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CLIMATE CHANGE™

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FEATURE ARTICLE

THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE SPECIAL REPORT: GLOBAL WARMING OF 1.5°C IS A CRUCIAL NEW BENCHMARK

By Dr. David T. Kim, Shaena B. Ulissi, Malini Nambiar and Libby Koolik

The Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations in 1988 to provide the world with objective scientific knowledge and projections on climate change and impacts. Thousands of scientists contribute and review its work, and it has produced regular assessment reports on the state of knowledge of climate change. The Fifth Assessment Report (AR5) was released in November 2014 and provided potential pathways to keep the world from warming more than 2 degrees Celsius (°C) above preindustrial times, thus avoiding some irreversible climate outcomes. The Paris Climate Agreement drafted in December 2015 set 2°C as the world's long-term goal.

Since that time, changes in technology, policy, and modeling have resulted in a better understanding of the potential dangers of reaching 2°C. The IPCC released this report that highlights climate change impacts that could be avoided by limiting global warming to 1.5°C compared to 2°C, including lower sea level rise, continued Arctic Ocean sea ice in summer, and preservation of some coral reefs. The report chapters describe mitigation pathways to achieve the 1.5°C outcome; impacts of 1.5°C warming on natural and human systems; strengthening and implementing the global response to the threat of climate change; and sustainable development, poverty eradication and reducing inequalities. To achieve a 1.5°C objective, dramatic decarbonization needs to occur quickly.

Chapter 2: Mitigation Pathways Compatible With 1.5°C in the Context of Sustainable Development

To achieve a global warming target of 1.5°C, researchers needed to both quantify the amount of greenhouse gases (GHGs) that could be emitted to keep temperatures below this limit and determine what types of pathways (if any) could be implemented to achieve this amount of GHG emissions. They calculated the remaining carbon budget to stay below 1.5°C using a combination of modeling from the AR5 and actual observations of temperature. Not including Earth-system feedbacks such as permafrost thawing, a total of 550 to 1,100 gigatons of carbon dioxide (GT CO2) can be emitted worldwide to remain below the target, based on simulations that represent the 33rd to 67th percentile. To interpret these numbers, there is a 33 percent (one in three) chance that the world would exceed 1.5°C if 550 GT CO2 are emitted, and a 67 percent (two in three) chance it will exceed the target if 1,100 GT CO2 are emitted. For context, about 290 GT CO2 were emitted worldwide from 2011-2017, with about 40 GT CO2 emitted in 2017. At the current emissions rate, there is very little time left to substantially reduce emissions.

Researchers modeled mitigation pathways that would stay below 1.5°C with 50-66 percent likelihood, those that would exceed 1.5°C temporarily but decrease back below 1.5°C by year 2100, and those that would limit peak warming to 2°C. Integrated assessment modeling includes all sectors, from population, energy, agriculture, land use to economic growth assessments, and scenarios include policy decisions and timeframes for implementation of mitigation measures. Though many pathways of growth and emissions-related mitigation can lead to the 1.5°C and 2°C, outcomes, no models could meet these targets under certain shared socio-economic pathways that included a combination of high population growth, focus on domestic and regional security issues, and rapidly increasing fossil fuel consumption. The least challenging pathway to meet the targets is

a sustainable development pathway, with low population growth, high economic growth per capita, high human development, high technological progress, environmentally oriented technology and behavioral change, resource efficient lifestyles, low energy and food demand per capita, and convergence and global cooperation.

The scenarios that could meet the global targets had commonalities. All included carbon-neutral energy systems and a substantial reliance on bioenergy. All include a rapid phase-out of CO2 emissions and deep emissions reductions in other GHGs and climate forcers through broad transformations in energy, industry, transport, buildings, agriculture, forestry, and other land-use sectors. The power sector should be fully decarbonized by 2050. Across all pathways, electricity supplies an increasing share of end-use energy, and the amount of electricity supplied by fossil fuels worldwide drops to 0-33 percent by 2050. Carbon capture and storage is deployed in varying levels depending on the scenario but is needed to get to net zero for scenarios that include continued natural gas and coal use. Transportation fuel emissions are reduced through efficiency improvements, biofuels, electrification, and avoidance and mode-shift strategies.

Overall, mitigation is possible but requires rapid changes in technology, policy, and behavior now. Additional flexibility may be possible with advanced technologies that are not yet fully integrated into modeling. Further measures that are not typically modeled but have the potential to change mitigation pathways include disruptive technologies such as large-scale hydrogen generated from renewable energy with CO2 captured from the atmosphere, algae as a bioenergy source, plant-based proteins and cultured meat to substitute for livestock products, and enhanced carbon sequestration in soils. Some mitigation approaches include of carbon removal mechanisms; however, large uncertainties remain in feasibility and effectiveness of carbon-dioxide-removal (CDR) technologies. Finally, current global pathways do not generally include mode-shift and travel demand management (*e.g.*, behavioral) changes that could reduce mobile emissions.

Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems

Chapter 3 describes the impacts of warming the Earth by 1.5°C (or 2.7°F) and 2.0°C (or 3.6°F). Since the preindustrial period (1850 – 1900), there has been evidence that changes in the global average temperatures have had impacts on organisms, ecosystems, and human systems. Moreover, there is high confidence that human-induced global warming has already caused multiple observed changes in the climate system including increases in land and ocean temperatures, more frequent heat waves, more frequent and more intense precipitation events, and increased risk of draught. Scientists have observed changes in temperature extremes and heavy precipitation events in the 1991-2010 period compared to the 1960–1979 period, when global warming of approximately 0.5°C occurred.

This chapter describes the climate change risks for natural and human systems and compares the expected differences between a 1.5°C and a 2°C warmer world. With respect to terrestrial and wetland ecosystems, higher latitude areas will have larger impacts. High-latitude tundra and boreal forest are particularly at risk. Constraining warming to 1.5°C would prevent the melting of permafrost area of 2 million square kilometers over centuries compared to 2°C. At 1.5°C, sea ice will remain during most summers whereas at 2°C, ice-free summers are ten times more likely. Additionally, the risks of species losses and extinction are much less in a 1.5°C versus a 2°C warmer world; the percent of species losing their geographic range is 6 percent for insects, 8 percent for plants, and 4 percent for vertebrates in a 1.5°C warmer world. These percentages are nearly doubled for plants and vertebrates, and two and a half times higher for insects in a 2°C warmer world. The oceans are also experiencing large-scale changes. In a 1.5°C warmer world, warmer water temperatures are causing species of plankton and fish to relocate to cooler temperatures to higher latitudes, while other species unable to move, such as coral reefs and kelp forests, will experience high rates of mortality and loss. Estimates show that 70 to 90 percent of coral reefs will disappear when global warming exceeds 1.5°C. With respect to water resources, the frequency and magnitude of floods and droughts and water scarcity are smaller in a 1.5°C warmer world compared to a 2°C warmer world. At 1.5°C increase, an estimated 350 million people worldwide will be exposed to severe draught; that increases to 411 million people under a 2°C scenario. Specific risks will depend on geographic regions and

socio-economic conditions. The population exposed to flooding from sea level rise in 2100 is estimated to be 31 to 69 million people under a 1.5°C warming; that figure increases to 32 to 80 million under a 2°C warming.

Warming at 1.5°C compared to 2°C will reduce impacts related to food security. Specifically, crop yield and nutritional content is expected to be most impacted in Sub-Saharan Africa, South-East Asia, and Central, and South America. Globally, a loss of 7-10 percent of rangeland livestock is expected at 2°C warming, which would result in considerable economic consequences for many regions. At 1.5°C warming, fisheries and aquaculture will face increased risks from ocean warming and acidification; these risks to coastal livelihoods and industries will increase with warming beyond 2°C.

With respect to human systems, there is high confidence that increases in global warming will affect human health. At 1.5°C, about 14 percent of the world population will be exposed to severe heat waves at least once every five years; at 2°C, that number increases to 37 percent. Risks for heat-related morbidity and mortality, particularly in urban areas, are lower at 1.5°C compared to 2°C. Contributing to these risks are ozone-related mortality, undernutrition, and vector-borne diseases. Poverty and disadvantage have already increased with recent warming and are expected to increase in many populations, particularly for agricultural-dependent communities. Further research needs to be performed on the relationship between human migration and global warming.

Global warming has and is expected to further affect key economic sectors and services. Sun, beach, and snow sports tourism has already been affected and will continue to be affected under warming of 1.5°C. Risks for coastal tourism will increase with temperature-related degradation and loss of beach and coral reefs. There is some evidence that the largest impacts on economic growth from a warmer world will be in the tropics and the Southern Hemisphere subtropics and that the largest reductions in growth will be for low- and middle-income countries and regions (*i.e.*, the African continent, southeast Asia, India, Brazil, and Mexico.)

Chapter 4: Strengthening and Implementing the Global Response

Limiting global warming to 1.5°C requires transformative systemic change. National pledges made pursuant to the Paris Agreement are not sufficient to meet the stated temperature limits or adaptation goals. Effective global response requires that all countries raise their level of ambition for both mitigation and adaptation and requires enhanced support for developing countries and for poor and vulnerable people. Greater scale and pace of change are required. This chapter of the IPCC report focuses on the feasibility of specific mitigation and adaptation measures for systems transitions, as well as the broader governance and financial needs to enable such transitions.

Systems transitions required to limit warming to 1.5°C require dramatic decarbonization in energy, industrial, land, urban, and infrastructure systems. The energy system transition is underway in many sectors and regions. Whereas renewable energy generation and storage have seen considerable advances, technologies like nuclear energy or carbon capture, utilization, and storage (CCUS) for the power sector have not similarly improved. The industrial systems transition is technologically possible using measures like electrification, and hydrogen or bio-based fuels, however, various constraints on these options present financial risks to many firms. Thus, improving energy efficiency may be a more feasible approach, but would require CCUS as a complement to be 1.5°C-consistent. The land and ecosystems transition can utilize measures like mixed crop-livestock agriculture systems, improving irrigation efficiency, biotechnology to improve agricultural productivity, and behavioral changes around dietary choice and food waste to reduce emissions and build adaptive potential. Tradeoffs with food, water, and livelihood security must be carefully weighed. The urban and infrastructure systems transition requires further electrification, energy efficiency, and renewable energy gains, as well as decarbonized transportation, and use of technologies like smart grids and energy storage technologies. It could also involve adaptation measures like green infrastructure, urban agriculture, and adapting buildings through planning. Overarching adaptation options like investments in health, social security, risk-sharing and -spreading are all cost-effective measures to build adaptive capacity.

There is no documented historic precedent for the geographic and economic scales and required rates of changes to global systems described here. The IPCC researchers specifically note the following: an effec-

tive governance framework would include accountable multi-level governance (including industry, civil society, and scientific institutions), coordinated sectoral and cross-sectoral policies that enable multi-stakeholder collaboration; strengthened global-to-local financial architecture for greater access to finance and technology that addresses climate-related trade barriers; improved climate education and awareness; arrangements to accelerate behaviour change; strengthened climate monitoring and evaluation systems; and reciprocal international agreements that are sensitive to equity and the Sustainable Development Goals (SDGs). Institutional capacity must be enhanced to accelerate climate policy planning and implementation, as well as accelerated technological innovation, deployment and upkeep. Behavioral change can significantly reduce emissions, and so aligning climate actions with people's core values may help improve the cost-effectiveness of climate policies.

The researchers also note that low-emission investments are required for rapid decarbonization. Policy instruments to enable this investment include reduction of inefficient fossil fuel subsidies, price and non-price policy instruments (though carbon pricing alone is not sufficient to enable systems transitions), and de-risking financial instruments and mobilizing long-term low-emission assets. Additionally, reducing impacts at and adapting to 1.5°C requires significant expansion of adaptation finance. It is estimated that 5-10 percent of annual capital revenues must be redirected to climate-sensitive savings and expenditure to move towards long-term low-emissions assets.

The chapter concludes by acknowledging substantial remaining knowledge gaps around strengthening the global response to climate change. Uncertainties will need to be resolved around questions including how to accelerate rates of change and scale up solutions, how climate policies converge within global governance and financial frameworks, to what extent it will be needed to harmonize macro-financial and fiscal policies, and so on. The researchers note that the global response to limiting warming to 1.5°C is a new knowledge area, but that these questions must urgently be resolved for transformative systemic change to become a reality.

Chapter 5: Sustainable Development, Poverty Eradication, and Reducing Inequalities

Because the response to climate change must be a global one, researchers examined how the effects of that response will be distributed. The effects of climate change vary heavily with location and level of development, and different solutions will have different effects on each nation-state. One way to evaluate the design of climate change strategies is through the UN's Sustainable Development Goals (SDGs), which act as a protocol for establishing equality and basic rights for all people. SDGs focus on reducing poverty and inequality, increasing access to fundamental resources such as clean air and water, conserving natural environments, and maintaining peace. It is impossible to achieve the SDGs without mitigating climate change and irresponsible to mitigate climate change without consideration of the SDGs. This chapter of the IPCC report focuses on the dynamic interplay between strategies for achieving the 1.5°C target and strategies for achieving the SDGs.

Researchers first demonstrate the effect of achieving the 1.5°C target on SDGs relative to the 2oC target. They estimate that approximately 62 to 457 million more people will be at risk of poverty due to climate risks if global temperatures are increased to 2°C instead of 1.5°C. This increase is due to health problems and resource availability associated with the 2°C temperature rise. However, researchers also agree with high certainty that even a 1.5°C increase in global average temperature will result in significant risks to natural and human systems, disproportionately affecting low-income, developing, indigenous, or coastal communities.

In evaluating solutions, the researchers describe the relationship between global warming and sustainable development as one of synergies and trade-offs. Synergies describe policy choices that both limit warming and contribute toward the advancement of the SDGs. Trade-offs occur when a policy advances one at the expense of the other. An example of a synergy is sustainable forest management; this practice conserves vital carbon sinks while simultaneously providing clean air and ecosystem protection. Conversely, a trade-off occurs when rapidly burning fossil fuels reduces poverty of a nation but enhances global warming through increased emissions of greenhouse gases.

In their discussion of strategies, the panelists form two main conclusions. First, a well-designed global warming mitigation pathway can and must advance multiple SDGs simultaneously. These are pathways with high ratios of synergies to trade-offs, termed Climate-Resilient Development Pathways (CRDPs). There is no one prescription CRDP for every community and nation. Instead, researchers emphasize the importance of equity in discussing and developing the CRDPs for each community. An example of a CRDP would be sustainable development of a city to have low energy demand and high energy efficiency. Second, they hold that the opposite is also true: poorly-designed or implemented strategies could be detrimental to the success of SDGs. Many potential global warming mitigation solutions have significant trade-offs for at-risk communities. For example, bioenergy is an attractive option that many developed nations are considering. However, increased land use for farming bioenergy crops could lead to increased food scarcity and global hunger.

The chapter concludes with two resounding conclusions: limiting global warming is fundamental for the success of SDGs and equity is an essential element of designing CRDPs. Sustainable development relies on all actors participating; in the case of climate change, this hinges on massive societal change. With high confidence, the researchers agree that all parties need to coordinate and cooperate to develop and fund CRDPs that are synergistic and move us toward sustainable, equitable, and low-carbon futures.

See, Intergovernmental Panel on Climate Change (IPCC) Global Warming of 1.5°C. Special Report 15 (SR15). Available at: http://www.ipcc.ch/report/sr15/

Conclusion and Implications

Since the 2015 Paris Climate Agreement set 2°C as the world's long-term goal, changes in technology, policy, and modeling have resulted in a better understanding of the potential dangers of reaching 2°C. The IPCC released this report with a clear message: limit temperature increases to 1.5°C as compared to 2°C, and the impacts from a warming world on natural and human systems would be greatly reduced. But most certainly, to achieve a 1.5°C objective, dramatic decarbonization needs to occur—quickly.

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CLIMATE CHANGE NEWS

THE FUTURE IS IN RENEWABLES IN ARIZONA: THE IMPACT OF THE ANTICIPATED NAVAJO POWER GENERATING STATION'S 2019 CLOSURE

On Thursday, September 20, 2018, Middle River Power withdrew as a potential buyer for the beleaguered Navajo Generating Station near Page, Arizona. The Navajo Generating Station (NGS) is the biggest coal fired power plant in the West and one of the largest emitters of carbon. NGS has provided approximately 750 jobs to members of the Navajo Nation and the Hopi Tribe as well as royalties paid by Peabody Energy for operating the Kayenta Coal Mine on Navajo and Hopi land. (*See*, Randazzo, Ryan, "Death of Navajo Coal Plant Deal Will have Wide-Ranging Consequences for Tribes," azcentral.com (September 21, 2018)).

The Navajo Generating Station

NGS consists of three coal-fired steam electric generating units serving customers in Arizona and Nevada. Its fuel source is coal from the Kayenta Mine that is transported 78 miles by an electric train. NGS first began producing electricity in 1974. The Salt River Project (SRP) operates NGS and owns 42.9 percent of the power plant, while the United States Bureau of Reclamation owns 24.3 percent, Arizona Public Service Co. owns 14 percent, NV Energy owns 11.3 percent, and Tucson Electric Power owns 7.5 percent. NGS supplies more than 90 percent of the power needed to pump water through the Central Arizona Project canal (CAP), and CAP is the single largest end user of power, as well as the largest single source of renewable water supplies in Arizona. (Navajo Generating Station Plant Overview, srpnet.com).

In June 2017, the owners of NGS announced plans to close the plant after 2019, when a lease and agreement for the plant are set to expire. (The Impact of NGS Closure on CAP, cap-az.com (July 2018) at 2). The United States has attempted to assist the Hopi Tribe and Navajo Nation in efforts to keep the plant and the coal mine open by finding a new buyer. However, because of lower prices for natural gas and renewable energy like solar, coal power is becoming too expensive, and many aging plants like NGS would need a significant investment of resources to bring them into compliance with air quality standards. (Navajo Generating Station and the Central Arizona Project, cap-az.com (February 2017)). Environmentalists have been cheering the closure of the plant, but for the many tribal members who will lose a reliable, lucrative job, the closure will bring great uncertainty. Some workers will find work at other power plants around Arizona and some proposals for new economic opportunities to take the place of the plant are being discussed; however, the communities that rely on NGS for employment will see significant changes.

Lawsuit Filed and Solar Energy Generation Agreement

In April 2018, the Hopi Tribe and coal-miners sued the Central Arizona Project, trying to force CAP to purchase power from NGS even if it is no longer cost effective to do so. CAP expects that it will save money by diversifying its energy portfolio to include more natural gas and solar energy. Randazzo, Ryan, Lawsuit: Navajo Coal Plant Must Keep Running Till Debt Paid Off, azcentral.com (May 1, 2018).) Notwithstanding the lawsuit, in June 2018, the CAP Board approved two contracts—one for solar energy—that will collectively supply about 14 percent of CAP's base load power after 2019. Randazzo, Ryan, Despite Protests from Navajo Miners, Central Arizona Project Approves Power Deal, azcentral.com (June 7, 2018).) Each deal still left open the possibility that CAP could purchase some of its power from NGS if the plant were purchased and operated by a new owner.

The solar deal approved by CAP's Board will result in the construction of a 30-megawatt solar plant somewhere along the canal, which will sell power to CAP for just 2.5 cents per kilowatt-hour, one of the cheapest contracts of its kind in the country. Merchant, Emma Foehringer, Arizona Water Provider

Approves Record-Low-Cost Solar PPA to Replace Coal, greentechmedia.com (June 8, 2018).) In fact, CAP expects to save more than $14 million in 2020 by purchasing power from more diverse sources. (The Impact of NGS Closure on CAP (July 2018) at 3.)

Conclusion and Implications

Some believe that the future is in renewables. According to Nadine Narindrankura for the environmental group To' Nizho'ni A'ni', "the time and money spent over the last year to find someone to buy the costly coal plant distracted from a clean-energy transition that our people desperately need." Randazzo, Ryan, Death of Navajo Coal Plant Deal Will have Wide-Ranging Consequences for Tribes, azcentral.com (September 21, 2018).) She says "Navajo leadership needs to seize this moment. The opportunity has presented itself once more to prepare for a successful transition away from coal. The future is in renewables, not in a dead coal market." *Id.* In fact, a new solar plant is currently being constructed near the coal mine that will send power to the tribal utility and SRP, although it will only create a few jobs and a fraction of the power of NGS. But there are many new opportunities on the horizon.
(Alexandra Arboleda, Lee Storey)

LEGISLATIVE DEVELOPMENTS

U.S. SENATE BILL SEEKS TO MANDATE PUBLIC COMPANIES' CLIMATE RISK DISCLOSURES

In the past few years, a lawsuit was filed by Exxon Mobil Corporation (Exxon) shareholders alleging that Exxon failed to properly disclose climate-related risks to its assets and operations. In that same time frame, state and federal investigations have been conducted against Exxon on similar grounds. Perhaps as a result of these and similar matters, on September 24, 2018, U.S. Senator Elizabeth Warren introduced bill S 3481, the Climate Risk Disclosure Act of 2018 (Act).

Climate Risk Disclosures

The Attorney General of New York and the Attorney General of Massachusetts are currently investigating whether Exxon misled investors and the public about climate change and its potential effects on Exxon's business. In August 2018, a federal District Court judge in Texas refused to dismiss a lawsuit filed against Exxon by investors alleging that Exxon's fraudulent misrepresentations regarding climate change had impacted the value of Exxon stock. In the same month, President Donald Trump's administration dropped a two-year Securities and Exchange Commission (SEC) accounting investigation into Exxon's valuation of its reserves and its climate risk disclosures.

Under current regulations, the SEC has issued guidelines suggesting that public companies consider the effects of climate change on their assets, but the SEC has not mandated any specific climate risk disclosures. The Act would potentially remedy this perceived omission by requiring public companies to disclose information about their exposure to climate-related risks.

The press release introducing the Act notes that climate change may impact companies in two ways. First, the direct results of climate change, including rising sea levels and extreme weather patterns, can threaten the value of company assets. According to Freddie Mac, climate change appears "likely to destroy billions of dollars in property and to displace millions of people," producing "economic losses and social disruption…likely to be greater in total than those experienced in the housing crisis and Great Recession." Second, new regulations to address global climate change could affect the value of company assets as a result of an expected transition to a low-carbon economy. This could be problematic due to a concept known as the "carbon bubble." The "carbon bubble" anticipates that current investments in fossil fuels will lose their value as the world transitions to a low-carbon economy. According to the press release, the "carbon bubble" has been estimated at approximately $1-$4 trillion in value and the "market lacks information about companies' exposure to these risks and it appears to dramatically undervalue the potential impact of climate change."

According to co-sponsor U.S. Senator Jeff Merkley, the Act is necessary because:

> . . .[w]hile the impacts on the ground are visible, it's much murkier for investors, making it harder to understand clearly the full risks associated with their investments from climate chaos and fossil fuels.

Co-sponsor U.S. Senator Brian Schatz added:

> . . .[p]ublicly traded companies have an obligation to their shareholders to disclose all material risk, and climate change is no longer a theoretical problem to be contended with some time in the future. It is here, and it is costing companies money. That cost must be analyzed, predicted, and disclosed.

Proposed Climate Risk Disclosures

The Act seeks to mandate climate risk disclosures by directing the SEC to issue rules requiring every public company to disclose:

- Its direct and indirect greenhouse gas emissions
- The total amount of fossil-fuel related assets that it owns or manages

•How its valuation would be affected if climate change continues at its current pace or if policymakers successfully restrict greenhouse gas emissions to meet the Paris accord goal; and

•Its risk management strategies related to the physical risks and transition risks posed by climate change.

The SEC would also be directed to tailor these disclosure requirements to different industries and to impose additional disclosure requirements on companies engaged in the commercial development of fossil fuels.

Conclusion and Implications

Many debate the existence of and the effects from climate change. Thus, even if S 3481 is passed by Congress and signed into law, it will remain to be seen how the Act is interpreted and what is ultimately disclosed.
(Kathryn Casey)

NEW CALIFORNIA LAW REQUIRES PUBLIC RETIREMENT SYSTEMS TO CONSIDER CLIMATE-RELATED FINANCIAL RISK

On September 23, 2018, California Governor Brown signed into law Senate Bill (SB) 964, which requires retirement boards of public pensions and retirement systems to evaluate "climate-related financial risk" and publicly report on their analysis of the climate-related financial risk of their public market portfolios.

Background

SB 964 requires the Boards of the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS) to analyze "climate-related financial risk," to the extent those boards identify it as a material risk to their fund. Authored by Senator Ben Allen (D-Santa Monica), SB 964 states:

> Climate change presents an array of material financial risks, including transition risk, physical risk, and litigation risk, that reasonable investors must take into account when making investment decisions. Failure to acknowledge and address these risks will result in exposure to subsequent liabilities and financial risk.

According to the Office of Senate Floor Analyses for the Senate Rules Committee, Senator Allen noted that global climate change poses certain types of risk to the value of public pension fund assets that should be considered by fund fiduciaries, including the following:

•Physical impact risks to the environment and infrastructure— *e.g.*, sea level rise, severe storms, extreme weather events such as droughts, wildfires, and heat waves that may impact assets and global economic trends:

•Carbon asset risk—As regulations tighten, fossil fuel companies may not be able to fully develop and use the carbon reserves they hold, resulting in billions of dollars in "stranded assets."

•Transition risk—The cost of transitioning to a low-carbon economy will negatively affect certain companies and investments while advantaging others.

•Litigation risk—Under changing laws and increasing climate change risks, a company may be sued as a result of its contribution to climate change, and consequently lose market value.

According to Senator Allen, although certain governance directives, specifically CalPERS Investment Belief 9 and CalSTRS: "Environmental" Risk Factor, advise the funds' boards to take climate risk into account in making investment decisions, there previously existed "no statutory recognition of this risk and neither system report[ed] this risk publically."

Overview of Senate Bil 964

SB 964 defines "climate-related financial risk" as:

> . . .material financial risk posed to the fund by the effects of the changing climate, such as intense storms, rising sea levels, higher global temperatures, economic damages from carbon emissions, and other financial and transition risks due to public policies to address climate change, shifting consumer attitudes, changing economics of traditional carbon-intense industries.

Beginning in 2020 and every three years thereafter, the boards of CalPERS and CalSTRS must publicly report on their analysis of climate-related financial risk of their market portfolios, "including the alignment of the fund with the Paris climate agreement and California climate policy goals and the exposure of the fund to long-term risks." The public reports must include "the methods and results of the board's engagement related to climate-related financial risk with publicly traded companies that are most carbon intense, such as utilities, oil, and gas producers, within the fund," including a "summary of climate-related financial risk-related engagement activities undertaken," and a "description of additional action taken, or planned to be taken, by the board to address climate-related financial risk." SB 964 provides a sunset date for these new requirements of July 31, 2035.

Conclusion and Implications

The new requirements imposed by SB 964 will likely foster broader dialogue as to the impacts of climate change on financial investment decisions and risk. The full text of SB 964 is available at the following location: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB964 (Nicole Martin)

CALIFORNIA GOVERNOR BROWN SIGNS INTO LAW SB 700 WHICH EXTENDS ENERGY STORAGE PROGRAM SUBSIDY THROUGH 2025

On September 28, 2018, Governor Jerry Brown signed Senate Bill 700 to extend the existing Self Generation Incentive Program (SGIP) by five years, through the end of 2025. This extension will result in an additional $830 million in subsidies for qualifying storage and other clean energy technologies. The bill is widely seen as a necessary measure, particularly with the recent passage of SB 100, because increased storage capacity is crucial to accommodating California's increasing renewable energy resource load.

SGIP Background

SGIP was first implemented during California's energy crisis in 2001 as a means to reduce peak loads and to encourage distributed generation. Over time, the SGIP eligibility rules have been modified by the CPUC and the legislature to address growing concerns with air quality and the need to reduce greenhouse gas emissions.

The stated purpose of the SGIP is to:

> . . .increase deployment of distributed generation and energy storage systems to facilitate the integration of those resources into the electrical grid, improve efficiency and reliability of the distribution and transmission system, and reduce emissions of greenhouse gases, peak demand, and ratepayer costs. (Pub. Util. Code § 379.6(a)(1).)

Since its inception, the program has incentivized the development and deployment of a variety of technologies, including solar photovoltaic (before the California Solar Initiative launched), combined heat and power, fuel cells, and wind turbine systems. Since 2009, however, the bulk of the program has been used to fund energy storage systems. In fact, as of this year, SGIP has funded over $140 million in incentives for 85 MW of installed storage projects.

The SGIP works by authorizing California's investor-owned utilities to collect up to $166 million per year from ratepayers to fund eligible program investments. The California Public Utilities Commission (CPUC) provides program oversight and guidance regarding interpretation and implementation, and works in concert with Program Administrators for each utility. Pre-approved developers and system owners must submit an application with the Program

Administrator of the service territory in which the system is located. While the SGIP used to work on a first-come, first-served basis, several program changes were implemented in 2016 by CPUC Decision 16-06-055, and the program administration is now run on a continuous basis through a lottery system.

Senate Bill 700

SB 700 was authored by San Francisco Senator Scott Wiener and it received significant lobbying support from the California Solar and Storage Association (CALSSA). The bill was passed with broad support in late August, with a 25-12 vote in the Senate and a 57-18 vote in the Assembly.

Commenting upon the bill's execution, CALSSA executive director Bernadette Del Chiaro stated that "By signing this bill, the governor is making the sun shine at night!" SB 700 is largely seen as a necessary counterpart to achieving recently enacted SB 100 because it will add the necessary storage technologies to balance out California's increasing reliance on intermittent renewable energy. Senator Weiner noted after the bill's passage that:

> We are one step closer to meeting our aggressive renewable energy goals. By expanding our use of energy storage we will be able to use solar power every hour of the day, not just when the sun is shining.

Program eligibility is limited to "distributed energy resources that…will achieve reductions in emissions of greenhouse gases pursuant to [AB 32]".

Under SB 700, the program is expected to fund an additional $830 million or 3GW of storage capacity and incentive projects. The extension of the SGIP program will result in a total investment of $1.2 billion for customer sited energy storage.

Conclusion and Implications

SB 700 will prove crucial to ensuring that sufficient storage capacity is developed, particularly as California is moving towards a 100 percent clean energy future under SB 100. As more and more of California's electric load is supplied by intermittent renewable energy, ample storage capacity is needed to capture the supply and step in during the evening hours or when wind capacity is low. The hope is that this program will act in the same way that early solar subsidies did in expediting market deployment and bringing down prices. For the text of SB 700, *see*, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB700
(Lilly McKenna)

REGULATORY DEVELOPMENTS

IPCC ISSUES SPECIAL REPORT CAUTIONING AGAINST THE IMPACT OF GLOBAL WARMING ABOVE 1.5 DEGREES CELSIUS

The Intergovernmental Panel on Climate Change (IPCC), a panel of scientists convened by the United Nations, issued a special report on the impact of global warming of 1.5 degrees Celsius above pre-industrial levels (considered as 1850-1900 by the IPCC). The report, published on October 8, 2018 at the conclusion of a panel meeting in South Korea, highlights in dire terms the importance of limiting global warming to 1.5C as compared to 2C. One panel member summarized:

> Every extra bit of warming matters, especially since warming of 1.5C or higher increases the risk associated with long-lasting or irreversible changes, such as the loss of some ecosystems.

The report concludes that while the 1.5C warming limit can be achieved from a scientific standpoint, doing so will require "rapid and far-reaching" changes that would require unprecedented political and economic cooperation. Global carbon dioxide (CO2) emissions, which are currently rising, would need to fall by 45 percent from 2010 levels by 2030, and would need to reach 'net zero' by 2050.

Background

The IPCC, comprised of a body of scientists and economists, was first convened by the United Nations in 1988. It periodically publishes for policymakers summaries of "the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation." As part of the 2015 Paris Agreement on climate change, in which 195 nations committed to halting global warming to "well below 2C above pre-industrial levels and to pursue efforts to limit temperature increase to 1.5C above pre-industrial levels," the IPCC was asked to develop this special 2018 report on the impacts of global warming above 1.5 degrees Celsius.

The 2018 report was authored by a team of 91 scientists and policy experts from 44 different countries. The US had the greatest representation with seven authors, followed by Germany with five and the UK by five. The report is the first in a series; next year the panel will publish a report on climate change impacts on the ocean and on land use.

The Implications of 1.5C

At present, global average temperatures have already warmed by approximately 1C since pre-industrial times. However, since the rate of warming is not consistent across the Earth's surface, some regions representing approximately 20-40 percent of the global population are already experiencing warming of more than 1.5C. As indicated in the report, even at levels of 1.5C severe climate impacts are already playing out on land and ocean ecosystems; the report noted that:

> Temperature rise to date has already resulted in profound alterations to human and natural systems, bringing increases in some types of extreme weather, droughts, floods, sea level rise and biodiversity loss, and causing unprecedented risks to vulnerable persons and populations.

The areas most impacted will include small islands, coastal regions, areas in poverty, and large cities. These and other areas will face greater extremes in weather conditions with increased rainfall and worsened drought conditions, resulting in flooding and wildfires. The report also states that if warming is limited to 1.5C, coral reefs would decline by 70-90 percent, whereas if 2C is reached, virtually all coral reefs would be lost.

Recommended Courses of Action

To avoid nearing levels of 2C warming, the report identifies a variety of pathways that could limit temperatures to 1.5C, but the pathways envision drastic changes from the status quo, and which may not be politically or economically feasible. For example, one change recommends a fully decarbonized future by

2050, with an electricity mix comprised of 70-85 percent renewable energy. The pathways also envision a 33 percent reduction in methane emissions below 2010 levels by 2050. The transportation and industry sectors are expected to reduce emissions under set pathways to 75-90 percent below 2010 levels by year 2050.

The report also notes that to achieve 1.5C, negative emissions technologies (NETs) will have to be employed to remove CO2 from the atmosphere, and to compensate where emissions cannot easily be reduced to zero (e.g., air travel and food production, particularly meat and rice). Examples of NETs include carbon capture technologies and afforestation (planting trees in barren land).

Conclusion and Implications

If significant corrective actions are not pursued to drastically reduce existing CO2 levels, the IPCC report finds that a warming of 1.5C could be reached in as little as 11 years.

Given the current political climate and President Trump's statement of intent to withdraw from the Paris Climate Accord, the question remains whether other global, state, or industry players will take the lead in heeding the IPCC report. California's recently enacted SB 100 sets a path of reaching 100 percent renewable energy supply and a goal of carbon net neutrality by 2045. Its policies may provide a roadmap and help develop the technologies needed to reduce carbon emissions. In addition, some corporations have expressed a preference for carbon taxes or have worked to account for climate changes' cost to companies. The question remains whether such actions and interests can be implemented quickly enough to avoid the dire consequences listed in the IPCC report. See related scientific detailed coverage of this event on page **159** of this issue of the *Climate Change Law & Policy Reporter*.
(Lilly McKenna)

NEW PROPOSED RULE AND PENDING SUPREME COURT CASE HAVE POTENTIAL TO LIMIT DESIGNATION OF UNOCCUPIED AREAS AS CRITICAL HABITAT UNDER FEDERAL ENDANGERED SPECIES ACT

The U.S. Fish & Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) (together: the Services) have proposed revisions to one of the federal Endangered Species Act's (ESA) key implementing regulations regarding the designation of unoccupied critical habitat. If formally adopted, the proposed revisions would limit the Services' ability to designate areas unoccupied by a listed species as part of their critical habitat. But the new proposed rule, like the currently operative rule, may not require that unoccupied areas actually be habitable at the time they are designated as critical habitat. The issue of whether an area must be habitable at the time of designations is currently pending before the U.S. Supreme Court in *Weyerhauser Co. v. United States Fish & Wildlife Service*, which could potentially limit the Services' ability to designate critical habitat even further.

The Existing Regulation and the Services' Proposed Revisions

The Endangered Species Act permits the Services to designate geographic areas as critical habitat for an endangered or threatened species even if those areas are not actually occupied by the species at the time of the designation. 16 U.S.C. 1532(5)(A)(ii). Currently, the Services have broad discretion to designate areas unoccupied by a listed species as part of its critical habitat. Specifically, 50 C.F.R. § 424.12(b)(2) allows the Services to designate as critical habitat:

> . . .specific areas outside the geographical area occupied by the species that are essential for its conservation, considering the life history, status, and conservation needs of the species based on the best available scientific data.

In a proposed revision to that rule published on July 25, 2018, the Services recognized "continued perceptions that . . . the Services intend[] to designate as critical habitat expansive areas of unoccupied habitat." 83 Fed.Reg. 35197-98.

To address these perceptions, the Services' proposed rule emphasizes that unoccupied geographic areas may "only" be designated as critical habitat if such areas are essential to the conservation of the species,

and requires the Services to evaluate occupied areas for designation as critical habitat before considering unoccupied areas for designation. *Id.* at 35201. More importantly, the proposed rule limits the Services' discretion to determine that unoccupied areas are essential to a species' conservation to situations in which:

> . . .a critical habitat designation limited to geographical areas occupied would be inadequate to ensure the conservation of the species or would result in less efficient conservation for the species. *Id.*

In doing so, the Services must determine that "there is a reasonable likelihood that the area will contribute to the conservation of the species." *Id.* In determining that failure to designate an unoccupied area would result in less efficient conservation for a species, the Services must ensure that "societal conflicts" associated with the designation are minimized and perform a cost benefit analysis that compares the economic costs of the designation to the benefits gained from making it. *Id.* The Services have stated that the new proposed rule will result in greater predictability to the process of making critical habitat designations, and that it will permit them to be more thoughtful and focused in using agency resources to both designate critical habitat and consult on proposed actions that may affect such habitat.

Weyerhauser Co. v. U.S. Fish & Wildlife Service

A pending U.S. Supreme Court case may further limit the Services' ability to designate areas unoccupied by a listed species as critical habitat. *See, Weyerhauser Co. v. U.S. Fish & Wildlife Service* (*Weyerhauser*), 138 S.Ct. 924 (mem.) (Jan. 22, 2018) (granting petition for *certiorari*). In that case, FWS designated land as critical habitat for the endangered dusky gopher frog that included land owned by the petitioner in *Weyerhauser* in Louisiana—even though the species only occupied land in Mississippi, and even though the petitioner's land was not currently habitable for the species. *See, Markle Interests, LLC v. U.S. Fish & Wildlife Service*, 877 F.3d 452, 467 (5th Cir. 2016). In *Weyerhauser*, the petitioners have asked the Supreme Court to hold that habitat designated as critical must be an area in which the species in question can survive at the time of listing. *See,* Brief for Petitioner at 19. The outcome of the Supreme Court's decision on this issue could require that areas be habitable at the time of designation, a requirement that is not in the existing rule or the proposed changes.

Conclusion and Implications

Although it would constrain the Services' discretion to designate areas unoccupied by a listed species as part of its critical habitat, the proposed revisions to 50 C.F.R. § 424.12(b)(2) may not require that designated critical habitat actually be habitable at the time of listing, at least in some circumstances. The comment period on the proposed rule closed on September 24, and the Services are currently considering whether to adopt it as a final rule. Although many business and agricultural groups support the proposed rule, environmental interests have submitted thousands of comments asserting that it will place political and cost considerations above the best available science.

If the Services adopt the proposed rule, a Supreme Court decision in the *Weyerhauser* petitioners' favor could further limit the Services' discretion to require habitability at the time of designation. The regulated community thus faces the prospect of not one, but two significant developments when it comes to the Services' ability to designate areas unoccupied by a listed species as part of their critical habitat. Even if *Weyerhauser* does not impose a habitability requirement, however, the proposed rule would arguably still make it more difficult for the Services to designate unoccupied areas as critical habitat.
(Sam Bivins, Meredith Nikkel)

CALIFORNIA AMENDS VEHICLE EMISSIONS REGULATIONS IN RESPONSE TO TRUMP ADMINISTRATION'S PROPOSED ROLLBACK OF FEDERAL STANDARDS

On September 28, 2018, the California Air Resources Board (CARB) adopted amendments to California's Low-Emission Vehicle III (LEV III) regulations, which target reductions in criteria pollutant emissions and greenhouse gas emissions from light- and medium-duty vehicles. The amendments are in direct response to proposed actions at the federal level to weaken federal emissions standards and revoke the 2013 waiver of federal preemption under the federal Clean Air Act for California's program.

Background

The Clean Air Act (CAA) provides a framework for California to adopt and implement motor vehicle emissions standards that differ from federal standards and allows other states to elect to comply with California's standards in lieu of the federal standards. With certain exceptions, under § 209(b) of the CAA, the U.S. Environmental Protection Agency (EPA) must grant a waiver of federal preemption for California's standards if California determines that its standards are at least as protective of the public health and welfare as applicable federal standards. On January 9, 2013, the EPA granted a waiver for California's Advanced Clean Cars (ACC) program, which included the LEV III Regulations at issue here. Pursuant to Section 177 of the CAA, at least 12 other states have adopted California's LEV III regulations in whole or in part.

California's LEV III regulations include a "deemed to comply" option, which allows compliance with EPA's light duty vehicle greenhouse gas emissions standards as an alternative to complying with California's standards for the 2012 to 2025 vehicle model years. At the time it adopted the "deemed to comply" option in 2012, CARB determined that the federal standards then in place would deliver equivalent greenhouse gas emissions reductions as California's standards. On January 13, 2017, following a federally mandated midterm evaluation to assess the federal greenhouse gas standards for the 2022 through 2025 model years, the EPA issued a Final Determination to maintain the previously established greenhouse gas emissions standards for the 2022 through 2025 model years. CARB responded by:

> . . .continu[ing] California's participation in the 2017 through 2025 model year National Program by maintaining the 'deemed to comply' provision allowing for compliance with the adopted U.S. EPA greenhouse gas standards for the 2022 through 2025 model years. (CARB Resolution 17-3.)

Federal Rollback of Emissions Standards

The playing field changed on April 13, 2018, when the EPA announced that it was withdrawing its previous Final Determination, concluding that "the current standards are based on outdated information, and that more recent information suggests that the current standards may be too stringent," signaling likely changes to the federal standards. (83 Fed. Reg. 16, 077, April 13, 2018.) Those proposed changes were announced by the EPA and National Highway Traffic Safety Administration (NHTSA) on August 24, 2018, with The Safer Affordable Fuel Efficient (SAFE) Vehicle Proposed Rule for Model Years 2021-2026 Passenger Cars and Trucks. (83 Fed. Reg. 42, 986 (August 24, 2018.) Notably, the SAFE Vehicle Rule also proposes to withdraw the 2013 waiver of preemption for California's ACC regulations, "address[ing] a fundamental and unnecessary complication in the currently-existing regulatory framework," which, according to the NHTSA and EPA:

> . . .is the regulation of GHG emissions from passenger cars and light trucks by the State of California through its GHG standards and Zero Emission Vehicle (ZEV) mandate and subsequent adoption of these standards by other States.

Rather, through the SAFE Vehicle Rule, "the agencies propose to maintain one national standard—a standard that is set exclusively by the Federal Government." The comment period on the proposed

SAFE Vehicle Rule currently closes on October 26, 2018.

California Responds by Limiting the 'Deemed to Comply Option'

In response to the actions at the federal level, CARB adopted the amendments to its LEV III regulations at issue to clarify that the "deemed to comply" option is available only if the currently adopted federal greenhouse gas regulations remain in effect. In other words, should the SAFE Vehicle Rule be adopted at the federal level, the deemed to comply option would not be available in those states and commonwealths where California's standards apply. According to CARB, the proposed amendments fall within the scope of existing waivers of federal preemption previously granted by the U.S. EPA under the CAA and are not otherwise preempted. With respect to the threatened withdrawal of the 2013 waiver of preemption, CARB's staff report responded accordingly:

Proposals to weaken the U.S. EPA program or to preempt California's program or to withdraw waivers are entirely legally unfounded, unsupported by the evidence, and contrary to the core structure of the federal Clean Air Act and decades of precedent. They threaten public health and undermine California's sovereign responsibilities to protect the public. CARB has provided its views to U.S. EPA and NHTSA on this point, and will respond in court to the finalization of any such proposals as appropriate.

Conclusion and Implications

Should the EPA and NHTSA adopt the SAFE Vehicle Rule and proceed with the proposed withdrawal of the 2013 waiver, their actions will likely face legal challenge by California and others and complicate compliance decisions for automakers across the country. Additional information about CARB's amendments to the LEV III regulations is available at: https://www.arb.ca.gov/regact/2018/leviii2018/leviii2018.htm
(Nicole Martin)

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 October 1, 2018, the U.S. Environmental Protection Agency (EPA) announced a settlement with Cloverdale Foods Company to resolve alleged federal Clean Air Act (CAA) violations at the company's meat processing facility in Mandan, North Dakota. As part of the settlement, Cloverdale will pay a $72,530 penalty and will improve the maintenance of Cloverdale's process equipment to reduce the possibility of an accidental release of hazardous chemicals at the Mandan facility. Cloverdale has now corrected all deficiencies EPA identified in the facility's CAA risk management program and will complete two supplemental environmental projects to enhance community safety at a cost of approximately $114,387. This case is part of EPA's National Compliance Initiative to reduce risks from chemical accidents and addresses compliance within the ammonia refrigeration sector. The settlement resulted from a 2016 inspection of Cloverdale's facility by EPA that revealed violations of the CAA risk management program regulations for the management of anhydrous ammonia, including deficiencies associated with safety and emergency contact information, hazard analysis, mechanical integrity, operating procedures, and compliance audits. Cloverdale's supplemental environmental projects include conducting specialized hazardous material response training for emergency response professionals in Morten County, North Dakota, with a focus on addressing ammonia releases, and providing new equipment to the Mandan Fire Department to enhance emergency and spill response capabilities. This equipment includes self-contained breathing units and masks, specialized coats, pants, and gloves, and gas-detection monitors

•October 24, 2018 - The U.S. Environmental Protection Agency (EPA), the U.S. Department of Justice, and the Mississippi Department of Environmental Quality (MDEQ) announced a national settlement with Chevron U.S.A. Inc. (Chevron) that requires safety improvements at all its domestic refineries. This resolves claims that the company violated provisions of the Clean Air Act aimed at preventing accidental releases of hazardous chemicals that can have serious consequences for public health and the environment. As part of the proposed settlement, Chevron will spend approximately $150 million to replace vulnerable pipes, institute operating parameters and alarms for safer operation, improve corrosion inspections and training, centralize safety authority within the corporation, conduct a pilot study of safety controls for fired heaters, and make other safety improvements at all its domestic refineries. Chevron also will pay a $2.95 million civil penalty and will implement supplemental environmental projects worth at least $10 million in the communities surrounding the refineries in California, Mississippi, Utah, and Hawaii. The overall value of this settlement exceeds $160 million, which makes it the largest settlement in the history of the EPA's enforcement of the Risk Management Plan Rule under Clean Air Act § 112r. EPA's initial investigation was spurred by an August 6, 2012 fire involving high-temperature hydrocarbons released in the Crude Unit at Chevron's Richmond, California refinery. That fire prompted a shelter-in-place order by Contra Costa County officials, endangered 19 employees, and caused 15,000 local residents to seek medical attention. During EPA's investigation, Chevron experienced accidental releases of regulated chemicals at two of its other refineries, including a 2013 explosion and fire in Pascagoula, Mississippi that caused the death of employee Tonya Graddy, and a 2013 rupture in El Segundo, California that caused a loss of power and flaring at the refinery. The United States' and Mississippi's Complaint, filed concurrently with the proposed settlement today in the United States District Court for the Northern

District of California, alleges violations of § 112(r) of the Clean Air Act. Section 112(r) requires covered facilities to implement a systematic Risk Management Program to prevent accidental releases of dangerous substances, and to meet a general duty of care in designing and maintaining safe facilities. The Mississippi Department of Environmental Quality participated as co-plaintiff, exercising its concurrent authority to enforce the Risk Management Program regulations over Chevron's Pascagoula refinery. This is the first case in which the United States and a state have jointly brought suit to enforce these provisions. The proposed settlement also resolves claims under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA) regarding delayed reporting of an August 2, 2012, hydrogen sulfide release from Chevron's Richmond facility. The Supplemental Environmental Projects that Chevron has agreed to perform, valued at $10 million, will supply emergency response equipment to local jurisdictions surrounding the five subject refineries. Chevron U.S.A. Inc. is the subsidiary of Chevron Corporation that owns and operates the corporation's U.S. petroleum refineries. Chevron Corporation is the second-largest integrated energy company in the United States, and Chevron U.S.A. Inc. is the sixth-largest U.S. refiner as measured by crude oil distillation capacity. The proposed settlement covers all four Chevron U.S.A. Inc. refineries, which are located in Richmond and El Segundo, California; Pascagoula, Mississippi; and Salt Lake City, Utah; as well as a fifth refinery formerly owned and operated by Chevron, located in Kapolei, Hawaii. The Richmond component of the settlement builds on the relief achieved by previous state enforcement actions, including a 2013 criminal settlement with the California Attorney General's Office and the District Attorney for Contra Costa County, and a 2017 settlement with the California Department of Industrial Relations, Occupational Safety and Health Division. The proposed consent decree was lodged today in the U.S. District Court for the Northern District of California and is subject to a 30-day public comment period and final court approval.

•On September 24, 2018, EPA and the U.S. Department of Justice (DOJ) announced a settlement with Derive Systems to address the sale of approximately 363,000 aftermarket products designed to defeat the emissions control systems of cars and trucks in violation of the CAA. Over a span of multiple years, Derive Systems sold products, including custom engine tuning software and parts, online and at distributors across the U.S. under the brand names of "Bully Dog" and "SCT" for use in many types of gasoline and diesel-fueled cars and trucks. Under the terms of the settlement, Derive Systems will spend approximately $6.25 million to ensure future compliance, and pay a civil penalty of $300,000. Derive System's custom tuning software was designed to access and overwrite the original vehicle manufacturer's software put in place to reduce air pollution, monitor the vehicle's on-board diagnostics of emissions controls, and otherwise comply with the CAA. Derive System's software enabled the user to remove emission control components that reduce tailpipe emissions, including catalysts, diesel particulate filters, exhaust gas recirculation systems, elements of on-board diagnostic systems, and other elements of design certified by vehicle manufacturers to comply with the CAA. Derive Systems also sold parts and components for motor vehicles and motor vehicle engines that bypass, defeat, or render inoperative elements of design that were installed by the vehicle or engine manufacturer to comply with CAA emission standards. These handheld products, commonly known as "tuners," enabled the user to easily turn off emission controls installed and certified by vehicle manufacturers to comply with the CAA. Under the settlement, Derive Systems must stop introducing new noncompliant tuners into commerce and retrofit existing tuners so that they comply with the CAA. All new and existing tuners offered for sale must have a reasonable basis demonstrating that the use of the products will not adversely affect vehicle emissions. Besides tuners, Derive Systems must limit access to key emission control parameters in their custom tuning software, which includes training about vehicle functions, emission controls, and the CAA requirements. Derive Systems must stop any marketing that would provide information on how consumers can defeat emission controls in their vehicles, and work with their national distributors to prevent the packaged sale of their products with companion defeat devices. The company must also train its employees to comply with the CAA.

•On September 27, 2018, EPA and the U.S. DOJ announced a settlement with NGL Crude Logistics, LLC that requires the company to return 36 million renewable fuel credits or "RINs" and pay a $25 million civil penalty under the settlement to resolve violations of the Renewable Fuel Standard (RFS) program. The cost of the RIN retirement is approximately $10 million. NGL is a midstream energy provider headquartered in Tulsa, Oklahoma that transports crude oil, and markets and supplies refined products, natural gas liquids, and other products. EPA and the DOJ allege that NGL entered into a series of transactions with Western Dubuque Biodiesel, LLC in 2011 that resulted in the generation of an extra set of renewable fuel credits for approximately 24 million gallons of biodiesel. NGL purchased millions of gallons of biodiesel on the open market, with approximately 36 million RINs assigned to the biodiesel. NGL sold most of the RINs to other entities, and then sold the biodiesel to Western Dubuque, but designated it as a "feedstock." Western Dubuque reprocessed the biodiesel provided by NGL and generated a second set of RINs for the same fuel. Western Dubuque sold the reprocessed biodiesel and the second set of RINs back to NGL. NGL then sold most of these RINs to other entities. Consequently, NGL's scheme generated approximately 36 million additional RINs. On July 3, 2018, the U.S. District Court for the Northern District of Iowa found NGL liable for (1) failing to retire RINs when it designated and sold biodiesel to Western Dubuque as "feedstock" for the production of biodiesel, (2) causing Western Dubuque to generate invalid RINs and commit other prohibited acts under the RFS program, and (3) transferring approximately 36 million invalid RINs to other entities. Western Dubuque resoled its alleged violations of the RFS program in a 2016 settlement with the U.S. EPA discovered the violations through a tip from RFS program participants, an inspection, and extensive investigation into the NGL transactions.

•On October 3, 2018, David Tiell pled guilty in federal court to one count of conspiring to defraud the Internal Revenue Service (IRS) while serving as Director of Business Development at Keystone Biofuels Inc., located in Shiremanstown, Pennsylvania and later in Camp Hill, Pennsylvania. Keystone purported to be a producer and seller of biodiesel. Between 2009 and 2012, Tielle participated in a conspiracy to fraudulently claim tax refunds based on the Biodiesel Mixture Tax Credit, a federal excise tax credit for person or businesses who mix biodiesel with petroleum and use or sell the mixture as a fuel. As part of the conspiracy, Tielle caused inflated fuel amounts to be reported to the IRS in order to fraudulently claim tax refunds on fuel Keystone was not producing. To account for the inflated fuel amounts, Tielle created false books and records and engaged in a series of sham financial transactions intended to mirror the false books and records. Tielle also caused Keystone to fraudulently claim tax refunds on fuel that did not meet the quality standards needed to qualify for the Biodiesel Mixture Tax Credit and on fuel Keystone had not mixed with petroleum. The total loss resulting from Tielle's conduct is approximately $44,149,983.41. Tielle faces a statutory maximum sentence of five years in prison, as well as a period of supervised release, restitution, and monetary penalties.

•October 18, 2018 - The Department of Justice and U.S. Environmental Protection Agency entered into a settlement with Heritage Thermal Services Inc., a subsidiary of Heritage Environmental Services LLC, resolving allegations that the company violated the Clean Air Act at its hazardous waste incinerator located in East Liverpool, Ohio. Some of the alleged violations arose from an explosion at the incinerator on July 13, 2013, which ruptured incinerator ducting, releasing untreated flue gas, steam, and boiler ash beyond the incinerator's fence line. The U.S. alleges that Heritage violated the Clean Air Act on hundreds of days beginning in November 2010 and continuing thereafter, including violations emanating from the July 13, 2013 explosion. The violations include failures to comply with applicable emissions limits, operating parameter limits, and other Clean Air Act regulatory requirements. The settlement, which was lodged in federal court for the Northern District of Ohio, requires that Heritage undertake extensive measures designed to bring its operations into compliance with the Clean Air Act. For instance, Heritage will not accept certain wastes that cause the kind of excess emissions that contributed to the July 2013 incident. Heritage is also required to investigate and implement corrective measures to reduce future emissions and will study whether other changes in its

production process would also prevent Clean Air Act violations. Heritage is also required to pay a penalty of $288,000, and to spend at least $302,500 performing slead hazard abatement work at properties within 25 miles of East Liverpool, Ohio where the owners cannot afford to undertake lead abatement or replacement of lead water service lines. The Department of Justice and EPA will hold a public meeting at the East Liverpool City Council Chambers on November 7, 2018, from 6:30 pm to 8:30 pm EDT to provide the public with information about the settlement and to answer questions by the public. The proposed settlement is subject to a 30-day public comment period and final court approval.
(Allison Smith)

JUDICIAL DEVELOPMENTS

DEEPENING A CIRCUIT SPLIT, TENTH CIRCUIT HOLDS SIX-YEAR STATUTE OF LIMITATIONS FOR MANY FEDERAL ENVIRONMENTAL STATUTES IS SUBJECT TO EQUITABLE TOLLING

Chance v. Zinke, 898 F.3d 1025 (10th Cir. 2018).

Joining the Sixth, Fifth and Ninth circuits the Tenth Circuit Court of Appeals held that 28 U.S.C. § 2401(a)'s six-year statute of limitations for bringing non-tort claims against the government is not jurisdictional, and therefore may be equitably tolled. Section 2401(a) is applied to claims under many environmental statutes. Until the U.S. Supreme Court resolves this split among the Circuits, claims with similar or the same facts will face vastly different outcomes.

Background

When Oklahoma was granted statehood in 1906, Congress "disestablished" the Osage Nation's reservation in Osage County. The surface and subterranean mineral estates of Osage County were severed, with "most" of the surface being deeded to tribal members while ownership of the mineral estate was retained to be held in trust by the federal government for the benefit of the Osage Nation. The mineral estate is administered by the Osage Agency of the Bureau of Indian Affairs (BIA). In 1963, the Osage Agency granted a drilling lease for the estate underlying plaintiff Merrill Chance's lands to Eason Oil, which drilled two wells; that lease was assigned to Great Southwestern Exploration (GSE) in 1991 and the drilling of a further three wells was permitted.

In 2016 Chance sued BIA and GSE, alleging that BIA had failed to comply with the National Environmental Policy Act, 42 U.S.C. § 4321 *et seq*. (NEPA), in approving the 1991-assignment and additional wells, and that it "failed to notify his predecessors-in-interest that it approved the new [drilling] permits." Chance acknowledged that his claims were late, coming 25 years after the actions challenged, but argued he was entitled to equitable tolling. Chance also brought various non-federal claims against GSE for damage to his property.

The U.S. District Court held that the general six-year federal law statute of limitations for non-tort claims, 28 U.S.C. § 2401(a), governed Chance's claims against BIA, and that § 2401(a) is jurisdictional so that equitable tolling is not available. In the alternative, the trial court found equitable tolling did not apply.

The Tenth Circuit's Decision

The federal courts are courts of limited jurisdiction, so that plaintiffs seeking to litigate in federal rather than state court bear the burden of establishing subject matter jurisdiction:

> For the last decade, the Supreme Court has been on a mission to rein in profligate uses of 'jurisdiction,' a word with 'many, too many, meanings.' *Herr v. U.S. Forest Serv.*, 803 F.3d 809, 813 (6th Cir. 2015) (quoting *Arbaugh v. Y & H Corp.*, 546 U.S. 500, 510 (2006)).

The Circuit Court of Appeals campaign is rooted in legitimate concern. Treating a rule as jurisdictional is more than just semantics; it has real-world effects on the parties and can be detrimental to judicial economy. *See, Henderson* [*ex rel. Henderson v. Shinseki*, 562 U.S. 428,] 434 [(2011)]. A case can be dismissed for lack of subject-matter jurisdiction at any stage in the litigation—or even after litigation has ended—so "[t]ardy jurisdictional objections can ... result in a waste of adjudicatory resources and can disturbingly disarm litigants." [*Sebelius v. Auburn Reg'l Med. Ctr.*, 568 U.S. 145,] 153 [(2-13)] ("Indeed, a party may raise such an objection even if the party had previously acknowledged the trial court's jurisdiction. And if the trial court lacked jurisdiction, many months of work on the part of the attorneys and the court may be wasted." (internal citation omitted)). Addition-

ally "[b]randing a rule as going to a court's subject-matter jurisdiction alters the normal operation of our adversarial system" by requiring courts to sua sponte address that rule. *Henderson*, 562 U.S. at 434.

The Supreme Court has "made plain that most time bars are nonjurisdictional." *United States v. Kwai Fun Wong*, ___U.S.___, 135 S.Ct. 1625, 1632 (2015). To further its interest in discouraging the profligate denomination of statute of limitations as jurisdictional:

> . . .the Court has 'adopted a 'readily administrable bright line' for determining whether to classify a statutory limitation as jurisdictional. . . .we may treat a rule as jurisdictional only when 'Congress has 'clearly state[d]' that the rule is jurisdictional. *Auburn Reg'l*, 568 U.S. at 153. . . .Congress must do something special, beyond setting an exception-free deadline, to tag a statute of limitations as jurisdictional. *Kwai Fun Wong*, 135 S.Ct. at 1632.

The Circuit Courts of Appeals are currently split on whether § 2401(a) is jurisdictional. The Sixth (*Herr*, 803 F.3d at 812), Fifth (*Clymore v. United States*, 217 F.3d 370, 374 (5th Cir. 2000)), and Ninth (*Cedars-Sinai Med. Ctr. v. Shalala*, 125 F.3d 765, 770 (9th Cir. 1997)) Circuits hold that it is not. The D.C. Circuit (*Mendoza v. Perez*, 754 F.3d 1002, 1018 (D.C. Cir. 2014)), Eleventh (*Ctr. for Biological Diversity v. Hamilton*, 453 F.3d 1331, 1334 (11th Cir. 2006), Federal (*Hopland Band of Pomo Indians v. United States*, 855 F.2d 1573, 1576–77 (Fed. Cir. 1988)), and Eighth (*Konecny v. United States*, 388 F.2d 59, 61–62 (8th Cir. 1967)) Circuits hold that it is not.

This split arises from the Supreme Court's decisions categorizing two other federal statutes of limitations as, respectively, jurisdictional and non-jurisdictional. In *John R. Sand & Gravel Co. v. United States*, 552 U.S. 130, 132 (2008), the Court held 28 U.S.C. § 2501, establishing the limitations period for bringing contract claims against the federal government in the Court of Claims, is jurisdictional. But in 2015's *Kwai Fun Wong* the Court declined to extend jurisdictional status to 28 U.S.C. 2401(b)—providing the statute of limitations for tort claims against the federal government. None of these statutory provisions—neither § 2501, § 2401(a), nor § 2401(b)—include language expressly making them jurisdictional. And they share a complicated statutory history as well as similar language. What distinguishes *John R. Sand* from *Kwai Fun Wong*, in the view of the Tenth Circuit, was that in *John R. Sand* the Supreme Court decided it was bound by its own decisions holding the statute of limitations for contract claims against the federal government to be jurisdictional, decisions that pre-dated any statutory scheme establishing a time-bar. As the Supreme Court stated, "[w]hat is special about [§ 2501]'s deadline, *John R. Sand* recognized, comes merely from this Court's prior rulings." *Kwai Fun Wong*, 135 S.Ct. at 1636. In contrast, § 2401 implicates no *stare decisis* concerns.

On that basis, the Tenth Circuit joined the Sixth, Fifth and Ninth circuits in holding § 2401(a) is non-jurisdictional. Chance's claims against BIA, however, were not entitled to equitable tolling, and were properly dismissed, as were his claims against GSE, for which there was no longer any basis for dependent federal jurisdiction.

Conclusion and Implications

Section 2401(a)'s six-year limitations period applies to claims under many federal environmental laws, and equitable tolling is a recurring issue in lawsuits under those laws. The property-based nature of many environmental claims may lessen the extent to which parties can seek a favorable Circuit to litigate such issues, by requiring that certain claims be brought in certain District Court based on where the alleged environmental harms occurred. Nonetheless, when claims are brought outside the six-year limitations period all parties should factor into their analysis this Circuit split.
(Deborah Quick)

NINTH CIRCUIT FINDS EPA PROPERLY APPROVED MONTANA'S 2015 STATE IMPLEMENTATION PLAN

Montana Environmental Information Center v. Thomas, 902 F.3d 971 (9th Cir. 2018).

The Ninth Circuit denied the Montana Environmental Information Center's (MEIC) petition for review of the U.S. Environmental Protection Agency's (EPA or agency) approval of a 1994 revision to Montana's Clean Air Act, State Implementation Plan (SIP). The court held EPA's approval was not arbitrary or capricious as EPA's interpretation of ambiguous language in Montana's revised SIP was reasonable and permissible. Because the agency's interpretation is controlling, and the revised SIP otherwise conformed to the Clean Air Act (CAA), EPA's actions were affirmed.

Background

The Clean Air Act requires that states submit detailed documents, in the form of State Implementation Plans, that demonstrate how the state will attain air quality standards, as set by the EPA. Once received by the EPA, the agency reviews the SIP to determine whether it complies with all applicable requirements, and then either approves the SIP or sends it back to the state for revision. In addition, when the EPA updates air quality standards, states are required to revise their SIPs to comply with the new standards, within three years.

SIPs also must comply with the CAA's prevention of significant deterioration program, which requires developers to acquire permits before constructing new emissions sources or modifying existing sources that will result in a "significant emissions increase." The CAA's method for calculating whether there will be a "significant emissions increase" is by comparing the "actual emissions" of a source to the projected emissions, post-modification.

The question of how to determine a source's "actual emissions" is the central issue presented in MEIC's petition. In 1980, EPA stated that actual emissions are calculated based on emissions:

> . . .during a two-year period which precedes the particular date and which is representative of normal source operation. (40 C.F.R. § 51.24(b)(21) (1980).)

In 2002, the agency clarified that the "two-year period" would equal the average rate of a pollutant actually emitted during any consecutive 24-month period selected by the owner or operator within: the five-year period immediately preceding the actual construction of the project, for steam power plants; and the ten-year period immediately preceding the actual construction of the project, for non-steam sources. (40 C.F.R. § 51.166(b)(47).) However, EPA also allows for use of a different time period that may be more representative of normal source operations.

In 1994, Montana submitted a revised SIP, which defined "actual emissions" similarly to the EPA's 1980 definition, as:

> . . .the average rate. . .at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation.

Following an EPA air quality standards update between 2008 and 2012, Montana submitted a revised SIP in 2015, which included the same 1994 definition of "actual emissions." In response, MEIC commented that Montana's definition of "actual emissions" was less stringent than EPA's updated definition from 2002, and the SIP could not be approved as such.

As the Ninth Circuit panel pointed out:

> . . .the entirety of Information Center's appeal rests on the [Department of Environmental Quality's (DEQ)] statements in the *Talen* litigation.

MEIC based its comment on an unrelated 2015 case it litigated against the Montana Department of Environmental Quality (DEQ) (*Sierra Club and Montana Environmental Information Center v. Talen Montana, LLC*). There, DEQ stated that EPA's definition of "actual emissions" should not be afforded any deference, as:

> . . .the interpretation that [it is] '*the*' two-year

> period immediately preceding [a modification] is inconsistent with the rule language which says '*a*' two-year period.

MEIC argued that by asserting that any two-year period could be used as a baseline, the DEQ was using a formula that was less stringent that EPA's baseline of the two years prior to construction. However, after reviewing MEIC's and others' comments on the SIP, EPA approved it, noting the SIP "[m]et the relevant structural requirements."

EPA further stated it would take into consideration MEIC's comments in the implementation phase of the program, as opposed to the approval stage.

MEIC petitioned the court to review the agency's approval.

The Ninth Circuit's Decision

The Ninth Circuit reviewed EPA's decision to determine whether it was arbitrary, capricious, an abuse of discretion, or contrary to law. In making this determination, the court looked to whether the agency articulated a rational connection between the facts found and the choice made. The court prefaced its analysis by referring to *Chevron*, and the general deference given to a rulemaking authority to interpret its own rules.

The court disagreed with MEIC's position that DEQ's interpretation of "actual emissions" as stated in the *Talen* case, carried the force of law, and because that interpretation was contained in the 1994 SIP, the 2015 SIP revision was deficient and should not have been approved. The court explained that "once the agency approves either an Implementation Plan or a Revised Implementation Plan, that plan becomes federal law" and, therefore:

> . . .DEQ's interpretation of 'actual emissions' [during the *Talen* litigation] could not invalidate Montana's Revised Implementation Plan.

Further, the court stated that the SIP's language was ambiguous, as MEIC and DEQ reasonably interpreted "a two-year period" differently. However, as stated above, when the plain language of a SIP cannot be readily discerned from the text, the agency's reasonable interpretation receives deference. Here, the agency's interpretation of "a 2-year period" to mean "the 2-year period" was permissible and that interpretation controlled despite DEQ's reasonable interpretation that "a 2-year period" meant "any 2-year period." Further, the revised SIP generally conformed to CAA standards. The court also agreed with EPA that MEIC's comment about the revised SIP related to the implementation of the program as opposed to the approval of the SIP. Therefore, the Ninth Circuit concluded EPA acted reasonably and did not act arbitrarily in approving the revised SIP. Accordingly, the court denied MEIC's petition for review.

Conclusion and Implications

MEIC based its case entirely on statements made during separate, unrelated litigation. Without additional, more conclusive statements or facts, courts tend to defer to agency interpretations and decisions regarding their own rules, regulations and policies. This case also illustrates the importance of timing and honing in on the true basis of a claim or issue. As EPA pointed out in its response to MEIC's comment, MEIC took issue with language related to implementation of Montana's revised SIP, not with its approval. Had MEIC waited to file a claim based on a source's chosen baseline, and not challenged the overall approval of the SIP, the outcome may have been different. In the meantime, the court reaffirmed its reliance on agency interpretation and decisions when reviewing agency action.

(Danielle E. Leben, David D. Boyer)

CALIFORNIA COURT OF APPEAL INVALIDATES COUNTY'S CEQA GUIDANCE FOR GREENHOUSE GAS IMPACTS

Golden Door Properties, Inc. v. County of San Diego,
___Cal.App.5th___, Case No. D072406, (Cal.App. Sept. 28, 2018).

Affirming a trial court judgment, the Fourth District Court of Appeal invalidated a document adopted by the County of San Diego that was intended as guidance for California Environmental Quality Act (CEQA) review of greenhouse gas (GHG) impacts. Finding the document established a generally applicable threshold of significance for GHG impacts, the court held that the county violated CEQA because the threshold was not formally adopted by ordinance, rule, resolution or regulation through a public review process, and because the threshold was not supported by substantial evidence. The court also held that the county's adoption of the threshold in advance of its required Climate Action Plan constituted improper "piecemealing" in violation of a previously issued writ of mandate, and rejected the county's claim that its adoption of the guidance was not ripe for judicial review.

Factual and Procedural Background

In 2011, the county updated its General Plan. The Environmental Impact Report (EIR) for the General Plan update incorporated mitigation measures to address GHG emissions. Mitigation Measure CC-1.2 required the county to prepare a Climate Action Plan (CAP), and to adopt GHG emission targets and deadlines for achieving the targets. Mitigation Measure CC-1.8 required the county to revise its guidelines for determining GHG significance based on the CAP.

The county subsequently developed and adopted a CAP in 2012, which was set aside when the court granted a petition for writ of mandate challenging its approval. While that case was on appeal, the county adopted a document called "2013 Guidelines for Determining Significance for Climate Change" (2013 Guidelines), which were challenged through a supplemental petition. The parties agreed to stay the second action while the appeal was pending in the first action. In 2014, the court of appeal upheld the trial court's decision to set aside the CAP. On remand, the trial court issued a supplemental writ directing the county to set aside both the CAP and the 2013 Guidelines, and retained jurisdiction to ensure compliance.

In 2016, while in the process of developing a new CAP, the county adopted a document called "2016 Climate Change Analysis Guidance Recommended Content and Format for Climate Change Analysis in Support of CEQA Document" (2016 Guidance Document). The 2016 Guidance Document included an efficiency metric of 4.9 metric tons of CO2e per service population per year for 2020, and described that metric as "the recognized and recommended method by which a project may make impact significance determinations."

The 2016 Guidance Document was challenged by petition for writ of mandate. Granting the petition, the court concluded that the claims were ripe for review, the 2016 Guidance Document created a threshold of significance under CEQA without following required procedures, violated Mitigation Measures CC-1.2 and CC-1.8, and was not based on substantial evidence. The trial court further concluded the 2016 Guidance Document constituted "piecemeal" environmental review in violation of the previous writ of mandate. The county appealed.

The Court of Appeal's Decision

Ripeness

The county first argued that challenge to its 2016 Guidance Document was not ripe because it was still developing a CAP and because the controversy did not involve a specific set of facts (that is, no project using the 2016 GHG Guidance Document to analyze GHG impacts had been challenged). The court disagreed, finding that 2016 Guidance Document established a threshold of significance that would "be used routinely to determine environmental effects" and thus generally applicable to project proposals. Although the document acknowledged that other methods for determining significance could potentially be used, it stated that the efficiency metric was "the

recognized and recommended method" for determining GHG significance. Since the efficiency metric was generally applicable, it was ripe for review regardless of whether it had been used for any specific projects.

Efficiency Metric Was a Threshold of Significance Adopted in Violation of CEQA

Addressing the first substantive claim, the court held that the county violated CEQA because the 2016 Guidance Document established a threshold of significance for GHG emissions without following the required procedures.

The county argued that the efficiency metric was not a threshold of significance because it was only recommended, not required, and so was not "normally ... used to determine the significance of a project's GHG emissions." Instead, the county argued that the 2016 Guidance Document merely recommended a methodology for evaluating GHG emissions, which is distinct from a threshold for determining the significance of the GHG emissions. The court disagreed, finding that because the 2016 GHG Guidance provided a "recognized and recommended" quantifiable efficiency metric to measure the significance of a project's GHG emissions, the efficiency metric was a threshold of significance.

Having determined that the efficiency metric was a threshold of significance, the court then found that the metric violated CEQA because the county failed to follow the adoption procedures for such thresholds laid out in CEQA Guidelines § 15064.7, which requires formal action after a public review period.

Threshold of Significance Was Not Supported by Substantial Evidence

The court next found that the threshold of significance provide by the efficiency metric was not supported by substantial evidence. Specifically, the court held that the county needed to support the efficiency metric with substantial evidence establishing a relationship between the statewide data used to establish the metric and the county-specific reduction targets. The 2016 GHG 2016 Guidance Document stated that the efficiency metric represented the county's "fair share" of statewide emissions mandates, but did not explain why that was so. Additionally, the efficiency metric was recommended for all projects, but the 2016 GHG Guidance Document did not explain why the efficiency metric (based on service population) would be appropriate across all project types.

The CAP and the 2016 GHG Guidance Document Constituted a Single Project

The court also agreed with the petitioners that the county had "piecemealed" its environmental review by adopting the 2016 GHG Guidance Document before it completed the CAP, I violation of both CEQA and the previously issued writ. The county argued that, because the CAP was on schedule to be released in compliance with the previous writ, the 2016 GHG Guidance Document did not violate the writ. The court applied the "law-of-the-case" doctrine and stated that under its previous decision, the CAP and the updated county guidance were a single project for CEQA purposes. For that reason, the CAP and updated guidance were required to be reviewed and adopted together as a single project.

Conclusion and Implications

This case reiterates several important CEQA principles regarding thresholds of significance, both generally and in the specific context of GHGs. First, when an agency adopts thresholds of significance for "general use" as part of the agency's environmental review process, they must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process, and must also be supported by substantial evidence. Agencies cannot avoid this process by styling a threshold of significance as merely a recommended methodology or guidance. Second, although use of statewide emission reduction goals may be a permissible threshold of significance for GHG emissions, the use of statewide standards for this purpose must be justified by substantial evidence to explain why it is sufficient for use in a particular area or for the particular type of project under review.

The opinion is available at: http://www.courts.ca.gov/opinions/documents/D072406.PDF
(Nathan George, Sara Dudley, Chris Stiles)

THE 'NECESSITY DEFENSE" TO AN ENVIRONMENTAL CRIMINAL ACT—MINNESOTA COURT OF APPEALS UPHOLDS LOWER COURT'S RULING ALLOWING USE OF THAT DEFENSE

State of Minnesota v. Klapstein, et al., Unpub.
Case Nos: A17-1649, 1650, 1651, 1652, (Minn.App. 2018).

In October 2016, four individuals entered into property located in the community of Leonard, in the State of Minnesota, owned by Enbridge Energy, (Enbridge) a Canadian company. They entered with the stated purpose of shutting off emergency valves for pipelines carrying tar sands oil from Alberta, Canada. The four individuals contacted Enbridge from the site, informed it of their plan and directed Enbridge to shut down the pipelines, telling Enbridge that if it did not, they would. Enbridge shut down the pipelines and the four individuals were arrested. They were charged with felonies and misdemeanors.

In *State v. Klapstein*, the defendants asserted that their actions were necessary to prevent harm to the environment. In October 2017, Minnesota District Court Judge Robert Tiffany ruled that they could use that defense—the necessity defense—at trial. On July 17, 2018, in a 2-1 ruling, the Minnesota Court of Appeals [the state's highest court] upheld the ruling in an *unpublished opinion*. The defendants, however, were not able to test out their necessity defense because, on October 9, 2018, shortly after the trial began, Judge Tiffany dismissed the charges against the defendants, ruling that the prosecutors had failed to meet their burden of proof that the defendants had damaged the pipelines when they trespassed onto the Enbridge property.

The Trial Court's Ruling

On May 11, 2017, in the District Court, the defendant's submitted three affidavits from various experts supporting their necessity defense. At the hearing on their motion, the defendants all testified in support of their necessity defense. On October 11, 2017, Judge Tiffany granted the defendants' Motion to Present Necessity Defense at Trial. In his decision, Judge Tiffany provided a summary of the necessity defense, noting that:

> . . .Minnesota's standard for the necessity defense is high; to successfully assert the defense, a criminal defendant must show that the harm that would have resulted from obeying the law would have significantly exceeded the harm actually caused by breaking the law, there was no legal alternative to breaking the law, the defendant was in danger of imminent physical harm, and there was a direct causal connection between breaking the law and preventing the harm.

While granting the motion, Judge Tiffany also ruled that the:

> . . .grant is not unlimited and the Court expects any evidence in support of the defense of necessity to be focused, direct, and presented in a non-cumulative manner.

The State of Minnesota appealed.

The Court of Appeals' Ruling

By a 2-1 ruling, the Minnesota Court of Appeals upheld Judge Tiffany's decision permitting the defendants to assert a necessity defense. The majority noted that the "state may appeal from a pretrial order in a criminal case provided that it can establish 'how the district court's alleged error, unless reversed, will have a critical impact on the outcome of the trial.'" The majority held that Judge Tiffany's ruling would "not have any immediate impact on the state's case in the absence of other yet-unmade rulings in trial." The majority ruled that Judge Tiffany's order:

> . . .only permits respondents to present evidence on necessity at trial; it makes no commitments as to the scope of the evidence that will be allowed, and it specifically authorizes the state to object again at trial on any lawful grounds.

In a footnote, the majority noted that:

> . . .[b]ecause the state has failed to make a satisfactory showing that the district court's pretrial order will have a critical impact on the trial's outcome, we do not reach the question of the applicability of the necessity defense in this matter.

The Dissenting Opinion

The dissent opined that Judge Tiffany's order would have a critical impact on the trial's outcome and also opined that the necessity defense does not apply. The dissent began by stating, "[t]his case is about whether respondents have committed the crimes of damage to property and trespass. It is not about global warming." The dissent opined that Judge Tiffany's decision would critically impact the outcome of the trial because allowing the defendants to submit testimony on global warming would, as the state had argued, "confuse the jury and conflate issues regarding culpability," thereby significantly reducing "the likelihood of a successful prosecution because the necessity defense is inapplicable to this case."

The dissent then opined that the evidence the defendants:

> . . .wish to provide for their necessity defense is inadmissible because it does not relate to the defense of necessity as this defense has been interpreted under Minnesota law

The dissent opined that the defendants "are unable to establish that there was no other legal alternative to breaking the law when they chose to trespass and sabotage the pipeline" and also could not "show that the harm was imminent." Specifically, the dissent noted that "[o]ur court does not recognize harm from a practice when that practice is specifically condoned by the law" and therefore "the respondents are unable to establish harm—let alone imminent harm."

The dissent further opined that:

> . . .because there is no direct, causal connection between respondents' criminal trespass and the prevention of global warming, the necessity defense does not apply.

The dissent concluded by opining that "the undisputed facts of this case negate all three essential elements of the necessity defense."

Conclusion and Implications

Many observers were surprised that Judge Tiffany permitted a necessity defense in this case. As a result of the dismissal of the charges, it remains to be seen whether a necessity defense will be successful in these types of climate change cases in Minnesota and whether similar arguments are made in other jurisdictions. For more information regarding the case's pleadings, see: http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2017/20171030_docket-A17-1649-A17-1650-A17-1651-A17-1652_memorandum.pdf
(Kathryn Casey)

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