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The Carbon Quarterly is a newsletter covering developments in carbon policy, law, and innovation worth paying attention to. No matter your views on climate change policy, there is no avoiding an increasing focus on carbon regulation, resiliency planning, and energy efficiency at nearly every level of government and business. Changes in carbon—and more broadly greenhouse gas—policies have the potential to broadly impact our lives and livelihoods. Carbon Quarterly offers a rundown of attention-worthy developments, including:

- Carbon Policy
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FORECASTING CLIMATE POLICY UNDER A TRUMP OR BIDEN ADMINISTRATION

In the midst of massive West Coast fires and unrelenting hurricanes on the gulf coast, climate change is playing a prominent role in the presidential election, now only a month away.

President Donald Trump and former Vice President Joe Biden have vastly different views on climate change and the type of policies and mandates that they believe are needed to address it—including those relating to carbon emissions. President Trump and his Environmental Protection Agency (EPA) Administrator Andrew Wheeler, who is responsible for carrying out the administration's environmental policies, do not see climate change as a significant threat and, therefore, generally view carbon regulation as unnecessary. In contrast, Vice President Biden views climate change as an imminent, existential threat to our way of life, warranting aggressive action to curtail carbon dioxide (CO₂) emissions both nationally and globally.

Given these diametrically opposite views, the outcome of the election will have significant consequences on the type, shape, and direction of climate policies that will impact all aspects of society well beyond the next president's time in office.

What should we expect? If our past is prologue, then the actions over the past four years of the Trump administration—and during eight years of the Obama/Biden administration before that—provide a useful roadmap of what the United States can expect during the next four years on climate policy.

President Trump's position on climate change has played out in many of his actions. Most notably, his administration has rolled back many of the signature climate policies that the Obama/Biden administration advanced, including the Clean Power Plan, fuel economy standards, regulations controlling methane emissions from oil and gas facilities, as well as lowering the social cost of carbon used in cost-benefit calculations.

If President Trump is re-elected, expect his administration to double-down on his agenda to rollback climate-related regulations and policies that his team believes exceed statutory authority or lack sufficient benefits. If Vice President Biden is elected, many of the rules and policies advanced by the Trump Administration are likely to be revisited and revised. Additionally, a top priority of Mr. Biden's first year as president will likely include substantial green clean technology investments in an infrastructure bill, akin to the Obama stimulus, but perhaps much larger and more aggressive to help recover from COVID-19.

Although not comprehensive, below is a brief rundown of five prominent climate-related policy areas and how they may play out under President Trump and Vice President Biden.

Paris Climate Accord

Symbolic of the major differences between President Trump and Vice President Biden is the Paris Climate Accord. The Paris Climate Accord is a nonbinding, global agreement in which each signatory country puts forth plans to lower greenhouse gas (GHG) emissions with the goal of limiting global temperature increases to 2 degrees Celsius. In one of his earliest actions, President Trump indicated his intention to withdraw from the Paris Climate Accord. In a speech declaring himself “elected to represent the citizens of Pittsburgh, not Paris,” President Trump announced that the United States would no longer be signatory to the agreement.¹ In contrast, in one of his first actions if elected, Vice President Biden has said that he will recommit the United States to the Paris Climate Accord and re-engage with the international community on climate change. His campaign's climate plan states “[h]e will fully integrate climate change into our foreign policy and national security strategies, as well as our approach to trade.”²

Planes, Trains, and Automobiles

One of President Trump's most significant regulations is the Safer Affordable Fuel Efficient (SAFE) Vehicles rule,³ which lowered the corporate average fuel economy and GHG standards for light duty vehicles from a 5 percent annual increase in efficiency under the Obama administration to 1.5 percent. The SAFE Vehicles rule also repealed California's authority to impose their own GHG standards for motor vehicles. During a second term, President Trump is expected to continue to implement this rule and look to set similar standards for future model years. This rule is being challenged and will likely be revisited and revised if Vice President Biden is elected to reflect a strengthened set of fuel economy standards with a focus on electric vehicles. Beyond vehicles, both candidates are looking to set GHG standards for airplanes. Vice President Biden's infrastructure plan also prioritizes zero-emissions public transportation⁴ and investments to “spark the second great railroad revolution.”

Fossil Fuels and Renewable Energy

Perhaps President Trump's most consequential carbon-related regulatory action was his administration's adoption of the Affordable Clean Energy (ACE) rule. The ACE rule rolled back President Obama's signature Clean Power

Plan, which (before its rescission) was set to establish an aggressive, nationwide, market-based carbon emission reduction program for the electric utility sector. Look for Vice President Biden to revisit the ACE rule, as well as President Trump's rollback of methane emissions requirements for oil and gas operations, and in their place advance policies promoting renewable energy and clean technology through regulations, financial incentives, and more federal funding. Either administration will also need to continue implementation of renewable fuels standards, but Vice President Biden could have a greater focus on advanced biofuels to reduce emissions in planes, ocean-going vessels, and other modes of transportation. Lastly, natural gas development will continue to get attention by either administration. President Trump has strongly supported hydraulic fracturing and has repeatedly warned that a Biden administration would ban all hydraulic fracturing. Vice President Biden has stated he would only seek to halt fracking on federal lands,⁵ but will likely look to tighten controls on methane emissions from natural gas operations.

Infrastructure Resiliency

Vice President Biden has committed to ensure that U.S. government facilities are more efficient and climate-ready. His clean energy platform states “Americans deserve infrastructure they can trust: infrastructure that is resilient to floods, fires, and other climate threats, not fragile in the face of these increasing risks.” Vice President Biden's plan would also incentivize the deployment of clean technology throughout the economy, including investments to accelerate supply chain resilience. The contents of an infrastructure package from the Trump Administration has been teased since the early days of 2017. It is unclear, however, what focus the Trump Administration would give to resilient infrastructure.

Environmental Justice and Public Right-to-Know

Vice President Biden has made clear he will make environmental justice a central focus of environmental policy, noting that “any sound energy and environmental policy must advance public health and economic opportunity for all Americans, in rural, urban, and suburban communities, and recognize that communities of color and low-income communities have faced disproportionate harm from climate change and environmental contaminants for decades.” His plan would establish an Environmental and Climate Justice Division within the Department of Justice, mandate monitoring in frontline and fenceline communities, and target resources consistent with environmental and climate justice. Vice President Biden would also support policies requiring companies to disclose climate risks and the GHG emissions in their operations and supply chains.

President Trump's second term, according to his EPA Administrator Andrew Wheeler, would break down silos between EPA's air, land, and water programs to take a more holistic approach to individual communities. Administrator Wheeler has noted that EPA's mission has been straight-forward since its founding: protect human health and the environment, regardless of ZIP code.

THE REGIONAL GREENHOUSE GAS INITIATIVE (RGGI): THE MID-ATLANTIC EXPANSION IS UNDERWAY . . . OR IS IT?

Over the course of the past two years, three Mid-Atlantic states—New Jersey, Virginia, and Pennsylvania—have either initiated or finalized efforts to join the Regional Greenhouse Gas Initiative (RGGI). For the uninitiated, RGGI is a regional, market-based CO₂ cap-and-trade program that is designed to reduce CO₂ emissions from the electric power sector. Within RGGI states, fossil fuel-fired power plants with a capacity of at least 25 megawatts (MWs) must procure CO₂ allowances, either through quarterly auctions or on the open market, in quantities

sufficient to offset their CO₂ emissions. The revenues generated by RGGI's quarterly auctions—more than \$3.5 billion to date—accrue to the participating states. In turn, those states use the RGGI auction proceeds primarily to support energy-related policy initiatives (e.g., energy efficiency, renewable energy, and consumer assistance).

The RGGI program has historically been implemented in nine northeastern states—Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. New Jersey, which was one of the original signatories to RGGI in 2005, but withdrew from the program in 2012, once again became a full RGGI participant as of January 2020. Virginia, after several years of fits-and-starts, is now set to become a full RGGI participant as of January 2021.

Meanwhile, in Pennsylvania, the policy debate currently rages (in multiple forums) over whether the Commonwealth should join RGGI, and on what terms. This section briefly discusses the current status and potential implications of efforts in Pennsylvania to join RGGI, a decision that will have real-world impacts not only within the Commonwealth, but throughout the PJM Interconnection.

All Eyes on Pennsylvania

On 3 October 2019, Pennsylvania Governor Tom Wolf issued an Executive Order (No. 2019-07) that marked the Commonwealth's first official overture toward joining RGGI. The Executive Order directed Pennsylvania's primary environmental regulator, the Department of Environmental Protection (PADEP), to develop rules that would enable the implementation of RGGI in Pennsylvania, should the Commonwealth decide to formally sign-on to the regional program.

Under Pennsylvania's unique environmental rulemaking process, PADEP must present all proposed rules to a separate regulatory body, the Environmental Quality Board (EQB), for approval before they can be officially released in proposed form for public comment. Accordingly, on 15 September 2020, PADEP presented its draft proposed RGGI rules to the EQB, which approved them by a 13–6 margin. Notably, the EQB's approval came despite the fact that three separate PADEP advisory committees—the Air Quality Technical Advisory Committee, Citizens Advisory Council, and Small Business Compliance Advisory Committee—all failed to pass motions supporting the proposal in the months leading up to the vote (an unusual if not unprecedented occurrence).

The proposed RGGI rules still have a long way to go before they would take effect. After the close of the public comment period, the rules will undergo several layers of review by the EQB, the Independent Regulatory Review Commission, the attorney general, and both of the General Assembly's Environmental Resources and Energy Committees. If the rules survive that gauntlet—a process that can take a year or more—only then would the EQB be able to promulgate them in final form.

Meanwhile, a majority of lawmakers in both chambers of the Pennsylvania General Assembly recently voted in favor of legislation (House Bill 2025) that would expressly require legislative authorization before the governor, PADEP, or the EQB could adopt rules or take other actions to join or participate in RGGI. Governor Wolf promptly vetoed that legislation, although the General Assembly still has an opportunity to override the governor's veto with a two-thirds majority vote in each chamber.

If the EQB does ultimately promulgate rules designed to implement RGGI, it is all but certain that opponents would challenge those rules in court. Even if House Bill 2025 does not become law, there are serious questions regarding whether the EQB possesses the requisite constitutional and statutory authority under existing law to adopt the rules as proposed, in part because they implicate the legislature's taxing and spending powers.⁶ Thus,

in the absence of legislative buy-in, the rules could become mired in litigation, and the courts could potentially strike them down.

The outcome of these legal and policy battles will have real world impacts. Pennsylvania's electric power sector generates far more electricity (and CO₂) from coal and natural gas than any of the current RGGI states,⁷ and unlike New Jersey and Virginia, Pennsylvania is a net energy exporter.⁸ While Pennsylvania's participation would fill a significant geographic gap for the RGGI program, it's notable that other similarly situated states within the PJM marketplace—namely, Ohio and West Virginia—have not made similar overtures toward joining RGGI. This presents a serious issue in terms of CO₂ emissions “leakage”—a significant portion (but not all) of the CO₂ emissions reductions that RGGI would drive in Pennsylvania (primarily from early coal plant retirements, but also from reduced usage of newer natural gas-fired plants) would likely be offset by emissions increases in these other PJM states as they make-up for Pennsylvania's lost generating capacity, as indicated by PADEP's own power sector modeling.⁹ This has led some Pennsylvanians to question whether the marginal regional/global emission reduction benefits of Pennsylvania's participation in RGGI would be worth the anticipated in-state economic impacts that would flow from expected energy price increases and lost jobs in the communities served by coal-fired power plants.

Conclusion

Given the stakes involved, RGGI continues to generate intense interest among a wide range of stakeholders in Pennsylvania and beyond, with opportunities for participation in multiple forums (regulatory, legislative, and judicial). All those who may be impacted by these developments (either positively or negatively) should actively engage now while key decisions are still to be made.

BP AND FOREST CARBON SEQUESTRATION

With the race for carbon reduction heating up, companies are now looking to offset their GHG emissions through a number of measures, the most common of which is to purchase renewable energy credits to offset electricity from non-renewable sources. But a newer space is gaining momentum, spearheaded by sequestering carbon within vast forests. As a result, trees that have historically been valued highest at the time of harvest are now being valued highest the longer they avoid harvest.

Forest carbon capture, gaining force after its spotlight endorsement in the Paris Climate Accord in 2016, involves companies paying landowners to continue to grow trees rather than harvest them and thereby sequester that company's GHGs. For example, a subsidiary of British Petroleum (BP), BP PLC recently launched an initiative, which would commit the company to carbon neutrality by 2050. The initiative includes purchasing over 40 million California carbon offset credits worth hundreds of millions of dollars, including \$100 million to preserve 165,077 acres of forest in Alaska under California's carbon sequestration rules. BP PLC can use these carbon credits to advance its future GHG benchmarks or trade them like financial assets on an open, voluntary market.

BP PLC also invested another \$5 million in Finite Carbon, which works with landowners to monetize carbon sequestration opportunities in their forests. A trailblazer in this area, Finite Carbon helps landowners determine qualifications for an offset procedure, including (1) measuring biomass using satellite systems and (2) developing data on land location, ownership, forest type, condition, and estimated performance.

Finite Carbon is one of those taking the lead in investing in the voluntary carbon credit market for forest carbon capture. The nature and extent of this voluntary market will depend on the anticipated expansion of compliance-

driven carbon offset markets working to meet the targets outlined in the Paris Climate Accord or the Carbon Offsetting and Reduction Scheme for International Aviation developed by the International Civil Aviation Organization. Thus, Finite Carbon and others in its sector are monetizing off the early days of forest carbon sequestration through voluntary markets while they still can, since the voluntary markets generally allow for more workable accounting and measurement guidelines for both credit customers and landowners.

As more nations and states implement mandatory cap-and-trade programs, voluntary offset values could increase drastically. This could invite new industry participants to invest in forest carbon capture, such as agribusiness. Indeed, there are already discussions in California about new industry players getting folded into the carbon capture conversation.

California's cap-and-trade system started in 2013 and is currently the most robust program in the country. Under the program, offset projects have historically only been allowed on private forestland. In February, however, the California Legislature proposed AB 2954, which aims for carbon neutrality for the state's "working lands" and "natural lands"—lands used for agriculture, grazing, forest products, and recreational purposes—and that these lands also serve to sequester a certain amount of emissions. The legislation was put forth as part of the state's effort to achieve 100 percent clean energy by 2045.¹⁰ This bill was controversial and ultimately suspended in mid-August due to more pressing legislation related to COVID-19 relief.¹¹ It is likely, however, that the bill will revive itself in the 2021 session. If it does, it could provide a significant boost to forest carbon sequestration initiatives.

CARBON SPOTLIGHT: DAVE HAZLEBECK, GLOBAL ALGAE INNOVATIONS

Dave Hazlebeck, CEO of Global Algae Innovations (Global Algae), has dedicated his career to learning how to use algae to reduce CO₂ in the atmosphere. At their eight-acre algae farm, Global Algae has the world's only large-scale open raceway algae facility that relies on either direct air capture or power plant flue gas as the CO₂ source.

From 2014 through 2018, Global Algae accelerated algae production in their raceway pond by "feeding" CO₂ from a power plant to the algae using their proprietary flue gas delivery system. Their system transports and supplies the CO₂ from the smoke stacks of the coal-fired power plant to the algae. The algae in its open raceway facility were fed exclusively with CO₂ from power plant flue gas.

In the last year, Global Algae has developed a technology that captures CO₂ directly from the atmosphere, with similar algae productivity to that using CO₂ from flue gas. This advancement is important because it is less costly and eliminates the requirement that the algae farm collocate with a CO₂ source.

For a video of Dave discussing the role algae could play in CO₂ mitigation; reforestation; and the water, food, energy nexus, see [here](#).

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FOOTNOTES

¹ <https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/>

² <https://joebiden.com/climate-plan/>

³ <https://www.federalregister.gov/documents/2020/04/30/2020-06967/the-safer-affordable-fuel-efficient-safe-vehicles-rule-for-model-years-2021-2026-passenger-cars-and>

⁴ <https://joebiden.com/clean-energy/>

⁵ <https://www.dallasnews.com/news/politics/2020/09/04/fact-check-would-biden-ban-fracking-as-trump-claims-no/>

⁶ See Craig Wilson, Anthony Holtzman and Tad Macfarlan, *Constitutional Implications of Pa. Executive Branch Efforts to Join RGGI*, The Legal Intelligencer (July 22, 2020).

⁷ See <https://www.eia.gov/electricity/state/unitedstates/>.

⁸ See <https://pjm.com/markets-and-operations/state-import-export-map.aspx>.

⁹ See *IPM Modeling Results Discussion, Reference Case and RGGI Policy Scenario* at 30-32 (Apr. 23, 2020), [available here](#).

¹⁰ Section 2, 38561.5(b)(1); Section 1(a)(9)(E).

¹¹ <https://californiaglobe.com/section-2/climate-goal-bill-for-california-lands-fails-to-reach-senate-vote/>

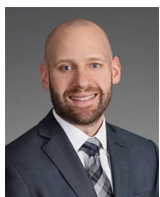
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