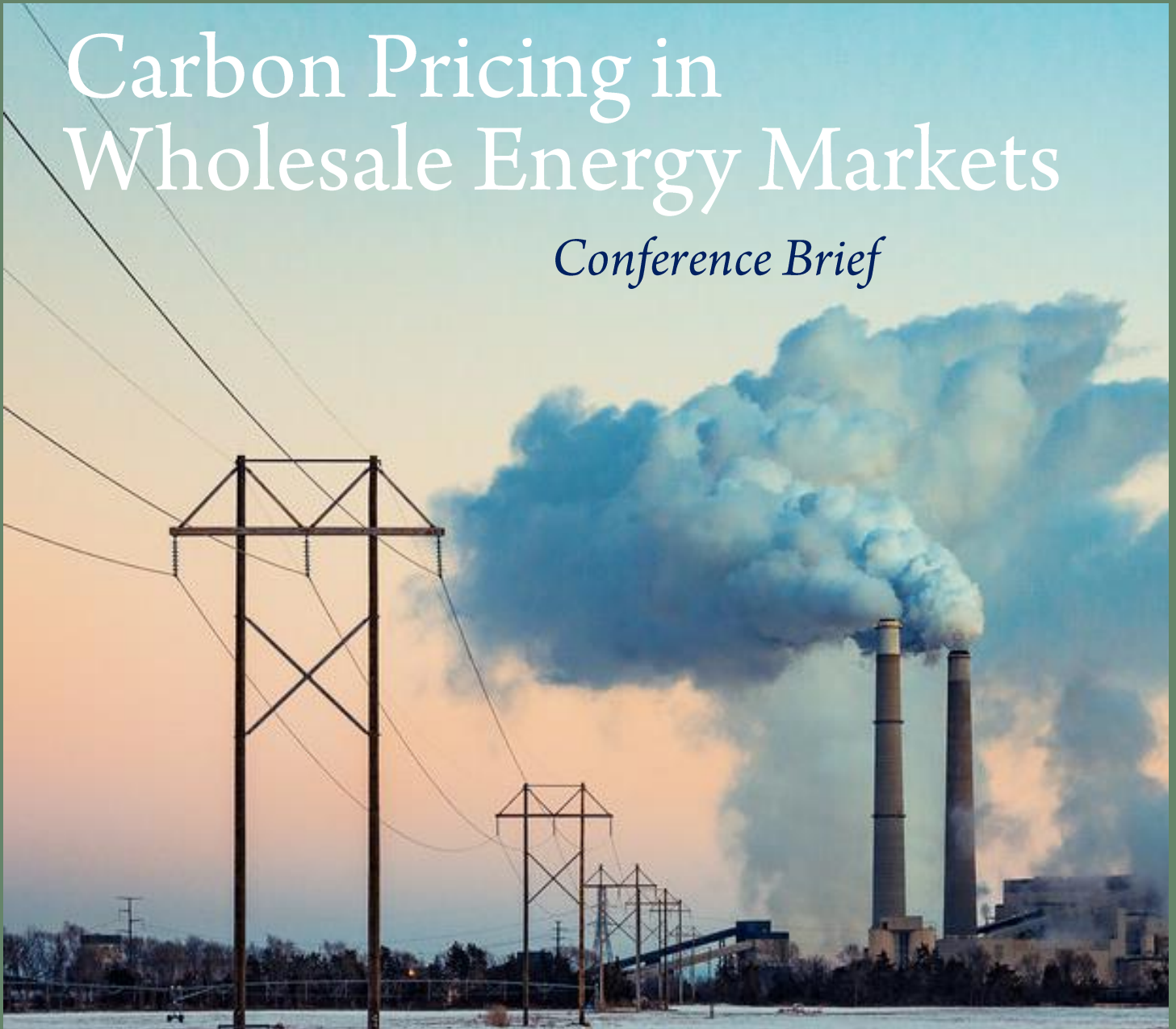


Institute for
Policy Integrity
NEW YORK UNIVERSITY SCHOOL OF LAW



Carbon Pricing in Wholesale Energy Markets

Conference Brief



Summary of March 3, 2020 Conference

Carbon Pricing in Wholesale Energy Markets: Conference Brief

With some states advancing climate policies with ambitious clean energy targets, wholesale energy market operators are grappling with questions about if and how electricity markets should evolve as a response. Well-designed carbon-pricing rules can improve economic efficiency and play a role in the clean energy transition. Several organized bulk market operators are looking to change their market rules to include carbon pricing, but there is a diversity in approaches.

The Institute for Policy Integrity at NYU School of Law and the Nicholas Institute for Environmental Policy Solutions at Duke University convened a conference on March 3, 2020, to discuss current, and potential future, approaches to carbon pricing in wholesale markets.¹

The discussion at the conference spanned current and proposed pricing regimes, applicable legal issues, and stakeholder perspectives on carbon pricing. Federal Energy Regulatory Commission (FERC) Commissioner Richard Glick provided introductory remarks to start the day.

In the first panel, the California Independent System Operator (CAISO), the New York Independent Systems Operator (NYISO), and the Pennsylvania, New Jersey, Maryland Interconnection (PJM)'s Carbon Pricing Senior Task Force provided case studies to serve as the basis for the following legal discussion.

The next session focused on questions related to the authority of FERC on carbon pricing. While FERC is primarily an economic regulator, well-designed carbon-pricing rules can fit within that role when they are designed to correct market failures and make markets more competitive. Yet, significant questions regarding FERC's jurisdiction, states' role, and preemption remain.

Later, former FERC Commissioner Suedeen Kelly discussed FERC's role in market evolution and lessons learned from decades of FERC experience. Finally, stakeholders explained how companion policies are needed to achieve states' goals, how capacity market reform is needed for carbon pricing to truly work, and other concerns, like energy affordability.

This brief highlights some of the major points of discussion from the conference and suggests open questions for future study. The goal of the panel discussions was to bring out different perspectives, and

¹ <https://policyintegrity.org/news/event/carbon-pricing-in-wholesale-energy-markets>

not necessarily to seek an agreement on particular policy, economic, or legal issues. As such, this brief intends to summarize different viewpoints of conference participants, and is not intended to be a consensus or recommendation document.

Introduction

Commissioner Richard Glick started the day with general remarks on carbon pricing. There are opportunities to internalize the cost (and reduce the quantity) of carbon emissions through carbon pricing at the state, regional, and federal levels. A Regional Transmission Organization (RTO) presenting a proposal to FERC for carbon pricing in its regional wholesale market will be met with the relatively low burden of proof for approval that the resulting rates be just, reasonable, and not unduly discriminatory or preferential. Thus an RTO proposing carbon pricing is an “easier sell” than having FERC itself proposing to implement a carbon-pricing rule.

Regardless of whether carbon-pricing rules are established “bottom-up,” by individual grid operators, or “top-down,” by FERC, several considerations must be taken into account. For example, the price has to be high enough to actually incentivize behavioral change. Moreover, carbon-pricing rules must be designed to complement, rather than supplant, state clean energy policies created to meet other goals such as job creation and local economic development. It is incumbent upon RTOs to build and maintain good relationships with their member states. Finally—even with advancements in energy storage technology—the success of regional or federal carbon pricing depends on our ability to site and build transmission lines.

RTO Case Studies

Some RTOs already reflect state carbon pricing policies in their market rules. Others are thinking about incorporating carbon pricing directly in their market rules, or looking at how to change their market rules in order to better accommodate state policies. The conference looked at three case studies: the carbon pricing currently in operation in CAISO’s Energy Imbalance Market; NYISO’s carbon pricing proposal; and the work of PJM’s Carbon Pricing Senior Task Force.

Emissions from energy resources serving California’s load, including imports, are subject to California’s cap-and-trade program. As a result, energy resources internal to CAISO, as well as imports into CAISO, incorporate greenhouse gas compliance costs into their bids. However, resources outside of California identify the greenhouse gas compliance costs as a separate bid component so that the cost can be excluded whenever those resources are dispatched to serve non-California load. The actual greenhouse gas cost added is resource-specific if such is possible to identify, or based upon a regional emissions average if not.

Because the Energy Imbalance Market is a voluntary real-time market, non-California facilities must opt in to be considered in dispatch. This creates a potential emissions leakage problem. Low-emissions resources outside of California may opt to bid into the California market, while demand outside of that state could be backfilled with higher emitters that would be placed at a competitive disadvantage in CAISO's dispatch order. The California Air Resources Board, which governs the state's cap-and-trade policy, attempted to create a state-based border adjustment to address leakage, but it has proven technically and legally challenging. The design of the greenhouse gas cost component has evolved through multiple iterations since the start of the Energy Imbalance Market, for example by moving to the use of more granular daily greenhouse gas costs.

On the other side of the country, the New York ISO has proposed a market design to incorporate the cost of carbon emissions directly into its dispatch. After extensive analysis, NYISO has determined that carbon pricing would provide a market-oriented approach to bridge state policies and the NYISO markets, and provide transparent price signals reflecting carbon externalities. With the proposed rule, individual generators would submit offers into the market inclusive of their carbon charge. This carbon charge would reflect the social cost of carbon as determined by the New York Public Service Commission. Most of the carbon charge would be returned to consumers, directly offsetting half of the increase in consumers' energy bills. NYISO's carbon pricing proposal is seeking support from New York State, and ultimately must be approved by stakeholders, the NYISO Board of Directors, and FERC.

PJM, whose wholesale market spans all or parts of 13 states and the District of Columbia, maintains that carbon pricing is an environmental issue that falls outside of its purview, which it sees as ensuring reliability. While PJM will not be proposing carbon-pricing rules (beyond what states already have) in the immediate future, PJM's Carbon Pricing Senior Task Force is considering market design changes given member states' clean energy policies.

PJM has modeled the impact of existing programs like the Regional Greenhouse Gas Initiative (RGGI) and different carbon prices. Its modeling assumes a carbon-price sub-region within PJM's footprint based on RGGI participation as some but not all member states have joined the regional cap-and-trade program. It further analyzes if one-way border adjustment that addresses only imports or two-way border adjustments that addresses both imports and exports can help solve potential leakage problems. Compared to a counterfactual with no carbon price, PJM's task force found that RGGI would successfully decrease emissions in the carbon-price sub-region at the expense of increasing emissions across the rest of the RTO's footprint. A border adjustment can decrease emissions in the rest of the RTO, but it increases emissions in the carbon-price sub-region. With member states across the political spectrum and with very different generation profiles (fossil vs. renewable), PJM must strike a balance between its stated mission of ensuring reliability and some of its member states' desire to advance clean energy policy.

The question-and-answer portion of this conference session included discussions on how to address proceeds from carbon pricing, whether to focus on energy or capacity markets, and the impacts of price signals and investment.

NYISO, CAISO, and PJM again provide different case studies for what to do with proceeds from a carbon-pricing scheme. While NYISO's proposal would return revenue to consumers, it concedes that, in economic terms, since consumers are a party to the transaction that design may not technically be addressing externalities. CAISO redistributes revenue to directly remedy harms. And, PJM modeled a carbon adder where the residuals would go to member states, leaving each state to determine how it wants to distribute the money.

When it comes to the question of whether to price carbon in the energy or capacity market, speakers agreed that the focus, at least right now, should be on the energy market. However, activity in the energy market affects the capacity market, so analysis of a carbon-pricing scheme must always include estimates of that impact as well.

Finally, how to determine the marginal resource remains an open question. When the dispatch order is changed, are "dirty" or "clean" electrons displaced?

Legal Issues Surrounding Carbon Pricing in Organized Wholesale Markets

Several thorny legal issues arise when trying to implement a carbon price in a wholesale market. First, there are jurisdictional questions – what can FERC do, given the authorities reserved to the states by the Federal Power Act? The CAISO has integrated California's carbon pricing into that market, and New York ISO is working with the State of New York to design a carbon price. But does FERC's authority extend to directly pricing carbon pollution from generators participating in a wholesale market (under Federal Power Act Section 206), or to approving wholesale market tariffs that establish such a price (under Section 205)?²

FERC is a "creature of statute" and so bound by the authority Congress granted it. Under the Federal Power Act, Congress empowered FERC to regulate public utility rates and charges, and any rules and regulations affecting those rates and charges, to ensure that they are just and reasonable and not unduly discriminatory.

² A decision under Section 206 requires FERC to first find that an existing rate is "unjust" and "unreasonable" and that imposition of a carbon price would make that rate "just and reasonable", whereas under 205, FERC only needs to determine if a rate is "just and reasonable" to approve an RTO's proposed carbon price.

Historically, FERC has taken the position that environmental matters are outside of its scope of authority, which is largely economic in nature. FERC lawyers and others point to language in the *Grand Council of Crees v. FERC*, a D.C. Circuit Court case from 2000, to support the notion that FERC must steer clear of environmental regulation. However, the case involved a much longer causal chain between the FERC-regulated rate and the possible environmental and cultural harm – the indirect effects of possible future hydro-electric generation. The case also reflected a time marked by fewer electricity competitors and consumers who were far less willing to pay a premium for “cleaner” electrons. Environmental impact is now a value reflected in the marketplace and a basis for competition for consumers.

In fact, FERC (or an RTO) might rely on purely market-based justifications to introduce carbon pricing. For instance, FERC might act to remove the market failure of an unpriced externality. Alternatively, FERC could use a carbon price to harmonize (by monetizing) market operations with out-of-market state clean energy and climate policies.³ In both cases, FERC may be able to rely on its “just and reasonable” authority and remain firmly in its lane as economic regulator. It may be safer for FERC or a FERC-jurisdictional market to “import” a carbon price established by a state or a third party, than for it to wade into an accounting of environmental cost.

Second, if FERC or a FERC-jurisdictional market acts, and sets a carbon price, would that action preempt future state carbon pricing or proxy policies? The preemption analysis—the analysis of a state’s power in light of the Federal Power Act (FPA)—is different from other statutes that explicitly displace state power or do not speak to state power. The FPA was enacted to fill a gap in state authority – to regulate cross-border sales of electricity. It was not intended to supplant traditional state authority over generating facilities and all sales but sales for resale.

Supreme Court case law requires a clear statement of authority to preempt action in an area of traditional state regulation. The statute grants FERC authority over rules and regulations that “affect” electric sales for resale; the Supreme Court has defined this to mean that a state’s rule must directly affect a wholesale market to violate the FPA. In other words, state rules with an incidental effect on wholesale rates are within state authority. That said, participants raised a number of scenarios where FERC could effectively negate state climate policy, for instance through a broad Minimum Offer Price Rule (MOPR) or a universally applied low carbon price that “occupies the field” of carbon pricing for wholesale electricity rates.

Lessons from the CAISO-Energy Imbalance Market – again, the only current example of a FERC-approved wholesale market carbon price – may be applicable to multi-state RTOs in the east. In addition

³ This harmonization could relate to dispatch of energy as well as to investment signals for future capacity.

to technical hurdles of traceability, there are legal issues related to imposing border adjustments between states with differing policies and politics. In particular, if the states are imposing adjustments, they must navigate the constraints of the Dormant Commerce Clause. (By contrast, an RTO would not likely be so constrained.) Those constraints prohibit states from discriminating against imported products that are similar, and from regulating “extra-territorially” to reach wholly out-of-state transactions. Even if a state policy clears those hurdles, the putative benefits of its policy must not be outweighed by an undue burden on interstate commerce.

The legal issues raised by carbon pricing in the bulk power markets are complex and draw on the expertise of three distinct communities: air quality agencies and environmental nongovernmental organizations, which have extensive experience around the Dormant Commerce Clause; FERC attorneys who know the Federal Power Act; and environmental economists who can help with the price-setting and design features of a price. Ultimately, all three types of experts are needed to hammer out effective and legally defensible carbon pricing schemes.

The Role of FERC

Former FERC Commissioner Suedeen Kelly gave the lunch keynote on FERC’s role in market transitions and provided insights from decades of FERC history. FERC’s job is to be an economic regulator and solve market failures, such as monopoly. Carbon-dioxide emissions are an externality, another type of market failure.

The Federal Power Act has stood the test of time, accommodating industry-changing reforms, such as when FERC restructured the electricity industry in 1996. It is written in a way that enables the electricity industry to evolve with the times. Carbon pricing solves a market failure by internalizing an externality related to carbon-dioxide emissions; with the right political will, FERC and grid operators might use Sections 205 and 206 to impose this pricing. The path of least resistance might well be for RTOs to petition FERC under Section 205, and to demonstrate that it is just and reasonable and not unduly discriminatory or preferential to price carbon.⁴

In fact, approving such a petition advances FERC’s existing policies of incorporating costs. Since the 1990s, when FERC allowed the replacement costs of SO₂ allowances to be included in rates, FERC has implicitly recognized that emissions are a legitimate regulatory concern that has costs associated with it. While, it is a little different when there is a federal or a state program that is imposing a cost that power

⁴ Another pathway that was discussed in the legal panel was that, once multiple RTOs have carbon pricing, FERC can step in and issue an order under Section 206 because having some markets with carbon pricing and some without could be considered unjust and unreasonable.

plants need to include, an RTO asking for a carbon adder in dispatch is consistent with that precedent of incorporating costs. And there is a plethora of literature explaining how there are quantifiable costs associated with carbon-dioxide emissions.

Pricing carbon through the wholesale energy markets under FERC's jurisdiction may be the most efficient way to achieve emissions reduction goals, absent a federal emissions reduction mandate. Additionally, carbon pricing in wholesale markets could solve many of the market rule dilemmas that RTOs and FERC are facing now, such as PJM's MOPR order.

Stakeholder Perspectives

State, industry, and environmental stakeholders see both opportunities and drawbacks of using carbon pricing as a lever to achieve emissions reduction goals.

Companion policies are likely still needed to achieve states' climate goals; not all state clean energy policies that could be affected by wholesale market carbon pricing are designed solely to reduce emissions. For example, some state policies that advance clean generation are also meant to create jobs or reduce emissions of local pollutants. Also, what is done with the revenue generated through carbon pricing can make a big difference on overall efficiency and equity outcomes.

At the same time, wholesale market carbon pricing alone most likely does not create enough pressure to meet ambitious state emissions reduction goals. In fact, many state policies impute a much higher carbon price than what is likely to be proposed and/or approved for wholesale markets. Further, some state goals and policies affect not just the electricity market but also other sources of emissions, like buildings and transportation sectors, which raises the issue of whether a sector-specific price on carbon is enough. In short, decisionmakers need to consider how state climate and clean energy policies and wholesale market carbon pricing can affect each other and understand how to make these types of policies complementary and mutually reinforcing.

Before carbon pricing through wholesale energy markets can be effective, these markets may require broad design changes. A price on carbon would fundamentally change the market by changing the dispatch outcomes, favoring resources with lower emissions over those with higher emissions. At the same time, because it will change energy market revenues, it will also lead to changes in capacity market outcomes, and, hence, the generation mix. Therefore, decisionmakers need to think about what sort of supply stack is compatible with those changes; there needs to be a balance between attracting new, cleaner resources and grid reliability.

As noted in the session on legal issues, some stakeholders are also concerned about preemption creating a potential roadblock for carbon pricing in organized wholesale markets. There are also stakeholder

concerns about how carbon pricing affects energy affordability for customers. But the Electric Reliability Council of Texas (ERCOT), the grid operator for Texas, provides a potential example for how a participatory demand-side can alleviate some of the concerns surrounding price volatility.

Aside from structural barriers in market design and political economy issues, there is the possibility that carbon pricing will not generate enough build-up of clean resources, causing people—customers and decisionmakers alike—to lose faith in the efficacy of carbon pricing as a tool to reduce greenhouse gas emissions. For the above reasons, questions remain about whether putting a price on carbon in wholesale energy markets adequately addresses long-term goals. But regional, coherent pricing schemes following necessary wholesale market reforms can generate enough support to try.

Conclusion

Beyond the discrete economic, legal, and implementation questions, conference participants voiced a desire to get out from under the market battles of the day, to take the long view, and to talk across political boundaries, ideological divides, and the energy-environmental disciplines to forge a mid-century vision for our grid and to decide what it will take to get there.

In other words, with the ever-approaching deadline to take climate action, the time to have a dialogue on RTO carbon pricing is now.

For more information, contact Burcin Unel – burcin.unel@nyu.edu

Institute for Policy Integrity
New York University School of Law
policyintegrity.org

Nicholas Institute for Environmental Policy Solutions
Duke University
nicholasinstitute.duke.edu