court if it seeks to modify the filed-rate and reject the contract.

The Commission Order noted that this area of the law in this area is “unsettled”, and an opinion is currently pending appeal before the U.S. Court of Appeals for the Sixth Circuit. (*FirstEnergy Solutions Corp.*, Case Nos. 18-3787, 18-3788, 18-4095, 181-4097, 18-4107, 18-4110, Briefing Schedule (6th Cir. Filed Jan. 17, 2019) (requiring appellants’ principal briefs to be filed by February 26, 2019).

Conclusion and Implications

On January 29, 2019, PG&E filed for Chapter 11 Bankruptcy in a move intended to “keep the lights” on and maintain operations while developing a plan

to continue business operations and pay off creditors. The bankruptcy filing lists \$51.7 billion in total debts and \$71.4 billion in assets. Judge Dennis Montali, the same judge who presided over PG&E’s bankruptcy filing in the wake of the 2001 energy crisis, is assigned to the proceeding, which is being held in US Bankruptcy Court in San Francisco.

Notwithstanding the FERC Order, PG&E filed for injunctive relief from the bankruptcy court, requesting an automatic stay of the FERC proceeding and that any action by FERC to adjudicate the PPAs be prevented. A hearing on the request was held on February 14, during which PPA holders, including NextEra and Calpine, argued against the injunction. Another hearing on the issue is scheduled before Judge Montali on February 27 to allow time for FERC to weigh in.

Until that time or a further ruling from the Sixth Circuit, parties can do little more than await further guidance on this jurisdictional dispute. In fact, FERC recently dismissed as moot a petition brought by EDF Renewables that raised nearly identical issues as that of the NextEra petition. FERC’s dismissal stopped what would have been a cascade of filings by the multitude of parties holding power contracts with PG&E. (Lilly McKenna)

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.

• On February 8, 2019, the U.S. Environmental Protection Agency (EPA), the U.S. Department of Justice, and the Jefferson County Board of Health (JCBH) announced a settlement with Drummond Company to resolve allegations that Drummond violated the federal Clean Air Act (CAA) at the coke byproduct recovery plant located at its ABC Coke facility in Tarrant, Alabama. ABC Coke is a metallurgical coke producer with two related industrial plants. Coke oven gas produced from the coke production process is recovered for reuse at the coke byproduct recovery plant, with byproduct materials collected for sale and waste waters from the byproduct recovery processes disposed of. EPA alleges that Drummond violated the National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Benzene Emissions from Coke By-Product Recovery Plants, Equipment Leaks and Fugitive Emissions, and Benzene Waste Operations. EPA and JCBH discovered the alleged violations during a compliance inspection at the coke byproduct recovery area of the facility in 2011. After the 2011 inspection and continuing through 2017, Drummond corrected several of the identified alleged violations. During two follow-up inspections conducted in 2014 and 2018, EPA and JCBH observed the corrective actions that Drummond had taken. Under the proposed consent decree, Drummond will pay a civil penalty of \$775,000 and conduct a Supplemental Environmental Project that will require the use of an optical gas thermal imaging camera during four semi-annual monitoring events that will help detect leaks from equipment, piping, pumps, tanks, and valves at the byproducts plant and confirm that corrective actions implemented by Drummond prior to and after entry of the consent decree are effective at reducing and eliminating leaks.

• On January 30, 2019, EPA announced a settlement agreement with wTe Recycling, Inc., an industrial shredding and recycling company in Greenfield, Massachusetts. Under the settlement, wTe Recycling will pay \$277,000 in civil penalties and purchase 81 tons of VOC or nitrogen oxide emission reduction credits as mitigation for excess emissions from the Greenfield facility. wTe Recycling will limit and eventually cease shredding pre-burn municipal ferrous materials by June 2021. The agreement settles EPA allegations that the company violated the CAA and that the Greenfield facility emitted excess volatile organic compounds (VOCs) into the atmosphere. The Greenfield shredding operation was first discovered as a significant source of VOC emissions through EPA-ordered stack testing performed by the company in November 2015. EPA also discovered that the engines used to power the shredder were not meeting the requirements of federal rules for stationary diesel engines. The consent decree also includes a requirement for wTe Recycling to submit an application for a Plan Approval to the Massachusetts Department of Environmental Protection that will incorporate the requirements of the consent decree.

• On February 19, 2019, EPA announced that under a proposed settlement Trident Seafoods Corporation has agreed to reduce emissions of ozone-depleting substances from refrigeration equipment on its vessels and pay a \$900,000 penalty. Trident is one of the largest seafood processing companies in Alaska and the Pacific Northwest. Trident and its subsidiaries Royal Viking Inc. and Golden Dawn LLC own and operate four factory processor vessels, one freighter vessel, nearly 30 catcher and tender vessels, and 10 land-based facilities. In most of these vessels and facilities, Trident uses ozone-depleting hydrochlorofluocarbons (HCFC). Within its numerous fish catching and processing vessels, Trident violated the CAA by failing to promptly repair leaks of the refrigerant R-22, an HCFC. Trident's failures allowed its appliances to leak refrigerant at high rates

for thousands of days, causing over 200,000 pounds of the refrigerant to be released into the atmosphere. Under the settlement, Trident will retrofit or retire 23 refrigeration appliances used on 14 marine vessels to use an alternative refrigerant that does not harm the ozone layer compared to typical refrigerants. Trident agreed to retrofit nine of those appliances as part of a Supplemental Environmental Project. Trident will also conduct routine leak inspections of all appliances, promptly repair leaks, install leak detectors to monitor appliances for leaks, add fluorescent dye into appliances to assist staff in detecting leaks, compile information to assist in identifying common failure points on appliances, and train employees to properly manage the appliances. In addition, the settlement sets a corporate-wide refrigerant leak cap and requires Trident to retain a third-party auditor to review the company's compliance with the consent decree and regulations. Between 2009 and 2016, Trident violated regulations under the CAA National Recycling and Emission Reduction Program, which governs the management of ozone-depleting substances and implements the United State's mandates under the 1991 Montreal Protocol on Substances that Deplete the Ozone Layer. In addition to Trident's failures to repair leaking appliances, the company also failed to create adequate servicing and compliance records on at least 289 occasions. Trident also, at times, used uncertified technicians to perform work on refrigerant equipment and used inadequate refrigerant recovery equipment.

- On January 28, 2019, the U.S. Department of Justice announced that four Audi managers, including a former member of Audi AG's management board, were charged in an indictment filed on January 17, 2019 for their roles in the conspiracy to defraud U.S. regulators and U.S. customers by implementing software designed to cheat U.S. emissions tests in tens of thousands of Audi "clean diesel" vehicles. Richard Bauder, age 69, former head of Audi's Diesel Engine Development Department; Axel Eiser, age 57, former head of Audi's Engine Development Division; Stefan Knirsch, age 52, former head of Audi's Engine Development Division and a former member of Audi's Management Board, and Carsten Nagel, age 50, former head of Diesel Certification, were charged in the Eastern District of Michigan with one count

of conspiracy to defraud the United States, to commit wire fraud, and to violate the CAA, along with multiple counts of wire fraud and multiple counts of making false statements under the CAA. All four are believed to be citizens of Germany. These individuals join Giovanni Pamio, age 61, an Italian citizen, who was charged via criminal complaint in July 2017 and whose extradition from Germany is being sought by U.S. authorities. Pamio was formerly head of Thermodynamics within Audi's Diesel Engine Development Department in Neckarsulm, Germany. According to the indictment, from about 2006 until about November 2015, Pamio led a team of engineers responsible for designing emissions control systems to meet engine standards, including for nitrogen oxides (NOx), for Audi 3.0-liter diesel vehicles in the United States. The indictment further alleges that when Bauder, Eiser, Knirsch, Nagel, and Pamio realized that it was impossible to calibrate a diesel engine that would meet NOx emission standards within the design constraints imposed by other departments of the company, they directed Audi employees to design and implement a software function to cheat the standard U.S. emissions tests. The co-conspirators deliberately failed to disclose the software function, and knowingly misrepresented to U.S. regulators and U.S. customers that the vehicles complied with U.S. NOx emissions standards. Bauder, Eiser, Knirsch, Nagel, and Pamio are also alleged to have marketed the Audi 3.0-liter vehicles to the U.S. public as "clean diesel," when they knew that these representations were false. Audi's parent company, Volkswagen AG, previously pled guilty to three felony counts connected to cheating U.S. emission standards. Volkswagen was sentenced in April 2017 and the company paid a \$2.8 billion criminal penalty.

- On February 14, 2019, EPA announced that it has reached a settlement with Keller Supply Company to resolve alleged violations of the CAA. The Seattle-based company sells wood stoves and heaters in Alaska, California, Idaho, Montana, Nevada, Oregon, Utah, and Washington. The company has agreed to pay a \$8,250 penalty for selling five uncertified residential wood stoves in Alaska, California, Oregon, and Washington in 2016 and 2017. When notified of its violations, Keller contacted its customers and recovered all but one stove.

•On January 28, 2019, Mark Harris, of Versailles, Kentucky, pled guilty in U.S. District Court to one count of violating the CAA by knowingly failing to remove asbestos from a South Point, Ohio electric power plant. Harris was the majority owner and operator of South Point Biomass Generation LLC. He acquired the coal burning electric power plant on Collins Avenue in South Point to convert it to a power generating plant that would use renewable energy. The plant contained seven dormant coal-burning boilers along with their associated piping. According to court documents, Harris commissioned an asbestos survey on the boiler room in 2008, which revealed nearly 224,000 square feet of materials containing asbestos. Beginning in 2011 through October

2013, Harris and others removed approximately two and a half million pounds of metal from the facility and sold it as scrap. Harris knew significant portions of the metal removed were covered in asbestos. He directed others to help him cut through the asbestos labeling on several pipes in order to obtain the scrap metal underneath. The asbestos was stripped from the metal while dry and left on each of the six floors of the power plant. The U.S. Department of Justice has recommended two days in prison, 58 days of house arrest, and 200 hours of community service as a sentence in this case. The court will consider this recommendation at a future sentencing hearing. (Allison Smith)

LAWSUITS FILED OR PENDING

U.S. SUPREME COURT REJECTS PETITION TO REVIEW EXXON'S PERSONAL JURISDICTION CHALLENGE TO MASSACHUSETTS CLIMATE CHANGE INVESTIGATION

On January 7, 2019, the U.S. Supreme Court denied without comment the petition for writ of *certiorari* filed by Exxon Mobil Corporation (Exxon) seeking review of a judgment of the Massachusetts Supreme Judicial Court, the effect of which is to compel Exxon's compliance with a civil investigative demand filed by the Massachusetts Attorney General seeking documents and information relating to Exxon's knowledge of and activities related to climate change.

Background

On April 19, 2016, the Massachusetts Attorney General issued a civil investigative demand (CID) to Exxon as part of:

. . . a pending investigation concerning potential violations of M.G.L. c. 93 A, § 2, and the regulations promulgated thereunder arising both from: 1) the marketing and/or sale of energy and other fossil fuel derived products to consumers in the Commonwealth of Massachusetts (the Commonwealth); and 2) the marketing and/or sale of securities, as defined in M.G.L. c. 110A, § 401(k), to investors in the Commonwealth, including, without limitation, fixed and floating rate notes, bonds, and common stock, sold or offered to be sold in the Commonwealth.

The CID requested documents generally related to Exxon's knowledge and communications relating to climate change. As summarized by the Supreme Judicial Court of Massachusetts:

General Laws c. 93A 'is a statute of broad impact' that prohibits 'unfair methods of competition' and 'unfair or deceptive acts or practices in the conduct of any trade or commerce.' (*Exxon Mobil Corp. v. Attorney General*, 94 N.E.3d 786 (2018)(internal citation omitted).)

Exxon Seeks to Set Aside CID

On June 16, 2016, Exxon filed a motion to set aside the CID and the Attorney General cross-moved to compel Exxon to comply with the CID. Exxon argued that the Massachusetts Superior Court lacked personal jurisdiction over the company in connection with any violation of law that may be the focus of the Attorney General's investigation, that the Attorney General actions in issuing the CID were arbitrary and capricious, that the CID was unreasonably burdensome and lacked specificity, and sought disqualification of the Attorney General and a stay of the proceedings.

The Superior Court of Massachusetts, Suffolk County, denied Exxon's motion and granted the Attorney General's motion to compel compliance with the CID. (*Order on Emergency Motion of Exxon Mobil Corporation to Set Aside or Modify the Civil Investigative Demand or Issue a Protective Order and the Commonwealth's Cross-Motion to Compel Exxon Mobil Corporation to Comply with Civil Investigative Demand No. 2016-EPD-36*, Superior Court of Massachusetts, Suffolk County, Sup. Ct. Action No. 2016-1888-F (January 11, 2017).) The trial court rejected Exxon's argument that the court lacked personal jurisdiction, finding instead that jurisdiction was proper. Exxon argued that for the previous five years, it had neither: 1) sold fossil fuel derived products to customers in Massachusetts, nor 2) owned or operated a retail store or gas station in Massachusetts. Rather:

. . . any service station or wholesaler in Massachusetts selling fossil fuel derived products under the 'Exxon' or 'Mobil' banner is independently owned and operated pursuant to a Brand Fee Agreement ('BFA').

However, the trial court determined that through the BFA agreements, Exxon:

...directly controls the very conduct at issue in this investigation—the marketing of Exxon products to consumers.

This was sufficient for the court to find that the requirements of Massachusetts’ long-arm statute had been satisfied. The court went on to find that its exercise of jurisdiction would be consistent with Exxon’s due process rights, that Exxon had not met its burden to show that the Attorney General acted arbitrarily or capriciously in issuing the CID, that the CID was not unreasonably burdensome or unspecific, rejected Exxon’s request to disqualify the Attorney General on the basis of alleged bias, and denied Exxon’s motion to stay the proceedings. On April 13, 2018, the Supreme Judicial Court of Massachusetts affirmed.

U.S. Supreme Court Declines Review

On September 10, 2018, Exxon filed a petition for writ of *certiorari* seeking review by the U.S. Supreme Court, presenting the question of:

Whether a court may exercise personal jurisdiction over a nonresident corporation to compel its compliance with an investigatory document request where jurisdiction is based principally on third-party contacts that are unrelated to the subject matter being investigated.

According to Exxon, the “case involves a breathtaking assertion of personal jurisdiction over a non-

resident defendant” and the Massachusetts Supreme Judicial Court:

...justified that exercise of judicial power based principally on advertisements, despite the attorney general’s admission that the ads at issue did not speak to the subject matter of the investigation and even though the corporation did not even create or approve the vast majority of the ads.

According to Exxon:

...the Massachusetts Supreme Judicial Court applied an approach to personal jurisdiction that is inconsistent with [the Supreme Court’s] precedents and that flouts core notions of due process.

As noted, the Supreme Court declined review.

Conclusion and Implications

The Supreme Court’s denial of *certiorari* clears the path for Massachusetts’ Attorney General to proceed with its investigation, which will undoubtedly be aided by Exxon’s production of documents in response to the CID.

A copy of the CID is available at the following location: <https://www.mass.gov/files/documents/2016/10/op/ma-exxon-cid-.pdf> (Nicole Martin)

U.S. SUPREME COURT DECLINES TO HEAR CASE ON CALIFORNIA’S DIESEL TRUCK FILTER REGULATION

On January 7, 2019, the U.S. Supreme Court, without explanation, denied petitions from Alliance for California Business (Alliance) and Jack Cody (Cody) to review a state appeals court’s decision relating to a California regulation requiring diesel particulate filters to be installed in commercial trucks. The state appeals court rejected the arguments of Alliance and Cody on jurisdictional grounds, holding that the federal Clean Air Act (CAA), 42 U.S.C. § 7401 *et seq.*, provides for exclusive and original jurisdiction over challenges to such state regulations approved and incorporated into federal law by the U.S. Environmental Protection Agency (EPA). Alli-

ance and Cody contended that the lower court’s decision shields state regulations approved by the EPA from judicial review, regardless if the regulation is in violation of existing state safety laws. [*Alliance for California Business v. State Air Resources Board*, Case No. C083083, ___Cal.App.5th___, 243 Cal.Rptr.3d 22 (3rd Dist. 2018).]

Adoption of Air Quality Standards

Under the CAA, the EPA has the authority to put into effect national primary and secondary ambient air quality standards. 42 U.S.C. §§ 7408, 7409. The states, however, have:

...the primary responsibility for assuring air quality within the entire geographic area comprising such [s]tate by submitting a [State Implementation Plan (SIP)] which [specifies] the manner in which the national primary and secondary ambient air quality standards will be achieved and maintained. *Id.* at § 7407(a).

The state SIP is then submitted to the EPA Administrator for approval, and if approved, the SIP becomes federal law enforced “by either the State, the [EPA], or via citizens suits.” *Bayview Hunters v. Metropolitan Transp.* 366 F.3d 692,695 (9th Cir. 2004).

Additionally, the CAA sets forth the forum in which a state SIP can be judicially challenged. Specifically:

... [a] petition for review of the [EPA] Administrator’s action in approving or promulgating any implementation plan ... or any other final action of the Administrator under this CAA ... which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. 42 U.S.C. § 7607(b) (1).

California’s Truck and Bus Regulation

At the heart of this case is California’s Truck and Bus Regulation (Regulation), which, in pertinent part, requires certain heavy-duty diesel trucks to be equipped with diesel particulate filter (DPF) devices. Cal. Code Regs., tit. 13 § 2025. These devices reduce the amount of diesel particulate matter and oxides of nitrogen emissions from trucks and buses operating within California, and assists California in meeting national standards for air quality. The Regulation also sets forth deadlines in which heavy-duty diesel trucks must be retrofitted with DPFs or upgraded to newer model engines with DPF devices.

In May 2011, the California Air Resources Board (CARB) submitted the Regulation to the EPA to be adopted and incorporated into the state’s SIP.

In its proposed rule incorporating the Regulation into California’s SIP, the EPA discussed the enforceability of the Regulation and the adequacy of California’s legal authority to implement regulations. On April 4, 2012, the EPA issued its final rule approving the submission of the Regulation into California’s SIP. 77 Fed. Reg. 20,308-20,314 (Apr. 4, 2012).

Alliance’s Claims

In a lower state court, Alliance challenged the legality of the Regulation and argued that Alliance members would suffer irreparable harm under the enforcement of the Regulation because its members would be “forced to install an unproven, defective and dangerous technology, to wit the [DPF] device” or suffer fines, penalties, and lost revenue due to the inability to operate their trucks in California. *Alliance*, 23 Cal.Rptr.3d at 27.

CARB filed a motion for judgment on the pleadings, alleging: 1) the Regulation provided a procedure in which owners or operators of a diesel truck subject to the retrofit requirement may receive and exemption upon a showing that installation of a verified filter would violate state and federal health and safety laws; and 2) the court lacked jurisdiction because Alliance members failed to exhaust their administrative remedies prior to filing the lawsuit. *Alliance*, 23 Cal. Rptr.3d at 27. The court granted the motion for judgment on the pleadings.

Cody’s Claims

Before consolidation of his case with Alliance, Cody, an out-of-state professional truck driver, filed in a lower state court with state and federal law challenges against the Regulation. Cody argued that the Regulation violated the dormant commerce clause because the Regulation “discriminates against out-of-state truckers by imposing a disproportionate compliance burden on them.” *Id.* at 25. CARB, again, filed a motion for judgment on the pleadings, demonstrating that the state court did not have jurisdiction to hear Cody’s claims and that the Ninth Circuit had exclusive jurisdiction over such challenges. The court reasoned that “[Cody]’s complaint effectively challenges the validity of the SIP, and therefore is the type of action to which [the CAA] applies.” *Id.* at 29.

The Court of Appeal’s Decision

Upon Alliance’s and Cody’s appeal to the California Court of Appeal, Third Appellate District, the court analyzed two main questions relating to Alliance’s and Cody’s arguments: 1) whether the CAA grants the federal Circuit Courts of Appeals original and exclusive jurisdiction over the actions initiated by the appellants; and 2) whether Alliance’s and Cody’s claims are of the type Congress intended to

channel to the federal Courts of Appeals. *Id.* at 30, 31.

It is well established that:

. . . [s]tate courts are generally presumed to have concurrent jurisdiction with federal courts, subject to the limitations of supremacy clause of the United States Constitution. *Burt v. Titlow*, 571 U.S. 12, 19 (2013).

The U.S. Supreme Court has also held that the presumption of concurrent jurisdiction can be rebutted by:

. . . an explicit statutory directive, by unmistakable implication from legislative history, or by a clear incompatibility between state-court jurisdiction and federal interest. *Gulf Offshore Co. v. Mobil Oil Corp.*, 453 U.S. 473, 478 (1981).

Here, although the court conceded that the CAA is silent as to the jurisdiction of state courts, the court found “the express language of the statute rebuts the presumption of concurrent jurisdiction.” *Alliance*, 23 Cal.Rptr.3d at 30. The CAA reads that the EPA Administrator’s approval of a SIP submission “may be filed *only in* the United States Court of Appeals for the [appropriate circuit].” 42 U.S.C. § 7607(b)(1), italics added. Accordingly, the plain language of the statute does not allow for concurrent jurisdiction.

Relying on “sound principles of statutory interpretation,” the court also unequivocally found that the CAA granted federal Circuit Courts of Appeals original and exclusive jurisdiction over the types of challenges brought by Alliance and Cody. *Alliance*, 23 Cal.Rptr.3d at 31. Namely, the appellants argue that their challenges to the Regulation are matters of state

law—not involving SIP or the EPA’s approval of the Regulation and incorporation into the SIP.

The court, however, remained unconvinced:

Our analysis turns on the *effect* of [the appellant’s] requested relief and not how Cody and Alliance chose to *frame* their challenges to the Regulation. Otherwise creative lawyering could override congressional intent, a result not permitted by law. *Id.*

If the court were to find that the Regulation was in violation of state law, it would also implicitly repeal that portion of the state SIP that was approved by the EPA Administrator. The court could not divorce the action of the EPA Administrator incorporating the Regulation into the California SIP from the appellants’ arguments that the Regulation violated state health and safety laws; thus, the court held that the lower court lacked jurisdiction over appellants’ claims and they were mandated by the CAA to be filed before the Ninth Circuit.

Conclusion and Implications

While Alliance and Cody sought to argue the validity of California’s Regulation mandating DPF devices in diesel commercial trucks against existing California law, the state appellate court analyzed this case primarily as one of statutory interpretation. Since the U.S. Supreme Court declined to hear Alliance’s and Cody’s arguments regarding the Regulation without explanation, it is now held that California state courts may not have the right to opine on the validity of state regulations that are adopted into federal law pursuant to the Clean Air Act. (Nicolle A. Falcis, David D. Boyer)

JUDICIAL DEVELOPMENTS

D.C. CIRCUIT UPHOLDS FERC DECISION NOT TO INCLUDE GREENHOUSE GAS EMISSIONS IN PROJECT ENVIRONMENTAL ANALYSIS

Appalachian Voices, et al., v. Federal Energy Regulatory Commission, unpub.,
Case No. 17-1271 (D.C. Cir. Feb 19, 2019).

The D.C. Circuit upheld, in an *unpublished decision*, a finding by the Federal Energy Regulatory Commission (FERC or Commission) that FERC was not obligated to include greenhouse gas (GHG) emissions in the agency's review of whether to approve a pipeline upgrade request over protests that the climate change impacts of the project were not adequately addressed or reviewed.

Background

The underlying FERC order related to its review of a \$4.6 billion upgrade to the Mountain Valley gas pipeline, a 300-mile, 2 Bcf/d pipeline. The FERC order granting the construction permit maintained a 3-2 split among the FERC Commissioners. The majority—held by Chairman McIntyre and Commissioners Chatterjee and Powelson, all Republican appointees, found that the downstream effects are neither indirect nor cumulative under the National Environmental Policy Act (NEPA), and thus did not require Commission review. Commissioners LaFleur and Glick issued a dissent, emphasizing the need to consider GHG emissions even if NEPA were not implicated. Commissioner Glick has described the social cost of carbon calculations as “a good tool for us to be able to determine whether an externality is significant, and if it's significant, if it's outweighed by the benefits” of a proposed project.

Environmental groups subsequently challenged FERC's grant of approval, contending that the agency's analysis, particularly with regard to the social cost of carbon, was faulty.

Changes to FERC Policy

In April of 2018 FERC initiated a review of its nearly twenty-year-old policy on its approval process for natural gas pipeline approvals. Under the Natural Gas Act, FERC is charged with approving and issuing

construction certificates for interstate gas pipeline projects. If a project passes a threshold cost inquiry, FERC is to determine whether there are any adverse impacts from the project (on customers, market, or communities and landowners along the proposed route) that should be eliminated or minimized.

The D.C. Circuit's Ruling

In a hearing on the issue before the D.C. Circuit, FERC argued its position that the link between the Mountain Valley project and estimated GHG emissions was too nebulous to calculate or include in the agency's consideration of whether to grant or deny the construction certificate. FERC attempted to distinguish this case from a 2017 D.C. Circuit order in *Sierra Club v. FERC* finding that the agency should have evaluated the downstream GHG impacts of the pipeline project. FERC argued that since the Mountain Valley project upgrade did specify a particular amount of natural gas that would be used by a particular source of consumption, any GHG calculation would be “inherently speculative” and based upon “generalized assumptions”.

A three-judge panel from the D.C. Circuit issued a brief, *unpublished* decision affirming FERC's position on February 15.

Conclusion and Implications

While the D.C. Circuit opinion, comprised of a three-judge panel, was unpublished and has limited precedential value, its outcome will undoubtedly be relied upon by industry as an indication of the Circuit Court's willingness to show deference to FERC analysis that is reasonably explained. While FERC's internal pipeline policy review is still pending, the D.C. Circuit ruling indicates that for the time being, FERC may continue to evaluate emissions data only where it finds that there is a sufficient causal relation-

ship between the proposed project and any upstream or downstream emissions levels.

Commissioner Glick recently dismissed claims that FERC has become a politicized agency, particularly under its new 2-2 split after the recent death of Commissioner McIntyre. Speaking to reporters,

Glick stated: “I think FERC itself is as independent as an independent agency can get,” he said. “And even though our decisions or our votes come down on party lines, I think among the commissioners themselves, I think there’s never really a discussion of politics.”
(Lilly McKenna)

FOR A SECOND TIME, NINTH CIRCUIT RULES IN FAVOR OF CALIFORNIA’S LOW CARBON FUEL STANDARD

Rocky Mountain Farmers Union v. Corey, 913 F.3d 940 (9th Cir. 2019).

In a decision issued on January 18, 2019, the Ninth Circuit Court of Appeals ruled in favor of the State of California, upholding its Low Carbon Fuel Standard (LCFS). The decision is *Rocky Mountain Farmers Union v. Corey* (*Rocky Mountain II*) and it is the second time the Ninth Circuit has ruled in favor of the LCFS (the previous decision, issued in 2013, is known as *Rocky Mountain I*).

Background

In *Rocky Mountain I*, the Ninth Circuit considered a challenge to the LCFS under the Commerce Clause of the United States Constitution. The LCFS was promulgated by California’s Air Resources Board (CARB) and, according to CARB:

...is designed to encourage the use of cleaner low-carbon fuels in California, encourage the production of those fuels, and therefore, reduce greenhouse gas emissions.

In 2013, the Ninth Circuit upheld the LCFS when it rejected some of the plaintiffs’ claims and remanded the case for further proceedings on the remaining claims.

According to the court, *Rocky Mountain II* concerns three versions of the LCFS: “(1) the first LCFS, which went into effect in 2011; (2) the LCFS as amended in 2012; and (3) and the LCFS which replaced the first LCFS in 2015,” with the claims having the “same core structure now as they did” in 2013. The court held that the plaintiffs’ challenges to the 2011 and 2012 LCFS were made moot by their repeal and also affirmed the dismissal of the plaintiffs’ claims against the 2015 LCFS because they were precluded

by the court’s decision in *Rocky Mountain I*. Turning to new arguments, the court concluded they were without merit.

The Ninth Circuit’s Decision

In reviewing the claims in this case, the court first noted that, since 2006, CARB has acted under a legislative mandate to reduce California’s greenhouse gas emissions. The court opined that the “California legislature is rightly concerned with the health and welfare of humans living in the State of California” and then noted that Californians “may be subjected, for example, to crumbling or swamped coastlines, rising water, or more intense forest fires” as a result of the volume of greenhouse gas emissions. The plaintiffs’ challenges to the various LCFS versions were mainly based on constitutional grounds. Specifically, the plaintiffs claimed that all versions of the LCFS violated the following constitutional protections:

- (1) the Commerce Clause and ‘the federal structure of the Constitution’ by regulating extraterritorially.
- (2) the Commerce Clause by facially discriminating against interstate and foreign commerce in their treatment of crude oil and ethanol.
- (3) the Commerce Clause by purposefully discriminating against interstate and foreign commerce in their treatment of crude oil and ethanol.

Rocky Mountain I had already analyzed whether the 2011 LCFS facially discriminated against interstate

commerce and rejected that claim. In *Rocky Mountain I*, the court also ruled that the 2011 LCFS did not regulate extraterritorially. In *Rocky Mountain II*, the court held that the analysis of *Rocky Mountain I* remained the same for the 2015 LCFS and the plaintiffs conceded that their facial discrimination challenges were based on the same premises. The U.S. District Court concluded that the plaintiffs' claims against the 2015 LCFS should be dismissed based on *Rocky Mountain I*, and the Ninth Circuit agreed.

State's Right to Address Harm within Its Lands

The Ninth Circuit, in affirming the decision against the plaintiffs, repeatedly remarked on California's right to address environmental concerns within its borders. The court opined that "California has attempted to address a vitally important environmental issue with vast potential consequences." The court then stated that "It seems clear beyond dispute that potential climate change poses one of the most difficult challenges facing all civilizations worldwide for the twenty-first century" and that by:

...recognizing emissions that occur throughout the lifecycle of different fuels, California has offered a potential solution to the perverse incentives that would otherwise undermine any attempt to assess and regulate the carbon impact of different fuels.

The court described California's actions as an experiment and opined that the experiment could not succeed without "the ability to differentiate the different production processes and power generation that are used to produce those fuels." The court also believed that California's experiment, if successful, could serve as a model for other states. The court concluded its facial discrimination discussion by opining that:

...if the states are to remain a source of 'innovative and far-reaching statutes' that 'supplement[n] national standards,' they must be permitted to submit the goods and services sold within their borders to certain environmental standards without having thereby discriminated against interstate commerce from states with lower local standards.

Conclusion and Implications

The issues covered in this decision were largely covered in the court's previous decision in *Rocky Mountain I*. Of special interest this time around was the court's strong stance on California's ability to address environmental concerns within its borders. The Ninth Circuit's opinion may be accessed online at the following link: <http://cdn.ca9.uscourts.gov/datastore/opinions/2019/01/18/17-16881.pdf> (Kathryn Casey)

CALIFORNIA SUPERIOR COURT UPHOLDS ENVIRONMENTAL REVIEW FOR POSEIDON DESALINATION PROJECT

California Coastkeeper et al v. California State Lands Commission,
Case No. 34-2017-80002736 (Sac. Super. Ct. 2019).

In January 2019, the Sacramento Superior Court dismissed a California Environmental Quality Act (CEQA) challenge to the State Lands' Commission's (SLC) 2017 approval of a lease amendment under which a Huntington Beach desalination project proposed to operate. The decision, *California Coastkeeper et al v. California State Lands Commission* removes one hurdle for the project, which must still obtain regulatory approvals from the Regional Water Quality Control Board. The decision by Judge Sueyoshi of the Sacramento Superior Court also offers a detailed

analysis of the distinctions between "supplemental" and "subsequent" environmental review under CEQA—a distinction that is informative to water agencies in all stages of infrastructure and environmental review planning.

Background

In 2010, acting as the lead agency under CEQA, the City of Huntington Beach (City) certified an Environmental Impact Report (EIR) for the "Seawater Desalination Project at Huntington Beach." The EIR

evaluated the addition of a desalination facility at a then-existing powerplant, as well as offshore improvements necessary to carry out the desalination work. The City took that action in its role as lead agency for the project under CEQA.

The tidelands within which the desalination facilities were proposed to operate were subject to a 2007 lease between the powerplant operator and the State Lands Commission. Following the approval of the project's EIR, the State Lands Commission (acting as a CEQA responsible agency, and in reliance on the EIR), approved a lease amendment that added Poseidon Resources as a co-lessee on the project site.

In 2016, Poseidon applied for another amendment to the SLC lease, the purpose of which was to allow for modifications to the desalination facility design to include (among others) the placement of 1 millimeter screens on the facility's existing intake pipes. The SLC determined that these changes, and intervening efforts to comply with the State Water Resources Control Board's 2015 Desalination Amendment, were sufficient to trigger the requirement for a supplemental EIR, which was released in 2017. The 2017 Supplemental EIR relied upon the analysis in the 2010 EIR for the project, and new material focused on the "minor changes with the Commission's lease area" to the previously approved desalination plant structures and operations.

The SLC approved the lease amendment, subject to the future approval of the Santa Ana Regional Water Quality Control Board. That application remains pending.

Challenges to the SLC Environmental Review

In November 2017, petitioners California Coastkeeper Alliance, California Coastal Protection Network, and Orange County Coastkeeper (petitioners) filed a petition for writ of mandate, challenging the SLC's approval of the lease amendment and challenging the sufficiency of that agency's review under CEQA.

Petitioners argued that the lease amendments and anticipated changes to the desalination plant's proposed operations were "substantial changes" requiring "major revisions" of the project's EIR under Public Resources Code § 15162, and further that the SLC was required under Public Resources Code § 15052 to assume a lead agency role in the preparation of that

environmental review. In addition, petitioners argued that the SLC violated its duties under the public trust doctrine to consider and evaluate the proposed project.

The Superior Court's Decision

CEQA Claims

The court rejected each of these arguments in turn. First, CEQA requires that a new, subsequent EIR be prepared only in those situations where: 1) *substantial changes* in the project analyzed or the impacts associated with it, which will require "major revisions" to the prior environmental review, are discovered; or 2) new information, which was not known at the time of the original documents' preparation, is uncovered. Pub. Res. Code § 21166; CEQA Guidelines § 15162. In the alternative, where "only minor additions or changes would be necessary" to make the prior environmental document applicable to the changed circumstances, a supplemental EIR may be prepared. CEQA Guidelines § 15163.

The court observed that SLC's decision to prepare a supplemental EIR, rather than a subsequent document, was a factual determination subject to the substantial evidence standard of review. Petitioners failed to demonstrate that the SLC's decision to proceed with a supplemental EIR was not supported by substantial evidence. As to certain of the changes in the project's design and operations, the court opined that these changes were either too speculative (*e.g.* future use of the treated water for groundwater supplementation). As to many of the challenged insufficiencies in the project's environmental review, petitioners had failed to identify evidence favorable to the other side, and explain why that evidence was lacking.

Public Trust Claims

Petitioners' public trust claims were tied to the related claim that the SLC had failed to properly evaluate the project and its impacts under CEQA. The Court rejected these claims as well, finding that the SLC through its Supplemental EIR had "engaged in a thorough analysis of the proposed project, as well as a specific public trust analysis." (Slip Op., p. 18). Because petitioners failed to demonstrate that the SLC's decision was arbitrary and capricious, this challenge also failed.

Conclusion and Implications

In addition to representing forward progress for a significant new desalination project, *California Coastkeeper et al v. California State Lands Commission* offers a rare and detailed analysis of distinctions between a supplemental and subsequent EIRs. Given the long time scale and often inter-related nature of environmental review on water infrastructure projects, this

discussion may be informative to other water agencies in their planning. In addition, future appeals of the Sacramento Superior Court decision may serve to further develop case law on the distinction between supplemental and subsequent EIRs. Judgment was filed in the case on February 1, 2019, and appeals may be filed through the spring.
(Rebecca Smith, Meredith Nikkel)

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