A New Administration, A New Congress, A New Energy Transition

By Jan Vrins,
Global Energy, Sustainability and Infrastructure Segment Leader,
Guidehouse

We have a new president in the White House who recognizes that climate change is an existential threat that needs to be addressed more aggressively. President Joe Biden signed an executive order on day one to rejoin the Paris Climate Agreement, which sends a strong message to the world that the U.S. is ready to once again lead on sustainability and climate change.

In his climate plan, President Biden has stated a goal to reach net zero greenhouse gas (GHG) emissions by 2050 and to invest 1.7 trillion dollars in clean energy and jobs. He is also targeting carbon-free electricity generation by 2035, which will accelerate decarbonization plans for many utilities.

While working toward these carbon reduction targets, we are experiencing the growing impacts of extreme weather events like fires, flooding, and heat waves. Power outages are becoming a common occurrence.

Clean energy technologies like renewable energy, along with energy efficiency, storage, grid modernization, renewable gas (green hydrogen), and better transmission can improve grid reliability and resiliency, and help to address the strains that many independent system operators and consumers are experiencing.

The energy sector will need to improve planning, procurement, and market operations, and develop creative financing and business models to achieve these important climate and energy goals.

Senate Majority Leader Chuck Schumer has pledged to prioritize green infrastructure in the next stimulus bill to address the economic downturn in the U.S. Improvements in transmission infrastructure are needed to move power from technologies like offshore wind from resource-rich locations to load centers where demand is greatest.

In addition, significant investments will be needed in EV infrastructure to support zero emissions vehicles. All of these are opportunities for job creation, economic development, and to support equity within the energy sector.

The Biden administration has made a series of appointments into key energy and environment posts including John Kerry as Climate Envoy, Jennifer Granholm as Secretary of Energy, and Gina McCarthy as the head of the new White House Office of Climate Policy, all signaling a return to the Obama-era environmental policy trajectories.

Although the Democrats have control of the House, Senate, and executive branch, potentially clearing the way for expanded funding and legislative mandates, these actions will still require bipartisan negotiation.

It will not be easy to unwind some of the policies that have weakened climate protections or to reintroduce climate protection policies from the Obama administration. Nevertheless, it is likely this agenda will be aggressively pursued.

Expected Policy and Executive Action Changes

To achieve the GHG targets and meet the Biden/Harris imperatives, here are some actions and executive orders that may unfold:

Internationally: The U.S. will rejoin the Paris Agreement and take a more leading role globally. The administration may use economic leverage to drive adoption and enforce climate targets and reductions. While specific ramifications of this remain uncertain, it could signal the enduring, international regulatory consensus about decarbonization.

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Power Generation: The U.S. is expected to see an even stronger push for a hundred percent clean energy generation, including possibly instituting a Clean Energy Standard (CES) that requires a certain percentage of retail electricity sales to come from zero- to low-emitting sources.

Currently, seventeen states have a hundred percent clean energy goals, and twenty-nine states have renewable portfolio standards. If a federal CES is rolled out, it would require additional utility companies outside of these states to move more aggressively toward developing renewable energy, energy efficiency, demand response, load shifting, storage, nuclear, and new rate design structures to help achieve the CES.

Transportation: The Clean Air Act will likely stay, along with new fuel economy standards and the move toward full vehicle electrification. California, Massachusetts, and New Jersey have announced that all new vehicles must be zero emissions by 2035, which will have large implications for infrastructure development.

For example, California anticipates needing around one and a half million new charging stations for light duty vehicles by 2030 to meet some of its targets, and New York has approved seven hundred million dollars for its EV charging infrastructure program. It is likely that federally funded transportation and transit projects will include enhanced requirements for resiliency and decarbonization as well.

Jan Vrins is the Global Energy, Sustainability and Infrastructure Segment Leader at Guidehouse.

Fig. 1 Examples of Clean Energy Commitments by Major Companies

Financial institutions will play a significant role going forward. They are increasingly requiring climate risk analysis across their portfolio of investments and loans, following guidelines from the Task Force on Climate-related Disclosures. Insurance companies are also becoming more critical insuring carbon-based assets, increasing premiums, or not providing insurance altogether.

Company	Clean Energy Commitment
Microsoft	Carbon neutral across the world since 2012
	Commit to being carbon negative by 2030
Amazon	Committed to powering operations with 100% renewable energy by 2025
	Goal to reach net zero carbon by 2040
Google	Deliver 24x7 carbon-free energy to all its data centers around the world
	Matched its power use with 100% renewable energy purchases for the past 3 years

Buildings: The administration is committed to driving energy efficiency into new and existing buildings. Rebates and financing for retrofitting residential and commercial buildings are expected, with a goal of four million buildings and two million homes over the next four years, while creating new jobs in the construction and manufacturing sectors. Mandates to increase the efficiency of federal buildings are also expected.

Public Companies: President Biden's plan includes requirements for firms to measure and disclose GHG footprints, both for owned operations and supply chains, and to analyze and disclose climate change-related risks.

Biden has said he will convene big industrial global leaders and try to get them to cut GHG emissions more aggressively. We can also expect a return to more stringent pollution and emissions regulation, and stronger enforcement against those that do pollute.

Oil and Gas: Methane pollution limits will likely be set for operations, and new oil and gas permitting will likely be required on public lands. The administration is looking to use regulatory and other levers to drive low carbon liquid fuels, including biofuels and carbon capture, use, and storage.

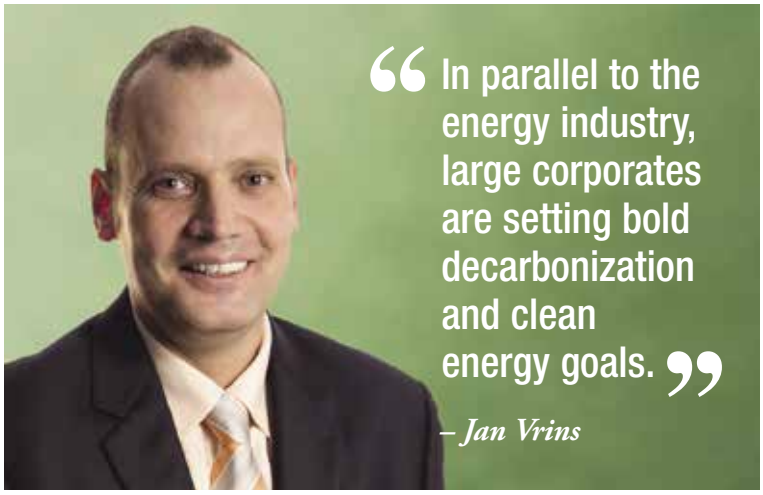
Broader Implications

GHG reduction targets or goals will be set at the federal level, but states, cities, utility companies, corporates, and industrials will need to develop pathways for achieving these targets. A substantial number of these entities have already set clean energy and decarbonization targets, but few are making progress in line with their ambition.

For the power sector, the transition to net zero emissions could represent a seismic shift in business strategy and infrastructure. Utility companies like Arizona Public Service, Duke, Xcel, Public Service Company of New Mexico, Avista, Idaho Power, and Green Mountain Power have all committed to a hundred percent clean energy.

But even these leaders will need to engage stakeholders and technical and financial experts to better understand the ideal portfolio mix, programs, and implementation scenarios and their implications on carbon reduction. They will need to begin the work of changing infrastructure and executing good measurement and verification processes to ensure they are on the right path.

In parallel to the energy industry, large corporates are setting bold decarbonization and clean energy goals. More than a thousand firms have set aggressive science-based targets to reduce their GHG footprint in line with the Paris Agreement requirements.



Hundreds of firms have pledged to use a hundred percent renewable energy, including Anheuser-Busch InBev, Johnson & Johnson, and Target. Dozens of leading firms including Walmart, Biogen, and Microsoft are setting groundbreaking goals like 24/7 renewable energy, zero carbon, or beyond zero carbon. These firms will need help managing, financing, and delivering on their commitments.

Corporates are already acquiring clean energy, both onsite and from the grid. Facebook purchased one and a half gigawatts of renewable energy in 2019 alone. This demand is expected to accelerate rapidly given the additional pressures on these companies to decarbonize.

If their clean energy needs cannot be met by existing suppliers, corporates have shown willingness to switch to other suppliers and formats to meet their goals (such as onsite, virtual power purchase agreement, and beyond).

Many of these corporate GHG goals, like science-based targets, require reductions from the supply chain as well. Leading firms exerting their leverage on suppliers will unlock a second wave of demand for energy efficiency, GHG tracking, decarbonization, and clean energy solutions.

See Figure 1.

Role of Technology

Technology needs to advance further to address climate change. We will see advances in renewable energy generation, including offshore wind, transportation, building technologies, and grid operations, to name a few.

Advances in storage technology will be critical to the integration of variable generation like wind and solar, as will better management of the grid through IT and grid modernization. Carbon capture and sequestration has not been economically viable but will be important to achieve the 2050 net zero carbon targets.

In 2021, we will also see breakthrough technologies. For example, hydrogen is being explored as a blending fuel with natural gas (potentially acceptable with medium-aged gas turbines up to thirty percent).

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But to achieve a carbon-free energy system, we will need green hydrogen at scale. With the aggressive investments in electrolyzer technology globally, the U.S. should see significant hydrogen cost reductions and advances.

Closing

Throughout the past four years, sustainability and clean energy grew rapidly in the U.S. with virtually no federal support, driven primarily by pressure from the financial sector. Utilities, state and local governments, and corporations are now preparing for a rapid acceleration of clean energy and sustainability expectations when the federal government adds its influence to existing financial drivers.

Every stakeholder will need to act to meet the new minimums, but those that act boldly and specifically are poised to reap durable growth and competitive advantages. PUF

At the NARUC Winter Policy Summit February 10:

General Session: Congressional Update

Keynote Speaker: Rep. Michael (Mike) K. Simpson (R-ID), House Appropriations Committee, Ranking Member for the Subcommittee on Energy and Water Development, and member Interior and Environment Subcommittee.

General Session: NARUC, the States, and the Administration: Where Do We Go from Here?

NARUC committee representatives will discuss the most important issues facing the state PUCs today and over the next few years. What would they like to say to the new administration about priority issues? How can the feds best work with the states to achieve their respective goals? What's uppermost on the minds of the state commissioners who also lead NARUC's standing committee?

Facilitator: Hon. Paul Kjellander, Idaho, NARUC President

Participants include: Hon. Abigail Anthony, Rhode Island, Hon. Maria Bocanegra, Illinois, Hon. Karen Charles-Peterson, Massachusetts, Hon. D. Ethan Kimbrel, Illinois, Hon. Ann Rendahl, Washington

Innovative Technology Demonstration and Deployment: Next Stop, Cost Recovery

Sponsored by the Committee on Energy Resources and the Environment

At the Tuesday General Session, National Labs described how the utility environment for innovation is changing and how innovation moves from the developmental stage to practical applications. Due to the changes described in Tuesday's session, regulators are contemplating best practices for incentivizing, reviewing, analyzing, approving, and rewarding utilities for successfully deploying innovative technologies throughout the electricity system. Regardless if the change is through public policy or proposed by the utility, regulators have principles, frameworks, and tools for approving investment and cost recovery. This panel will review how risk is shared between utility shareholders and customers, how jurisdictions have approached innovation investment thus far, and initiate a discussion reflecting how regulators can leverage preexisting guidance to manage their states' energy future.

Moderator: Hon. Tyler Huebner, Wisconsin

Panelists: Hon. Thad LeVar, Utah, Kristin Munsch, Deputy Director, National Grid, Julien Dumoulin-Smith, Managing Director, Bank of America Securities