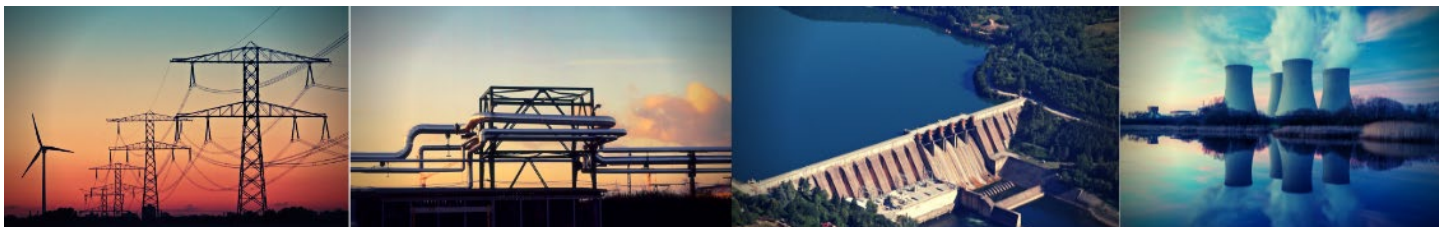


EBA BRIEFTM

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SETTING AN AGENDA: THE NEXT DECADE FOR THE COMMISSION

- BY NORMAN C. BAY

The Federal Energy Regulatory Commission (FERC) has an extraordinary opportunity to craft a bipartisan agenda for the 2020s that furthers the public interest and builds on the Commission's traditional support for markets, infrastructure, and innovation, while enhancing reliability and efficiency. Since its creation in 1977, the Commission has been an international leader in energy policy, meeting the challenges of the day and promoting competition through restructuring of the natural gas and electricity markets and creating Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). This leadership helped pave the way for the energy transition as economic forces, technological innovation, public policy, and consumer preference drove dramatic changes in the generation mix over the last decade. This transition will likely accelerate in the 2020s, which, in turn, provides an overarching theme for the Commission's agenda over the next decade: electrification.

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How to Think About Electrification

There are at least two ways to think about the electrification of the U.S. economy. One explicitly recognizes the reality of climate change, the threat that it poses, and the importance of electrification as a means to substantially decarbonize the economy. Viewing electrification through this lens allows the Commission to better advance the public interest, which is at the core of its statutory mission.¹ Given the overlap between energy and environmental policy, FERC has a critical role in facilitating the U.S. response to climate change. Today, transportation, not the power industry, emits the most greenhouse gas in the U.S. economy.² Many policymakers recognize that the on-going decarbonization of the power industry can be leveraged through electrification to reduce emissions from other sectors of the economy, including surface transportation, space heating, and industrial processes.³ As a result, FERC will have to plan for the grid of the future – one in which there is a far greater demand for electricity.

Over the last decade, few issues have been as polarizing as climate change. For several reasons, however, there may come a time when it is possible to achieve modest bipartisan agreement on policies that address climate change. In 2019, then-Director of National Intelligence Daniel R. Coats warned of the national security risks posed by climate change:

Global environmental and ecological degradation, as well as climate change, are likely to fuel competition for resources, economic distress, and social discontent

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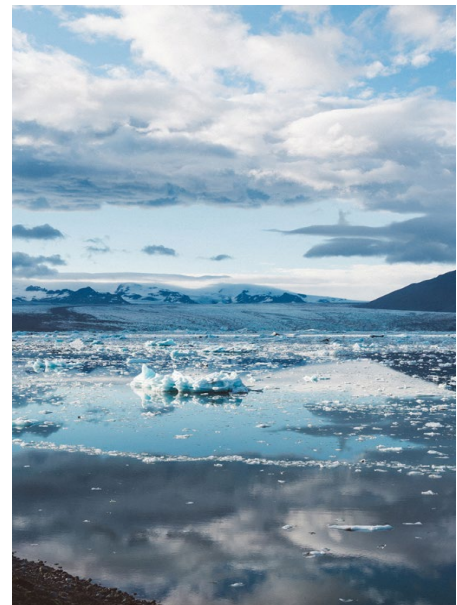
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*through 2019 and beyond. Climate hazards such as extreme weather, higher temperatures, droughts, floods, wildfires, storms, sea-level rise, soil degradation, and acidifying oceans are intensifying, threatening infrastructure, health, and water and food security. Irreversible damage to ecosystems and habitats will undermine the economic benefits they provide, worsened by air, soil, water, and marine pollution.*⁴

Similarly, the Department of Defense has long recognized that “climate change could have significant geopolitical impacts around the world, contributing to poverty, environmental degradation, and the further weakening of fragile governments,” which “may act as an accelerant of instability or conflict.”⁵

The five hottest years in recorded history were the last five,⁶ and record warmth this past winter has 2020 on track to be one of the hottest ever.⁷ Pacific Gas & Electric (PG&E) has been described as the first climate change-related bankruptcy.⁸ Devastating bushfires swept across Australia in what is being called the Black Summer of 2019-20. Wildfires are presently burning through millions of acres in the western United States. If anything, climate models appear to have been too cautious in their projections.⁹ Young voters have proven to be particularly concerned with climate change.¹⁰ In Congress, the House of Representatives formed the Select Committee on the Climate Crisis and many Democrats have supported the Green New Deal. House Republicans recently floated the idea of planting a trillion trees, supporting clean-energy innovation, and conservation.¹¹

Other federal regulatory agencies have begun to examine the impacts of climate change on their mission.

In 2010, the Securities Exchange Commission (SEC) issued guidance to companies on disclosing climate change risks, advising that “registrants whose businesses may be vulnerable to severe weather or climate-related events should consider disclosing material risks of, or consequences from, such events in their publicly filed disclosure documents.”¹² In November 2019, the Federal Reserve hosted its first conference on the economics of climate change. Chair Jerome Powell stated, “[t]he public has every right to expect and will expect that the financial system is resilient and robust against the risks of climate change.”¹³ On September 9, 2020, the Commodity Futures Trading Commission’s Climate-Related Market Risk Subcommittee issued a report that concluded, “Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy.”¹⁴

“...regardless of one’s view of climate change, the energy transition is occurring, and the Commission has an important role in managing and facilitating the transition.”

Another way to consider electrification is simply to acknowledge that, regardless of one’s view of climate change, the energy transition is occurring, and the Commission has an important role in managing and facilitating the transition. The Commission’s recent rulemaking on transmission incentives reflects this approach, as it notes, without mentioning climate change, that the changing resource mix “create[s] a

need for more transmission infrastructure to bring generation to load,”¹⁵ and that “electrification in industries such as transportation, heating, and agriculture are expected to contribute to peak load growth, requiring additional transmission investment to meet those needs.”¹⁶

The Environmental Protection Agency’s (EPA) Clean Power Plan (CPP) offers a dramatic example of the rapidity of the energy transition. At the national level, the CPP called for a 32 percent reduction in carbon emissions from 2005 levels by 2030. In 2015, when the Commission held a series of technical conferences on the CPP, some stakeholders warned that the reduction was unattainable or would risk price spikes or jeopardize reliability. In 2019, 11 years ahead of schedule, the CPP’s objective was achieved at the national level; the power industry’s carbon emissions were 33 percent below 2005 levels.¹⁷ But, even more remarkably, this progress occurred even though federal court litigation prevented the CPP from ever being implemented.

This outcome is not an outlier, but rather a harbinger of even greater change to come. In April 2019, for the first time, more electricity was generated from renewables than from coal.¹⁸ In May 2019, another inflection point occurred when, for the first time, there was more renewable capacity in the United States than coal capacity.¹⁹ In 2019, U.S. renewable energy consumption surpassed coal for the first time since before 1885.²⁰ This trend will continue as more renewables are added to the grid, while coal retires. From 2014 through 2019, new capacity was usually half

or more renewables, with the remainder being gas. In contrast, from 2010 through the first quarter of 2019, more than 546 coal plants totaling over 100 gigawatts (GW) of capacity retired with additional retirements planned.²¹

Energy Transition: Key Drivers Toward Electrification

Economics, innovation, public policy, and consumer choice are propelling the energy transition. These forces are not going away; if anything, they are causing the transition to accelerate. According to the well-known Lazard study on the levelized cost of energy, on-shore wind and solar resources are cheaper than coal or gas generation on an unsubsidized basis.²² Lithium-ion battery storage costs have plummeted about 80% over the last five years,²³ and further declines are expected.²⁴ Digitalization based on advances in cloud computing, machine learning, and the internet of things enables the development of a far more flexible, responsive grid than the one of the past. Even a hydrogen economy would rely on renewable energy to produce green hydrogen through electrolysis.

Public policy has helped drive the change. The Production Tax Credit and Investment Tax Credit support the development of wind and solar resources. Twenty-nine states have renewable portfolio goals, and a growing number of states, including California, Hawaii, New Jersey, Connecticut, Virginia, Wisconsin, Colorado, New York, Maine, Nevada, Washington, and New Mexico, have goals to be 100% clean energy by mid-century.²⁵ A growing number of utilities have

also announced plans to provide 100% clean energy or to have net-zero emissions by mid-century.²⁶ A recent study concluded that, given the plummeting cost of renewables and energy storage, with the right public policies in place, the United States could have 90% clean energy by 2035, while maintaining reliability and lowering wholesale prices.²⁷

Consumers at the individual and corporate levels have supported the energy transition. According to a recent Pew Research Center report, despite the partisan divide on climate change, sizable majorities of Republicans and Democrats support solar panel farms (86% and 96%, respectively) and wind turbine farms (77% and 92%).²⁸ At the individual level, many

homeowners have embraced rooftop solar. There are more than two million solar installations in the United States, with a doubling of that number to four million by 2023.²⁹ At the corporate level, 228 companies, including some of the largest and best-known names in corporate America, have committed to using 100 percent renewable energy.³⁰ In 2018, companies procured more than 6.5 GW of renewable energy.³¹

In short, the energy transition is paving the way for electrification. To support electrification, the Commission should build on past progress and rely on traditional tools in its policy toolkit to support markets, infrastructure, and innovation. Now is the time for the Commission to begin planning for the grid of the

JASON F. LEIF CHAPTER SERVICE AWARD

In February 2018, the Energy Bar Association created the Jason F. Leif Chapter Service Award in memory of Jason F. Leif, a past EBA President, a past President of the Houston Chapter of the EBA, and a motivating force in the revitalization of the Houston Chapter. This award honors and recognizes exemplary long-term service, or one or more particularly significant examples of service, by an EBA member to one or more of the EBA Chapters. Exemplary service to the community in connection with EBA Chapter activities may also be considered. The award is granted as deemed warranted by the EBA Board and may, or may not, be granted annually.

In May 2018, Jason was presented the first award, posthumously. In 2020, Crystal McDonough received this award for her instrumental role in the growth of the Rocky Mountain Chapter in terms of membership and events.



2020

Crystal McDonough

DIVERSITY AND INCLUSION CHAMPION

This award is given to an EBA Member who has shown unequivocal support of EBA's diversity and inclusion program with sustained efforts toward the active promotion of diversity and inclusion within the Association and legal profession. This person embodies the principles of EBA's Diversity and Inclusion program as outlined in the Diversity and Inclusion Policy and through their actions in EBA, CFEBA and FELJ and/or their professional career.

The award was presented for the first time in May 2019 to Emma Hand, a former EBA President who was the driving force behind EBA's establishment of a formal Diversity and Inclusion Policy. In 2020, Chief Judge Carmen Cintron received the award for her long term and successful efforts to change the face of an organization, FERC Office of Administrative Law Judges, and to create a more diverse and inclusive core of ALJs.



2020

Chief Judge Carmen A.
Cintron

future, as opposed to considering policies on a more ad hoc basis. This is particularly important given the pace of economic and technological change relative to the regulatory process and the time it takes to complete a major rulemaking or to build major infrastructure.

"In short, the energy transition is paving the way for electrification."

What Can FERC Do To Address Electrification?

One suggestion would be for the Commission to hold a technical conference on electrification that draws upon the expertise of key stakeholders, including state regulators, industry and trade associations, the National Laboratories, academics, and non-governmental organizations. This conference would examine a host of issues, including an assessment of the state of electrification today, how and why it is likely to unfold over the next decade or two, challenges to electrification, and whether the Commission should re-examine any of its policies in light of electrification. The Commission could organize panels around general policies that will be instrumental in supporting electrification. Comments would also be allowed after the conference, and stakeholders would be encouraged to provide suggestions to the Commission.

This conference is intended to be the start of an on-going dialogue with stakeholders. The Commission could use the conference record to begin framing its strategic plan and to determine the subjects for follow-up technical conferences and workshops. Once the Commission develops its strategic plan, it

should provide transparency through traditional mechanisms, such as staff white papers, stakeholder meetings, speeches by Commissioners, and ultimately a series of Notices of Inquiry or Notices of Proposed Rulemakings that provide a road map on what the Commission is contemplating.

Markets

The Commission will have many options to consider that fall within its traditional wheelhouse. Among those options will be continued support for the development of competitive wholesale markets. Markets promote economic efficiency, reliability, and transmission planning. In a future with increasing amounts of renewables, the resource and load diversity of RTO/ISO markets enables higher penetration of renewable resources. California Independent System Operator (CAISO) and Southwest Power Pool (SPP) have set records in which they met more than 70% of their load with renewables. RTO/ISO markets also improve reliability by providing the market operator with enhanced situational awareness across a wider geographic footprint.

The West offers a prime opportunity to advance wholesale markets. Since November 2014, the Energy Imbalance Market (EIM) in the West has resulted in savings of almost a billion dollars for ratepayers.³² Regionalization could occur incrementally through the EIM, which already has 11 members (with another eight on the way), and which is exploring the creation of an extended day-ahead market. Similarly, regionalization could occur through an expansion of SPP. Tri-State Generation, Basin Electric Power Cooperative, and the

Western Area Power Administration have announced plans to join SPP's Western Energy Imbalance Service Market.

Second, the Commission should consider offering additional financial incentives to transmission owners to join an RTO/ISO. Given the value of organized markets, it is reasonable to continue providing an adder to transmission owners that already belong to an RTO/ISO, but an additional adder should be awarded to transmission owners that are joining an RTO/ISO for the first time. This "newbie" adder would phase out after five years, after which time the transmission owner would receive the standard RTO/ISO adder. Because the Commission is unlikely to revive Standard Market Design, incentives provide an important tool to encourage expansion of organized markets.

Third, the Commission should consider market design for the future when there will be a high percentage of renewable resources. Unfortunately, one impediment to regionalization in the West is the Minimum Offer Price Rule (MOPR) used in the capacity markets of PJM Interconnection (PJM), ISO New England (ISO-NE), and New York Independent System Operator (NYISO). Many western stakeholders fear that regionalization will enable Commission interference with state policy and lead to the imposition of the MOPR. One signal the Commission could provide in support of markets would be to eliminate the MOPR.

Regardless of one's view of the MOPR, it is unlikely to be durable. It has proven to be controversial

at the Commission, among states, and across the industry. The MOPR raises costs for consumers, impedes state policy choices, and layers an ever more complicated administrative construct on top of the capacity market. The Commission's effort may be unique among agencies in trying to mitigate state subsidies, despite the prevalence of such subsidies across industries.³³ The MOPR construct and the endless tinkering it requires results in an enormous drain on the resources of the Commission, RTO/ISO markets, and stakeholders – resources better spent on constructing a more lasting design.

*"Regardless of one's view
of the MOPR, it is unlikely
to be durable."*

The Commission recently agreed to hold a technical conference on carbon pricing in the organized wholesale electricity markets.³⁴ The conference will explore legal considerations, carbon pricing mechanisms, and market design.³⁵ In theory, carbon pricing could provide an alternative to the MOPR if the price is set at the appropriate level and reflected in the RTO/ISO markets, leading states to reduce their support for carbon-free resources. For example, NYISO has developed a proposal in which the social cost of carbon would be built into NYISO's wholesale energy market.³⁶

Under NYISO's proposal, suppliers would include a carbon charge in their energy offers. This

proposal would integrate carbon charges into the unit commitment, dispatch, and price formation through NYISO's existing processes. Suppliers would be charged for their carbon emissions by debiting them at settlement and NYISO would charge imports and credit exports for their carbon emissions to prevent leakage. Amounts collected would flow back to Load Serving Entities and consumers. Studies have estimated savings of \$605 million to \$3.25 billion from 2022 to 2036, with the state having less need to support carbon-free resources through zero emission credits or renewable energy credits.³⁷ Other markets, including ISO-NE and PJM, have also explored carbon pricing.

Any RTO/ISO filing implementing carbon pricing would have to be just and reasonable under section 205 of the Federal Power Act (FPA). Precedent supports accepting such a filing, as the Commission has accommodated the price on carbon in states that belong to the Regional Greenhouse Gas Initiative and in California's cap-and-trade system. In CAISO, ISO-NE, NYISO, and PJM, a carbon adder is built into energy market offers. Moreover, the Commission has previously held that while it does not have jurisdiction over environmental attributes associated with the production of energy such as renewable energy credits or emission allowances, it does have jurisdiction over bundled products that include the sale of such attributes.³⁸ This precedent provides useful support for the Commission's acceptance of a section 205 filing from an RTO/ISO in which a carbon adder is included in an energy market offer.³⁹

Transmission

Electrification will require enormous investments in transmission. According to a Brattle Group Study, this includes \$30 to \$90 billion in incremental transmission investment by 2030 and \$200 to \$600 billion in incremental investment by 2050.⁴⁰ This transmission will support 70 to 200 GW of new power generation by 2030 and 200 to 800 GW of new generation by 2050.⁴¹ In order to address this need, the Commission should optimize the capacity of existing transmission while supporting the development of new transmission. The Commission's Transmission Incentives Notice of Proposed Rulemaking (NOPR) recognizes the value that grid-enhancing technologies (GETs) can provide and incentivizes their adoption.⁴² This NOPR is a step in the right direction. However, the low capital cost of GETs may require the use of an incentive beyond a traditional return on equity (ROE) adder.⁴³

"Electrification will require enormous investments in transmission"

For new transmission, problems fall generally into three interrelated and often intractable categories: planning, cost allocation, and siting.⁴⁴ Possible solutions should be sorted into those the Commission has the existing authority to implement and those that will require congressional action. As an initial matter, the Commission should assess Order No. 1000 to determine where it has succeeded and where it has

failed.⁴⁵ Nine years after it was issued, almost all would agree that it has not lived up to its lofty promise.⁴⁶ Stakeholders seem to fall into two camps: those who would keep Order No. 1000 but seek to remedy its deficiencies, and those who would scrap it and urge the Commission to start over. It is difficult to envision the long interregional lines needed to support electrification being built under Order No. 1000. Indeed, Order No. 1000 may even have created an incentive for transmission owners to build shorter, reliability projects that are not subject to a competitive bidding process.⁴⁷ The Commission's last technical conference on Order No. 1000 occurred in June 2016. The Commission should hold another conference to assess the last four years under Order No. 1000 and to identify any lessons learned.

The Transmission Incentives NOPR proposes shifting from an approach that focuses on the risks and challenges of transmission projects to the benefits they provide. Nevertheless, there may be times when it is appropriate to consider risks and challenges. To incentivize the development of new, long, high voltage transmission lines, which are generally the hardest to build, the Commission could provide an adder of fifty to 100 basis points depending upon the length of the line and whether it is interregional. This incentive would end after an initial five-year period. In assessing benefits, and to be consistent with Order No. 1000, the Transmission Incentives NOPR should also consider public policy.⁴⁸

On cost allocation, the recurring problem is no one wants to pay for transmission, even though the

benefits of building out a network are well recognized. The Commission was once able to argue that high voltage transmission provided significant benefits to an entire region; thus, the costs could be allocated broadly on a "postage stamp" basis. The Seventh Circuit, however, rejected this rationale in a pair of controversial 2-1 decisions, with Judge Richard Posner writing for the majority each time and Judge Richard Cudahy in dissent.⁴⁹ The upshot is that the RTOs/ISOs and the Commission must now routinely do backflips to justify cost allocation, and the question of cost allocation is oft litigated, creating regulatory uncertainty and impeding transmission development. Congress could fix this issue by passing legislation that recognizes the regional benefits of high voltage transmission and that provides greater discretion to the Commission to take into account such benefits for cost allocation purposes.



On siting authority, the Commission's options are limited. One that does not involve congressional action would be to transfer the Department of Energy's (DOE) transmission siting authority to the Commission. Section 216 of the FPA gives the

Secretary of Energy the authority to designate national interest electric transmission corridors after doing congestion studies and examining a variety of factors. Although DOE considered delegating its section 216 authority to the Commission, it ultimately declined to do so.⁵⁰ Nevertheless, delegating the authority would replace the current inter-agency gating process with a more streamlined approach that recognizes the technical experience and expertise of the Commission in evaluating transmission needs, energy markets, and infrastructure siting.

Three options, however, would require congressional action. One is for Congress to address the Fourth Circuit's 2-1 decision in *Piedmont Environmental Council v. FERC*.⁵¹ Section 216 of the FPA provides the Commission with backstop siting authority for national interest electric transmission corridors when a state commission has "withheld approval for more than one year after the filing of an application" for a permit. In issuing a final rule to implement the legislation, the Commission concluded that to withhold approval of an application included its denial. The Fourth Circuit disagreed, reasoning that "[t]he phrase 'withheld approval for more than one year' – under its plain meaning – does not give FERC jurisdiction under Section 216(b)(1) when a state commission denies a permit application or modification of electric transmission facilities in a national interest corridor."⁵²

This decision gutted the Commission's section 216 authority. Clearly, Congress intended to remedy siting issues that went beyond a state commission slow rolling a permit application. As the dissent argued, the

legislation's context was to enable the development of national interest transmission lines.⁵³ Moreover, "[u]nder the common meaning of the words 'withhold' and 'approval,' approval is withheld, i.e., not granted, every day that no decision is issued granting approval, and it continues to be withheld on the day an application is denied."⁵⁴ Thus, the time is ripe for Congress to undo *Piedmont* and to make clear its intent. A simple fix: inserting the word "denied" into the statute – would cure the problem.

A second option is more far-reaching and, while controversial, would remove siting as an impediment to the development of transmission: give the Commission siting authority under the FPA in the same way that it has siting authority for interstate gas pipelines under the Natural Gas Act (NGA). There is a reason why the United States has such a robust network of interstate gas pipelines; pipeline developers receive siting authority when FERC certifies their projects and can rely on eminent domain to acquire easements. In effect, this confers a significant competitive advantage to gas infrastructure over electric infrastructure. Gas generators, in turn, benefit from ample pipeline capacity. The implicit costs of this advantage are disproportionately borne by renewable generation, given the distances between the renewables-rich regions of the United States and load centers. It may be far easier for a utility to build a gas plant in its service territory than to build a distant wind farm that requires new transmission. Legislation that proposes to confer transmission siting authority on the Commission would create a level playing field but would undoubtedly run

into a buzz saw of opposition from states and local governments. Politically, it is unclear whether such legislation could be enacted.

A third option would realize the promise of National Renewable Energy Laboratory's (NREL) Interconnection Seams Study. This study examined the benefits and costs of increasing transmission capacity across the Eastern and Western Interconnections. The scenarios included a range of options such as increasing the capacity of existing high voltage, direct current (HVDC) ties across the seam, adding a number of AC lines, adding new HVDC lines across the seams plus AC lines, and building a national HVDC grid along with AC lines.⁵⁵ Significantly, regardless of the scenario modeled, the benefits far outweighed the costs. Nevertheless, under the current framework for transmission development, it is impossible to envision any of the scenarios being realized, despite their compelling economics, reliability, and public policy benefits.⁵⁶

One policy response may be for Congress to treat transmission as a public good, much like the interstate highway system, and, as former Chairman Jon Wellinghoff has argued, to develop a national transmission plan. With congressional authorization, the Commission is uniquely positioned to help create and implement such a plan. Legislation should also provide siting authority and perhaps even funding or tax credits for the transmission. Such funding could alleviate cost allocation issues and recognize the value that high voltage transmission provides in achieving critical public policies that benefit all Americans.

Innovation and Distributed Energy Resources

Electrification also gives the Commission the opportunity to support innovation. In November 2016, the Commission issued a NOPR to remove barriers to participation for energy storage and distributed energy resources (DER) in the RTO/ISO markets.⁵⁷ Chairman Chatterjee deserves credit for completing the energy storage rulemaking in February 2018.⁵⁸ This

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rulemaking sent an important signal to the power industry, provided regulatory certainty to storage resources, and allowed compensation for services that storage is technically capable of providing in the wholesale markets. In September 2020, the Commission completed the DER rulemaking and issued the long-awaited Order No. 2222, which recognizes the benefit DER will provide to consumers, competition, and the grid.

Order No. 2222 will likely prove to be a landmark order. DER is happening, and it is real. According to the Solar Energy Industry Association (SEIA), there are now more than two million PV solar installations.⁵⁹ Residential energy storage has had record growth,⁶⁰ and aggregated residential storage successfully bid into the ISO-NE capacity market.⁶¹ Similarly, demand response providers have been able to use networks of smart thermostats to aggregate load reductions across thousands of homes. Microgrids can support resiliency, especially during extreme weather events, and can provide valuable capacity to the grid. DER can also alleviate congestion on a localized basis. Flexible resources are more important than ever during the energy transition, and DER can provide that flexibility. Similarly, by providing additional resources to the grid, DER promotes competition.

While some stakeholders opposed the DER rulemaking on jurisdictional grounds, those arguments are all but certain to fail on appeal. *FERC v. Electric Power Supply Ass'n* and *National Association of Regulatory Utility Commissioners v. FERC* provide powerful support for allowing DER to participate in the

wholesale markets.⁶² In *EPSA*, the Supreme Court upheld Order No. 745, which allowed demand response to participate in the wholesale markets. The Supreme Court held that the Commission may regulate practices directly affecting wholesale rates even if the practices affect retail rates.⁶³ Moreover, while Order No. 745 included an opt-out provision for the states, the Commission was not required as a matter of law to provide one. In *NARUC*, the D.C. Circuit followed *EPSA* and upheld the Commission's energy storage rule (Order No. 841), which allows distribution-level storage resources to participate in the wholesale markets and which does not contain an opt-out provision for states.⁶⁴ Similarly, in *Advanced Energy Economy*, the Commission foreclosed the argument that wholesale energy efficiency programs were required to have a state opt-out provision, noting that in *EPSA* "the Supreme Court's findings that the 'rules governing wholesale demand response programs meet [the standard of section 824(b) of the FPA] *with room to spare*' and address only transactions occurring on the wholesale market."⁶⁵

Electric Reliability

In a world of advancing electrification, reliability will be more essential than ever. The COVID-19 crisis has been a stark reminder of the necessity of electricity to modern life. Despite the terrible human and economic toll taken by COVID-19, it was a comfort to all Americans to know that, no matter what else was going wrong, the lights stayed on, as we retreated to our residences to comply with stay-at-home orders. Working remotely is impossible

without the internet, and the internet cannot function without electricity. Industry deserves the gratitude of all Americans for maintaining reliability amidst an unprecedented challenge. To protect reliability, the Commission must continue its decade-long focus on cybersecurity, where, in light of evolving threats, there is always more work to be done. On June 18, 2020, the Commission concurrently issued a Notice of Inquiry that explores potential enhancements to the Critical Infrastructure Protection Standards⁶⁶ and a staff white paper that examines ways to incentivize cybersecurity investment.⁶⁷ The Commission will also have to further its work on geomagnetic disturbances, especially as the science develops,⁶⁸ and identify and assess other threats to the grid, including pandemics and extreme weather events, the frequency and severity of which have been linked to climate change.⁶⁹

Conclusion

Setting an agenda based on electrification builds on the Commission's traditional support for markets, infrastructure, and innovation. Undoubtedly, there are many policies the Commission should consider, and this article is not intended to be comprehensive.⁷⁰ Instead, these are the views of one former Commissioner; undoubtedly, the current Commission and its successors will have their own views on how best to advance the

public interest. The discussion is likely to be an ongoing one, as it should be. Bill Gates famously said, "We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction." The pace of electrification is likely to accelerate, and the Commission has the opportunity to plan and prepare for the grid of the future. This planning and preparation is particularly important given the economic forces, innovation, public policies driving the change, the pace of change, and the timeline to complete rulemakings and to build infrastructure. Consistent with its past, the Commission can once again help enable the future.

About the Author

Norman C. Bay is a partner and head of the energy regulatory group at Willkie Farr & Gallagher LLP. The views expressed here are his own and do not reflect the views of Willkie Farr & Gallagher LLP or anyone else. He gratefully acknowledges the assistance of Charles B. Curtis, Larry Gasteiger, Max Minzner, and Rama Zakaria in reviewing this article.



¹ See Rich Glick & Matthew Christiansen, *FERC and Climate Change*, 40 ENERGY L.J. 1, 2 (2019) ("climate change increases the stakes of many Commission actions, making it all the more important that the Commission carry out its existing obligations").

² See *Sources of Greenhouse Gas Emissions*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (Apr. 11, 2020) <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

³ See STAFF OF H. SELECT COMMITTEE ON THE CLIMATE CRISIS, 116TH CONG., SOLVING THE CLIMATE CRISIS 4 ("Decarbonization of the electricity sector is the linchpin of any national strategy to achieve net-zero emissions economy-wide by no later than

2050. Electrification of key end uses in the transportation, buildings, and industrial sectors will be essential to cut emissions from those sectors."); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, GLOBAL WARMING OF 1.5°C 15 (Valérie Masson-Delmotte et al. eds., 2018).

⁴ DANIEL R. COATS, STATEMENT FOR THE RECORD: WORLDWIDE THREAT ASSESSMENT OF THE U.S. INTELLIGENCE COMMUNITY 23 (2019) (emphasis in original).

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RESTORING CONSENSUS AND BALANCE TO FERC'S MARKET POLICIES

- BY HARVEY REITER, JONATHAN SCHNEIDER AND ABRAHAM SILVERMAN

In the absence of federal policy addressing climate change, and in the wake of the federal government's decision to roll back an administrative solution,¹ states around the country have taken the lead in advancing a clean economy, centered around reducing greenhouse gas emissions from our electric and natural gas sectors. New Jersey has been among the nation's leaders in this respect, with core elements of its policy including an ambitious 100% clean energy goal by 2050, an 80% reduction in CO2 levels by 2040, an aggressive Renewable Portfolio Standard (RPS), and incentives directly targeted at nuclear, solar, energy efficiency, and offshore wind.

Recent decisions by the Federal Energy Regulatory Commission (FERC) on the Minimum Offer Price Rule (MOPR) administered by PJM Interconnection, L.L.C. (PJM) are a surprisingly blunt assault on state-based policy initiatives.² Initially designed to limit monopsony power distortions of competitive market outcomes, the MOPR under recent FERC decisions instead handicaps mainstream state energy policy initiatives. These initiatives include long-standing and widely-supported state RPSs that have served as a mainstay of state-based support for renewable generation for decades.

In the inaugural edition of this publication, former Chairman Cheryl LaFleur advised energy regulators to “seek compromise whenever possible with colleagues holding different views.”³ She also

wisely commented that “consensus decisions . . . are often the strongest decisions.”⁴ The recriminations between FERC Commissioners associated with issuance of the PJM MOPR Orders suggests that these decisions are on shaky ground, vulnerable if not in court (where the decisions are now on appeal), then to the next policy swing with a change in administrations. The electric industry depends on steady signals to make long-term investments, and policy swings of this nature serve the industry poorly.

This state of affairs is not inevitable. In the near term, whatever one's policy preferences with respect to measures addressing climate control and carbon emissions, a sustainable center of gravity is within reach at FERC if the Commission returns to two core fundamentals: (1) respect for competitive resource adequacy markets (as opposed to the chase for an elusive perfect market); and (2) respect for state demands for a greener grid.

A reinvigorated emphasis on resource adequacy⁵ calls for the Commission to remind itself why capacity markets were conceived to begin with: to ensure that sufficient capital is devoted to generation needed to serve load. No matter the resource adequacy market design—a Texas-style energy-only market, a Midcontinent ISO bilateral market, or a fully centralized market like PJM – we believe that all reasonable stakeholders should agree that the Commission's current unwillingness to respond to

clean energy demands in major regions of the nation undermines support for FERC-administered markets. This forces states interested in clean energy to consider an end-run around the wholesale market. Since participation in these markets is not and cannot be mandatory, FERC's current approach may ultimately be self-defeating, as states choose to vote with their feet.

"Can rates truly be just and reasonable if the result is a generation mix that makes our coastal cities uninhabitable?"

Looking ahead, we can envision market-based solutions that embody cooperative federalism, where states set enforceable clean energy targets and federal markets assist – rather than stymie – those efforts. At some juncture, both FERC and the courts may find that FERC-approved rates cannot be just and reasonable if they do not reflect environmental externalities. Can rates truly be just and reasonable if the result is a generation mix that makes our coastal cities uninhabitable?

Efforts in the previous administration to establish a social cost of carbon provide a conceptual basis for valuing carbon-emitting and non-carbon-emitting resource bids in organized markets. Alternatively, objective megawatt targets for zero carbon resources may be established, and markets designed to elicit the

most economical response. In both cases, we can see a path to bipartisan consensus forming around the premise that market-based solutions offer the most efficient and cost-effective path to accomplishing shared environmental objectives.

Regulatory stability in the fundamentals underlying the investment climate for long-term energy resources is essential to robust investment. The payoff of a bipartisan, consensus-driven approach to energy markets, is an industry that respects state autonomy while producing electricity more economically. Load is potentially growing for the first time in a generation, driven by the electrification of our building and transportation sectors. The ability of broad sectors of the economy to rely on a cleaner electric industry holds the potential to drive billions of dollars in new infrastructure spending. This spending comes at a perfect time to bring America back from the COVID-19 driven recession while also addressing environmental justice for communities of color.

How Did Things Get This Crazy?

A key benefit of restructuring of the electric industry, FERC reported in 2007, "has been to shift the risk of investment from customers to shareholders."⁶ FERC stated more than 20 years ago that the key to the success of restructured markets administered by RTOs was reliance on locational marginal pricing ("LMP") of energy. LMP was designed to "send price signals that are likely to encourage efficient location of new generating resources, dispatch of new and existing generating resources, and expansion of the

transmission system."⁷ But as one of the authors of this article recounted a few years ago:

[T]he use of LMP was not unqualified. To protect ratepayers in the restructured wholesale market environments...from market power abuses, the newly-formed ISOs proposed caps on the prices of energy sold in their markets. These price caps, however, themselves soon prompted complaints from generators. With caps on energy prices mandated by ISO market rules, generators successfully argued, they would be undercompensated if they could not be paid for their capacity to make up the revenue shortfall created by these energy price caps. The first capacity markets proposed by the eastern ISOs were a direct response to the so-called "missing money" problem posed by these very caps.⁸

The capacity markets themselves had certain core common elements. To promote competition, sellers (and later buyers, through demand response) would bid through clearing mechanisms that co-optimized reliability and cost, with the ultimate compensation determined by an administrative demand curve. Each ISO developed a market construct that was designed to reach economic equilibrium, allowing generators a reasonable opportunity, on average and over time, to recover and earn a return on investment.

But it was not long after the establishment of these capacity markets that merchant generators expressed concern that "net buyers" (market participants whose interests lay predominantly in purchases in the market, not sales) might introduce

new generation resources into the market at below cost in order to depress auction prices artificially. This would be a profitable strategy, the generators argued, because the net buyers could make up for sales losses with the savings they'd enjoy on their purchases of capacity at suppressed prices.⁹

PJM's response, approved by FERC in 2006, was the adoption of a MOPR that would set floors on seller offers. The offer floor initially applied only to new gas-fired generation affiliated or involved in a commercial relationship with net buyers. This was because, FERC reasoned, only net buyers had the motive to suppress prices artificially.¹⁰



Since then, FERC has expanded application of the MOPR in numerous respects, among other things eliminating MOPR exemptions for self-supply by load serving entities, and for state resource procurement programs. And it broadened the MOPR's application beyond gas-fired generation to capacity resources of all technologies, including renewable resources. In its latest set of decisions broadly expanding the MOPR in PJM's capacity market, FERC has embraced a nearly

unbounded and ambiguously defined range of state subsidies, triggering mitigation that threatens market participation.

What Are the States Up To?

In the absence of federal climate leadership, New Jersey and like-minded states across the country have been developing clear goals of decarbonizing their transportation, building, and energy sectors. State legislatures and public utility commissions are promoting a broad-based green revolution through RPSs, clean energy standards, and direct subsidies to carbon-reducing technologies. Until recently, these programs have been substantially responsible for the nation-wide development of wind and solar resources, although current economics in renewables-rich portions of the country make investment in clean energy the smart financial (as well as environmental) move. Berkeley Labs reported that by the end of 2018, 29 states (and the District of Columbia) had adopted RPSs and that roughly half of all renewable development has been associated with state-based RPSs.¹¹ The creation in many states of tradable Renewable Energy Credits (RECs) and the first mandatory carbon cap and trade program in the Northeast (The Northeast Regional Greenhouse Gas Initiative (RGGI))¹² are aimed at further spurring renewable development.

For its part, New Jersey has developed a clear path to meeting its 80% reduction in CO2 levels and 100% clean energy by 2050, as part of a year-long collaborative process that looked at all sectors of the economy.¹³ In addition to the existing RPS, solar,



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nuclear subsidies, and offshore wind statutes, New Jersey's 2019 State Energy Master plan suggests that the state needs 900 MW of new solar a year, plus aggressive investment in energy efficiency, storage and other clean energy resources.¹⁴ One critical finding from New Jersey's study is that it expects a near doubling of electricity usage over the next thirty years, as the state switches the transportation sector over to electricity and plans to use electricity to heat, cool and power homes and businesses.¹⁵ We fully expect that states around the nation aiming to achieve deep decarbonization will support similar strategies and will see similar trends.

How Do We Fix It?

States like New Jersey were drawn into ISO/RTO participation in the hope that multi-state markets would advance the health and welfare of each state better than each acting on its own. In PJM, significant financial savings and an excellent reliability track record have largely fulfilled this expectation.

Yet, FERC now puts PJM participants in the untenable position of having to choose between market savings and widely supported clean energy objectives. In the PJM MOPR Orders, FERC's breathtakingly broad definition of a market subsidy requires mitigation of any "mandated" or "sponsored" state-based process.¹⁶ FERC goes so far as expressly including RPSs,¹⁷ the programs associated with roughly half of the nation's renewable generation development since 2000.¹⁸

If the price of continued participation in an ISO/RTO includes surrender of environmental

objectives shared across the political spectrum and expressed in state law,¹⁹ we wonder whether participation in interstate markets will become a casualty. Indeed, states as diverse as Illinois, Maryland, Ohio and New Jersey, are asking whether to pull back from the ISO/RTO capacity construct in favor of state-based resource adequacy planning.²⁰

"There is no reason why interstate markets cannot make room for environmental concerns."

It doesn't have to be this way. There is no reason why interstate markets cannot make room for environmental concerns. Nothing bars FERC from crafting resource adequacy regimes that "accommodate" or even "achieve" state policies.²¹ The statutory just and reasonable standard is capacious enough to support markets aimed at achieving reliable, low cost outcomes while accommodating state-based environmental priorities. FERC has itself incorporated respect for state-based policies into regulatory constructs in the past. Certainly, FERC's decision on ISO-New England's Competitive Auctions with Sponsored Policy Resources (CASPR) comes to mind, as a vehicle expressly designed to accommodate state-based programs to procure identified resources.²² And in Order 1000, the Commission expressly required regional planning entities to build state policy preferences into the planning processes it announced it would approve.²³ Thus, FERC's unwillingness in the

name of market efficiency to accommodate state-based policies in the PJM MOPR Orders is more a policy choice than one driven by economic or legal imperative.

“Curiously, the PJM MOPR Orders are also at odds with two fundamental conservative principles: the belief in market-based solutions and respect for state’s rights.”

Curiously, the PJM MOPR Orders are also at odds with two fundamental conservative principles: the belief in market-based solutions and respect for state’s rights. One would think these principles provide building blocks for a return to FERC’s historically bipartisan, consensus-driven approach to regulation, a policy that “accommodates, adapts, and achieves” state policy goals.²⁴ A decision reversing the vastly overbroad definition of subsidies in the PJM MOPR Orders, if not by FERC than by the courts, would be a positive step in this direction.

It likewise seems reasonable to permit the incorporation of carbon constraints into wholesale markets by allowing states to mandate that a certain percentage of their capacity be delivered from zero carbon resources. What’s wrong with a federal program that uses FERC-administered markets to help states achieve environmental objectives from which we will all benefit in the most economical way possible?

Looking further ahead, we can envision market-based solutions to federally articulated carbon

policy objectives. These objectives may be detailed in federal legislation specifying sector-specific or economy-wide carbon reduction objectives, or they may be established by administrative rule.

We also do not rule out the possibility that FERC and the courts may at some juncture find that rates cannot be just and reasonable if they do not reflect environmental externalities. The Supreme Court’s decision in *NAACP v. Federal Power Commission*²⁵ is sometimes cited as authority for the proposition that it is beyond FERC’s authority to address carbon reduction as a policy objective. Yet, impact on the nation’s health and safety of the generation mix that results from FERC’s rate policies seems closely tied to FERC’s core statutory mission: safe and reliable service at the lowest reasonable cost.²⁶ Recent FERC decisions suggesting that rates cannot be just and reasonable unless they promote a resilient grid²⁷ certainly support the conclusion that FERC must be concerned with more than the lowest possible cost of electricity. And if, as scientific consensus clearly suggests, extreme weather events threatening the nation’s electric grid are the consequence of anthropogenic climate change, there is a good argument that it is within FERC’s mission to address the generation sector’s contribution to global warming and thus the effect on grid resilience.²⁸

Wither Now and Tomorrow

There was certainly a time when the nation stood to benefit from national bipartisan support for market-based solutions to a commonly understood climate threat. We are optimistic that we will someday

return to that political environment. In the meantime, there is no reason we cannot come to bipartisan agreement that states should be given the flexibility to address the climate challenge with the resources they believe are needed, without foregoing the benefit of

participation in federally administered markets. That modest goal ought to be within reach, with a little imagination.

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¹ Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations, 84 Fed. Reg. 32520 (July 8, 2019).

² See *Calpine Corp. v. PJM Interconnection, L.L.C.*, 163 F.E.R.C. ¶ 61,236 (2018), *reh'g den*, 171 F.E.R.C. ¶ 61,034 (2020); *Calpine Corp. v. PJM Interconnection, L.L.C.*, 169 F.E.R.C. ¶ 61,239 (2019), *reh'g den*, 171 F.E.R.C. ¶ 61,035 (2020) (together, "the PJM MOPR Orders").

³ Cheryl A. LaFleur, *You Can't Always Get What You Want: Finding Consensus in Regulatory Decision Making*, 1 EBA BRIEF 1, 6-7 (2020).

⁴ *Id.* at p. 7.

⁵ "Resource Adequacy" is FERC-speak for ensuring that there is sufficient generation supply, in the right areas, to meet customer demand and satisfy reliability criteria. As the D.C. Circuit noted, there must be "an adequate supply of generation or demand responsive resources to support safe and reliable operation of the transmission grid." *Sacramento Mun. Util. Dist. v. FERC*, 616 F.3d 520, 526 (D.C. Cir. 2010).

⁶ *Wholesale Competition in Regions with Organized Electric Markets*, 119 F.E.R.C. ¶ 61,306 at P 20 (2007) ("According to data from the Energy Information Administration (EIA), the percentage of generating capacity in the United States owned by independent power producers has grown from less than 2 percent in 1990 to more than 35 percent by 2005. A result has been to shift the risk of investment from customers to shareholders."); see also 2006 Report to Congress on Competition in Wholesale and Retail Markets for Electric Energy, p. 6.

⁷ *Pennsylvania-New Jersey-Maryland Interconnection, L.L.C.*, 81 F.E.R.C. ¶ 61,257, at 62,253 (1997).

⁸ Delia Patterson and Harvey Reiter, CHASING THE UNCATCHABLE: Why Trying to Fix Mandatory Capacity Markets is Like Trying to Win a Game of Whack-a-Mole, *Public Utilities Fortnightly* (May-June 2016). <https://www.fortnightly.com/fortnightly/2016/06/chasing-uncatchable?authkey=3d2731c2dc2856f13f36b01521a2e4ffaffbef294f4b55f4c8b35ef078595c92> (internal citations omitted). The authors do not mean to suggest that energy price caps are the sole cause or that capacity markets are the sole solution to the "missing money" issue. See, e.g., Michael

Hogan, *Follow the Missing Money: Ensuring Reliability at Least Cost to Consumers in the Transition to a Low-Carbon Power System*, 30 THE ELECTRICITY J. 55 (2017). Rather, our point is that price caps were the prime driver for the creation of capacity markets at their inception.

⁹ See, e.g., *PJM Interconnection, L.L.C.*, 137 F.E.R.C. ¶ 61,145 at P 2 (2011).

¹⁰ *Id.*

¹¹ LAWRENCE BERKELEY NATIONAL LABORATORY, *U.S. Renewable Portfolio Standards 2018 Annual Status Report*, <https://emp.lbl.gov/publications/us-renewables-portfolio-standards-1> ("Berkeley Labs Renewable Report").

¹² THE REGIONAL GREENHOUSE GAS INITIATIVE, Program Overview and Design, <https://www.rggi.org/program-overview-and-design/elements>.

¹³ 2019 New Jersey Energy Master Plan; Pathway to 2050, p. 17,

https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf

¹⁴ 2019 New Jersey Energy Master Plan, at p. 13 (noting that "...energy system modeling further supports that New Jersey should optimally build 17,000 MW of solar energy ... by 2035," or approximately 900 MW per year.)

¹⁵ *Id.* at p. 53 (noting that aggressive end-use electrification of the transportation and building sectors "has the effect of more than doubling demand for electricity compared to 2020 levels...")

¹⁶ *Calpine Corp. et al.*, 171 F.E.R.C. ¶ 61,035 at P 83 (2020).

¹⁷ The Commission exempted existing but not new RPS programs from the definition of a subsidy. *Id.* at P 2.

¹⁸ Berkeley Labs Renewable Report, p. 13.

¹⁹ This consensus is shared across party affiliations. See <https://www.pewresearch.org/fact-tank/2020/04/21/how-americans-see-climate-change-and-the-environment-in-7-charts/>.

²⁰ See IHS Markit, *Five PJM States Suggest FERC Order Could Prompt Exit from Regional Market*, <https://ihsmarkit.com/research-analysis/five-pjm-states-suggest-ferc-order-could-prompt-exit.html> (January 31, 2020); Ari Peskoe, Energy Law Initiative, available at <http://eelp.law.harvard.edu/wp-content/uploads/ISONexit-Memo.pdf> (citing to January 15, 2020) Letter From Katie Dykes to ISO-NE President and CEO Gordon van Welie. See

also, Patrick Skahill, "CT Taking 'Serious Look' at Exiting Regional Power Market," The CT Mirror, Jan. 16, 2020, (quoting Commissioner Dykes saying that she is "tak[ing] a serious look at the cost and benefits of participating in the ISO New England markets"). Connecticut DEEP, Agenda of January 22, 2020 Technical Meeting; See, e.g., New Jersey Board of Public Utilities, In the Matter of BPU Investigation of Resource Adequacy Alternatives, Docket No. EO20030203, Mar. 27, 2020 (launching an inquiry into whether the state should order its utilities to procure capacity outside of the PJM capacity construct). For Maryland – <https://www.utilitydive.com/news/maryland-taking-a-serious-look-at-exiting-pjm-through-frr-says-psc-chair/576957/> For Illinois: <https://energynews.us/2019/01/29/midwest/whats-at-stake-for-illinois-as-ferc-considers-pjm-capacity-market-changes/>.

²¹ In mid-2017, FERC convened a technical conference addressing to what extent ISO/RTO markets should be designed to accommodate state-based policy initiatives or achieve them. See, Notice Inviting Post-Technical Conference Comments, Docket No. AD17-11-000 (May 23, 2017).

²² *ISO New England Inc.*, 162 F.E.R.C. ¶ 61,205 (2018).

²³ See *South Carolina Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 52 (D.C. Cir. 2014).

²⁴ *Supra*, n.19.

²⁵ 425 U.S. 662 (1976).

²⁶ *San Diego Gas & Elec. Co. v. Sellers of Energy and Ancillary Services*, 93 F.E.R.C. ¶ 61,121 at 61,379 (2000).

²⁷ *ISO New England Inc.*, 164 F.E.R.C. ¶ 61,003 (2018) (finding tariff unjust and unreasonable because it fails to address fuel security); *ISO New England Inc.* 171 F.E.R.C. ¶ 61,235 (2020) (accepting tariff revisions aimed at addressing fuel security issues).

²⁸ For further discussion of the Commission's authority to advance grid resilience through ratemaking under FPA sections 205 and 206 see Schneider, Trotta, *What We Talk About When We Talk About Resilience*, 39 Energy Law Journal, 353, 384-387 (2018), [http://www.eba-net.org/assets/1/6/17-353-400-Schneider_\[FINAL\].pdf](http://www.eba-net.org/assets/1/6/17-353-400-Schneider_[FINAL].pdf).



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MARKET-BASED RATES IN THE WESTERN ENERGY IMBALANCE AND EXTENDED DAY-AHEAD MARKETS

- BY DAVID HUNGER, EDO MACON, GORAN VOJVODIC AND ALEXIA DUPUIS

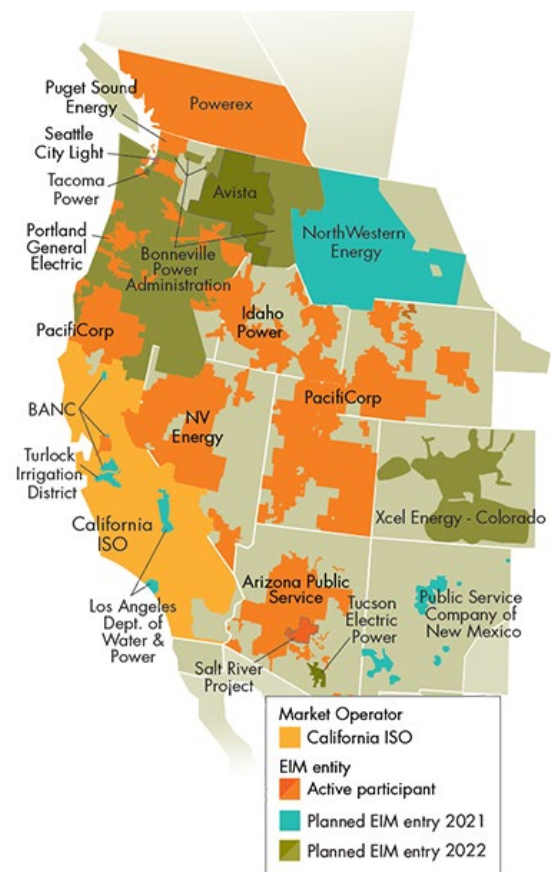
The Western Energy Imbalance Market (EIM) has grown from two Balancing Authority Areas (BAAs) in 2014—the California Independent System Operator (CAISO) and PacifiCorp—to eleven participating BAAs in 2020, with nine more planning to join by 2022. CAISO and the EIM entities are working on developing an Extended Day Ahead Market (EDAM). EDAM would cover the day-ahead energy market, which accounts for the majority of the load in CAISO. This article will discuss the evolution of market-based rates in the Western EIM and what that evolution suggests for considering market-based rate issues in the Western EDAM.

Market Description

CAISO uses its real-time market to dispatch imbalance energy to meet the difference between real-time demand and generation scheduled in CAISO's day-ahead market and the EIM entities' balanced base schedules. In other words, imbalance energy for CAISO is based on the difference between day-ahead and real-time actual generation and demand; whereas, imbalances for EIM entities are based on the differences between the balanced base schedules for generation and demand and actual quantities. CAISO's real-time market dispatches this imbalance energy on a fifteen-minute and five-minute basis through its fifteen-minute unit

commitment and five-minute dispatch, respectively. Each run of CAISO's real-time market simultaneously determines the necessary output of dispatchable resources to meet forecasted net load over multiple intervals, not just in the next "financially binding" interval.

Active and Pending Participants in the Western Energy Imbalance Market (Source: CAISO)



Courtesy: CAISO

EIM: Defining the relevant product and geographic market

In 2015, the Federal Energy Regulatory Commission (FERC or Commission) restricted entities outside of the CAISO footprint to submitting only cost-based offers in the EIM due to concerns that the sellers might exercise horizontal market power.¹ Since then, seven entities have been authorized to sell at market-based rates (MBR).² FERC's review has focused on an MBR Seller's ability and incentive to economically or physically withhold output in the EIM in order to drive up the market price. The analysis has focused on the presence of sufficient transmission and the lack of persistent transmission constraints between CAISO and the other participating BAAs. In other words, does any BAA or group of BAAs become an "island" isolated from the rest of the EIM footprint? Through a series of cases, FERC established a framework for determining whether or not a seller had market power and could be granted MBR authorization for the EIM.³ As with any market power analysis, the first step in FERC's analytical framework is defining the relevant product and geographic market.

Relevant Product

The relevant product in the EIM MBR screens is not total energy or capacity, as is the case in FERC's traditional MBR screens,⁴ but only imbalance energy. The need for imbalance energy stems from two sources: (1) the additional actual, or realized, demand for electricity in excess of the scheduled quantity (Imbalance Demand), and (2) the shortage in actual generation from

renewable resources, which are intermittent and therefore characterized by an uncertain output, compared to the expected, or scheduled, quantity.⁵ There is also the question of which generating resources constitute the potential supply of imbalance energy. For resources located within CAISO, those resources that participate in the real-time markets are also designated as EIM Participating Units. For resources located in BAAs outside of CAISO, EIM Participating Resources include generators that are registered to participate in the EIM, have the appropriate technical capability and telemetry as required by CAISO, and are capable of supplying imbalance energy. More specifically, the supply available for CAISO real-time dispatch consists of the *residual* capacity of non-wind and non-solar EIM Participating Resources and CAISO Participating Units. The residual capacity represents the capacity in excess of day-ahead or base schedules.

Relevant Geographic Market

The EIM footprint currently covers the CAISO footprint and eleven separate BAAs in the West, five of which are directly interconnected with CAISO (PacifiCorp-West, NV Energy, Arizona Public Service, Balancing Authority of Northern California, and Salt River Project) and six of which are second-tier to CAISO (PacifiCorp-East, Puget Sound Energy, Portland General Electric, Powerex, Idaho Power Company, and Seattle City Light). The market definition turns on whether there is persistent congestion that would isolate one BAA or a set of BAAs from CAISO and the rest of the EIM footprint. The EIM

pricing data lends itself to an accurate market definition based on historical congestion. Congestion has both physical and financial elements. The presence of congestion is a physical phenomenon, occurring when there are lower cost supplies that are physically unable to reach the relevant market due to transmission limitations. That element of congestion is characterized by a difference in market clearing prices in any pair of BAAs and it is registered in the historical market data. The financial impact of congestion is measured by the magnitude of the price difference.



In 2017, the Berkshire Hathaway MBR Sellers (PacifiCorp and NV Energy) provided an analysis focusing on the number of congested intervals and the level of price separation in those congested intervals.⁶ The analysis showed congestion in 0.7 – 2.4% of the fifteen-minute intervals and 0.3 – 6.2% of the five-minute intervals.⁷ In terms of price separation, the analysis showed a positive spread of \$5/megawatt (MW) hour or more in 0.4 – 1.5% of the fifteen-minute intervals, and 0.1 – 2.4% of the five-minute intervals —

indicating that none of the three BAAs, nor any combination of those BAAs, should be considered a submarket separate from the broader EIM footprint.⁸ PacifiCorp and NV Energy concluded that the entire EIM footprint should be considered the relevant geographic market for the purpose of determining the market shares and the Commission agreed.⁹

A different methodology has been used in cases where historical EIM pricing data are not available to identify and quantify congestion. For example, in July 2016, Puget Sound Energy filed an analysis with the Commission that was based on the amount of EIM-dedicated transfer capacity connecting the Puget Sound Energy BAA to the rest of the EIM, relative to the estimated EIM demand in the BAA. The analysis showed that there was on average 43.2 MWs of Imbalance Demand and, in all but 18 of the 35,040 fifteen-minute intervals in the year-long study period, the demand for imbalance energy was expected to be less than the 300 MWs of transmission capacity dedicated to the EIM. Based on this analysis, Puget Sound Energy argued that its BAA should not be treated as a submarket but, rather, should be considered to be part of the entire EIM footprint. The Commission agreed with that approach.¹⁰

EDAM: Defining the relevant product and geographic market

The goal of the EDAM is to “improve market efficiency by integrating renewable resources using day-ahead unit commitment and scheduling across a larger area.”¹¹ To achieve an efficient market, the sellers in the

EDAM will need to participate with MBR authorization. To analyze eligibility for MBR authorization in the EDAM, the same basic questions that are relevant with respect to the EIM would apply: what is the relevant product and would persistent congestion isolate a BAA, or groups of BAAs, from the rest of the market?

Relevant Product

As the name implies, the product in EDAM is Day-Ahead energy.¹² As with the EIM, the resources that are available to participate in the EDAM need to be identified. Unlike the EIM, the EDAM is not currently operative, so identifying the units that will be included in the new market is dependent in part on the requirements that will be agreed upon in the stakeholder process and ultimately approved in the future tariff. According to the publicly available information, the “Qualifying Supply”—consisting of resources both inside and outside of the CAISO footprint—will need to be established.¹³ This set of resources will constitute the “denominator” when calculating market shares of the

“As with the [Energy Imbalance Market], there is the prospect of significant efficiency gains from market-based participation in the [Extended Day Ahead Market].”

individual sellers for the purpose of the MBR analysis.

Relevant Geographic Market

In terms of the relevant geographic market, historical congestion data will not be available for EDAM as it has been for the EIM. For the traditional

MBR screens, the Commission uses the individual BAA as the default market and simultaneous import limit (SIL) studies for the defined BAA.¹⁴ The SIL does not appear to be the relevant congestion measure for the geographic market definition in the EDAM because the SIL limits the amount of imports into a BAA once it has been determined that a given BAA is the relevant geographic market. The question will be whether a BAA or a set of BAAs should be considered a separate market or part of the broader EDAM footprint. One way to analyze the likelihood of congestion is to look at available transmission capacity relative to the demand and supply of energy for the EDAM for a given BAA or set of BAAs as in the Puget Sound Energy methodology described above.

Conclusion

As with the EIM, there is the prospect of significant efficiency gains from market-based participation in the EDAM. FERC has established a framework for analyzing whether sellers could have market power in the EIM, and that framework can be useful in analyzing the EDAM in order to grant MBR authority.

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¹ *Nevada Power Company et al.*, 153 F.E.R.C. ¶ 61,206 at P 51 (2015).

² Those entities are PacifiCorp, NV Energy, Portland General, Arizona Public Service, Idaho Power, Puget Sound Energy, and Powerex. *See, e.g.*, Robert Mullin, *PacifiCorp, NV Energy Gain EIM Market-Based Rate Authority*, RTO Insider (Nov. 13, 2017), <https://rtoinsider.com/pacifiCorp-nv-energy-market-based-rate-authority-79122/>; *FERC Accepts Puget Sound Energy's EIM Filing and Authorizes Market-Based Rate Transaction Ability*, Transmissives (Oct. 10, 2016), <https://transmissives.com/2016/10/10/ferc-accepts-puget-sound-energys-eim-filing-and-authorizes-market-based-rate-transaction-ability/>.

³ *See, e.g.*, *Nevada Power Company, et al.*, 161 F.E.R.C. ¶ 61,117 (2017); *Arizona Public Service Company*, 164 F.E.R.C. ¶ 61,169 (2018); *Puget Sound Energy, Inc.*, 156 F.E.R.C. ¶ 61,242 (2016).

⁴ *See Market-Based Rates for Wholesale Sales of Elec. Energy, Capacity & Ancillary Servs. by Pub. Utils.*, Order No. 697, 119 F.E.R.C. ¶ 61,295, *clarified*, 121 F.E.R.C. ¶ 61,260 (2007), *order on reh'g*, Order No. 697-A, 123 F.E.R.C. ¶ 61,055, *clarified*, 124 F.E.R.C. ¶ 61,055, *order on reh'g*, Order No. 697-B, 125 F.E.R.C. ¶ 61,326 (2008), *order on reh'g*, Order No. 697-C, 127 F.E.R.C. ¶ 61,284 (2009), *order on reh'g*, Order No. 697-D, 130 F.E.R.C. ¶ 61,206 (2010), *aff'd sub nom. Mont. Consumer Counsel v. FERC*, 659 F.3d 910 (9th Cir. 2011), *cert denied*, 567 U.S. 934, 133 S. Ct. 26, 183 L. Ed. 2d 676 (2012)).

⁵ The *imbalance* may occur in either direction for these two sources of imbalance energy (e.g., the *actual* renewable generation can either be greater or less than the *expected* renewable generation). However, it is more likely that a market participant will take advantage of conditions of high demand to exercise market power. Because, in this article, we discuss market power, we focus on situations

where either a surplus demand, a shortage in renewable generation, or both occur.

⁶ *Nevada Power Company, et al.*, 161 F.E.R.C. ¶ 61,117.

⁷ *Id.* at P 22. Congestion was identified for each of the three BAAs (PacifiCorp-East, PacifiCorp-West, and Nevada Energy) by the presence of any positive price separation between the BAA and CAISO, as indicated by a positive shadow price on the power balance constraint for the BAA.

⁸ *Id.* at P 23.

⁹ *Nevada Power Company, et al.*, 161 F.E.R.C. ¶ 61,117 at PP 16 – 23.

¹⁰ *Puget Sound Energy, Inc.*, 156 F.E.R.C. ¶ 61,242 at PP 11-12.

¹¹ California ISO, Initiative: Extended Day-Ahead Market, CAISO (Oct. 3, 2019) <http://www.caiso.com/StakeholderProcesses/Extended-day-ahead-market>.

¹² CAISO explains that “[t]he day-ahead market is made up of three market processes that run sequentially.” *See id.* First, the ISO runs a market power mitigation test. Bids that fail the test are revised to predetermined limits. Then the integrated forward market establishes the generation needed to meet forecast demand. And last, the residual unit commitment process designates additional power plants that will be needed for the next day and must be ready to generate electricity. Market prices set are based on bids.

¹³ CAISO Stakeholder Process Update: Day-Ahead Market Enhancements and Extended Day-Ahead Market Initiatives (Apr. 16, 2020).

¹⁴ In RTOs, the RTO is the default relevant geographic market, but the Commission also looks at frequently congested areas within the RTO as a separate relative geographic market. Examples include the PJM-East, 5004/5005 and AP South submarkets in PJM and Zones J and K (NY City and Long Island) in the NYISO.

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