

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

State Policies and Wholesale Markets Operated by
ISO New England Inc., New York Independent
System Operator, Inc., and PJM Interconnection,
L.L.C.

Docket No. AD17-11-000

PRE-TECHNICAL CONFERENCE COMMENTS OF EXELON CORPORATION

Exelon commends the Commission for opening a dialogue on how wholesale markets should evolve in light of state environmental priorities. In Exelon's view, the Commission could take one of two main approaches.

First, the Commission could continue to operate wholesale market auctions that select resources according to least-cost principles, against a backdrop of state environmental policies that address the environmental externalities of electric generation by altering the economics of generators based on their level of emissions. States have adopted a wide variety of such programs, including renewable energy credit (REC) trading programs to support state renewable portfolio standards, carbon cap-and-trade programs such as the Regional Greenhouse Gas Initiative (RGGI), and the zero-emission credit (ZEC) programs recently created by New York and Illinois, which value the environmental attributes of nuclear power. Each of these state programs addresses the environmental externalities of electric generation by penalizing pollution or promoting clean energy production. Historically, the Commission's wholesale markets have been agnostic as to environmental externalities, and states have decided for themselves how, and whether, to address them. The Commission could continue that course, while leaving open the possibility of future market reforms if there is evidence that competitive generation investment is inadequate to ensure reliability.

Second, the Commission could allow independent system operators (ISOs) or regional transmission organizations (RTOs) to file tariffs that integrate states' environmental goals into the wholesale market. ISOs and RTOs could do so in a number of different ways, ranging from a centralized procurement of environmental attributes identified by the states to the inclusion of a carbon or pollution adder in wholesale energy bids. ISOs and RTOs could also craft a combination of these two main approaches, integrating state environmental goals in part, while leaving states free to pursue different or more stringent environmental goals in the way states currently do and always have done. Section 205 of the Federal Power Act grants the Commission the authority and flexibility to accept ISO or RTO tariff revisions implementing these integrative solutions.

The Commission may not, however, undermine or interfere with states' ability to achieve their environmental goals. State environmental programs fall comfortably within the states' inherent police powers and relate to states' core sovereign interests in protecting the health and safety of their citizens.¹ If the Commission requires states to forgo their sovereign power to make their own environmental policy

¹ *Huron Portland Cement Co. v. City of Detroit*, 362 U.S. 440, 442 (1960); *Exxon Mobil Corp. v. U.S. EPA*, 217 F.3d 1246, 1255 (9th Cir. 2000); *Nat'l Solid Wastes Mgmt. Ass'n v. Killian*, 918 F.2d 671, 676 (7th Cir. 1990), *aff'd sub nom. Gade v. Nat'l Solid Wastes Mgmt. Ass'n*, 505 U.S. 88 (1992).

as the price of admission to the federal wholesale markets, states may rethink their participation in these markets. The Commission should avoid forcing states to make such a choice.

I. The Commission’s Wholesale Markets Can Continue to Coexist in Harmony With State Environmental Initiatives.

The Federal Power Act reserves for states the authority to regulate generation facilities,² and the Commission has already affirmed that states may support particular generation resources that advance states’ legitimate policy interests, including environmental protection. The Commission has found that states “may ... grant loans, subsidies[,] or tax credits to particular facilities on environmental or policy grounds,”³ and may “encourage renewable or other types of resources ... by giving direct subsidies,” even when doing so “allow[s] states to affect the [wholesale] price.”⁴ Indeed, states are “free” to incentivize clean generation in these ways “even if the price signals in the regional wholesale capacity market indicate that [those] resources are [not] needed.”⁵ Responding to these precedents, states in the Eastern RTOs have adopted a variety of programs that favor clean generation, including REC/ZEC programs, carbon cap-and-trade programs, state-directed bilateral procurements, and tax and development incentives. Moreover, with respect to REC programs and other renewable subsidies, there is no natural ceiling constraining the size of these programs.⁶ Particularly as storage technology improves, states can be expected to mandate that an ever-growing share of their generation fleets consists of renewable resources. New York has set its goal to have half its electricity generation come from renewable resources by 2030, and other states have likewise set aggressive goals.⁷ The Commission has modified its rules to accommodate these initiatives, by exempting new renewables from minimum offer price rules that otherwise apply to new entrants and by approving increasingly negative price floors to enable sellers to realize the full value of their environmental attribute payments.⁸

Illinois and New York have recognized that existing nuclear facilities provide significant environmental value to their states by displacing carbon and air pollution that would otherwise occur if these plants retired and were replaced by fossil fuel generation. Like the environmental benefits of renewable generation, the environmental benefits of nuclear generation are not addressed by the wholesale markets; instead, states have been left to address those issues.

² 16 U.S.C. § 824(b).

³ *Cal. Pub. Utils. Comm’n*, 133 FERC ¶ 61,059, at P 31 n.62 (2010).

⁴ *S. Cal. Edison Co.*, 71 FERC ¶ 61,269, 62,080 (1995).

⁵ U.S. Amicus Br. at 33, *Hughes*, 136 S. Ct. 1288, 2016 WL 344494. Commission precedent is consistent with that of federal courts. *Entergy Nuclear Vt. Yankee, LLC v. Shumlin*, 733 F.3d 393, 417 (2d Cir. 2013); *Conn. Dep’t of Pub. Util. Control v. FERC*, 569 F.3d 477, 481 (D.C. Cir. 2009) (states may “require retirement of existing generators, [require construction of] expensive, environmentally-friendly units, or ... take any other action in their role as regulators of generation facilities,” even though “those choices ... affect[] the [wholesale] market clearing price”).

⁶ Indeed, in all of the Eastern RTOs, the amount of state-supported renewable generation and rate-regulated generation in 2025 will exceed by a significant margin the amount of ZEC-supported generation, based on current renewable targets. *See* Exhibit A.

⁷ Illinois’ renewable energy targets roughly double between 2017 and 2025 to 25 percent of load. *See* 20 ILCS 3855/1-75(c)(1)(B) (eff. June 1, 2017). Massachusetts has set a renewable energy target of 28.6% by 2030, Mass. Gen. Laws ch. 25A § 11F; 225 C.M.R. § 15.07. Other New England states seek to procure similar quantities. *See generally* www.dsireusa.org.

⁸ *California Indep. Sys. Operator Corp.*, 145 FERC ¶ 61,254, at PP 5, 34 (2013) (approving CAISO proposal to lower its “bid floor” in the energy markets “from negative \$30/MWh to negative \$150/MWh” in order to permit “variable energy resources” to submit bids accounting for “production tax credits, renewable energy credits, and contractual energy payments”); *ISO New England Inc.*, 146 FERC ¶ 61,084, at P 32 (2014) (rejecting argument that REC revenues are out-of-market, and approving reduction of ORTP for new renewable resources to account for REC revenues).

The environmental problem addressed by ZEC programs is both clear and urgent. When a nuclear facility retires, it cannot feasibly be replaced by renewable generation in the time necessary to avoid a spike in emissions. Instead, it will be replaced predominantly by fossil fuel-fired plants emitting significant carbon and other air pollution. Germany's and California's recent experiences illustrate the problem. After Germany prematurely retired its nuclear fleet, it saw a massive increase in emissions despite investing in new renewable generation to such a degree that its electricity rates are now among the world's highest. In California, the closure of the San Onofre nuclear plant in early 2012 resulted in an increase in emissions that more than offset all of California's investment to date in wind, solar, and biomass generation.⁹ New York similarly found that replacing its nuclear fleet would require that it triple its already-aggressive energy efficiency targets or construct "9,000 MW of onshore wind or 22,000 MW of solar," which "is virtually impossible to deploy . . . in the short-term."¹⁰ By valuing at-risk nuclear plants' environmental benefits, ZEC programs provide a necessary bridge that allows states to decarbonize their electricity sector consistently and cost-effectively over time.

ZEC programs, like other state environmental programs including REC programs,¹¹ complement the efficiency of FERC's wholesale markets by addressing the environmental externalities that result from generation. Fossil-fuel generation emits pollution, a negative externality. The private cost of generating electricity using fossil fuels is therefore much lower than the social cost, and the market outcome is accordingly unlikely to be efficient. Because of this distortion, wholesale market prices create the appearance that at-risk nuclear units are not efficiently competitive, but that appearance is misleading: at-risk nuclear units are competitive once the environmental benefits they provide to society are considered. Basic economics teaches that a tax or subsidy could correct this market inefficiency by internalizing the negative or positive externalities of electricity generation.¹² Moreover, ZEC programs have been designed to harmonize with wholesale markets. The value of a ZEC is capped at the value of the environmental externality being abated, which the states have determined to be equal to the social cost of carbon. The programs thus are not intended to, and cannot, replace lost wholesale revenues if wholesale prices drop. Moreover, payments are made only to those generators whose environmental benefits would otherwise be lost. This is indistinguishable from REC programs, which likewise compensate renewable generators that would not be economic (and thus whose environmental benefits would not exist) but for revenues from selling renewable energy credits. And state environmental

⁹ Cal. Energy Commission, *California Energy Almanac*, available at http://www.energy.ca.gov/almanac/electricity_data/electricity_generation.html.

¹⁰ See N.Y. Pub. Serv. Comm'n, Order Adopting a Clean Energy Standard at 127, Docket No. 15-E-0302 (Aug. 1, 2016).

¹¹ The ZEC programs are modeled on the features of REC programs that make such programs fall within state jurisdiction. As the Commission has explained, a REC "certif[ies] that electric energy was generated pursuant to certain requirements and standards." *WSPP, Inc.*, 139 FERC ¶ 61,061, at P 21 (2012). RECs are therefore "separate commodities" that "are not compensation for capacity and energy." *Cal. Pub. Utils. Comm'n*, 133 FERC ¶ 61,059, at P 31 n.62. The Commission has held that when RECs are sold unbundled from capacity and energy, they fall outside the Commission's jurisdiction. *WSPP*, 139 FERC ¶ 61,061 at P 24. ZEC programs follow this well-trodden path. ZECs, like RECs, certify that electricity was produced in a particular way—by a zero-emissions nuclear facility. And ZECs are sold unbundled from any wholesale sale of electricity. Under *WSPP*, that means ZECs (like RECs) fall outside the Commission's jurisdiction.

The Commission's reasoning in *WSPP* is supported by that of the Supreme Court in *Hughes v. Talen Energy Marketing, LLC*, 136 S. Ct. 1288 (2016). *Hughes* held that a state illegally "sets an interstate wholesale rate" when it expressly conditions a state payment on completion of a wholesale sale. *Hughes*, 136 S. Ct. at 1297. A program that "does not condition payment of funds on capacity clearing the auction" would not suffer the "fatal defect" that doomed the program in *Hughes*. *Id.* at 1299. Thus, "measures" to "encourage" clean generation, "including tax incentives, land grants, direct subsidies," as well as REC and ZEC programs, fall on the permissible side of the line, because they do not condition payment on "a generator's wholesale market participation." *Id.* at 1299 (quoting Br. for Resp't 40).

¹² See Decl. of Robert Willig, attach. to Protest of Exelon Corp., No. EL16-49-000 (Jan. 30, 2017), at 8-18 ("Willig Decl.").

programs of this kind have contributed to resource adequacy and have not chilled merchant investment.¹³

Accordingly, FERC could simply maintain the status quo, in which wholesale markets optimize for resource adequacy against a backdrop in which states adopt their own environmental policies aimed at addressing the environmental externalities of generation.

II. The Commission Can Grant ISOs And RTOs Flexibility To Integrate State Policies And Wholesale Markets On A Regional Basis.

Alternatively, if the Commission chooses to create a pathway for states to achieve their environmental goals through wholesale markets, it should permit ISOs and RTOs the flexibility to integrate state goals in a manner that respects divergent state policy choices and regional priorities. Such an approach has the greatest potential to achieve both cost savings and stakeholder support, avoiding the litigation that has proliferated around these issues. The approach that receives the most support among economists is imposing a carbon price on emitting resources dispatched through the RTOs. The RTO would administer the carbon price on behalf of the states at a level agreed upon by the states to achieve their goals. Such an approach would internalize the environmental costs of carbon pollution and reward lower emitting resources, obviating the need for state programs to support such resources.

While it would be most efficient if an entire region participated, a multi-state RTO could also permit states to opt in or out to respect differing state policy choices. For example, an RTO could apply a border adjustment similar to the tariff provisions the Commission has already approved for the California ISO. Under this approach, the RTO would add a constraint that requires all load in carbon-pricing zones to be matched with an equal amount of generation across the RTO. Generators selected to serve the load in carbon-pricing zones would be charged for emissions; generators selected to serve the load in non-carbon pricing zones would not be charged. Effectively, such a border adjustment provision creates a new “carbon obligation” market that is analogous to a reserve constraint and is co-optimized with the energy market, as reserves are today. This solution will integrate states’ environmental goals efficiently and is fair to customers in neighboring states that choose not to price carbon.¹⁴ A border adjustment of this kind is necessary; otherwise, as RGGI has demonstrated, carbon-pricing states face difficulty achieving their environmental goals due to the “leakage” of emissions from non-carbon states, and consumers in non-participating states experience price increases due to the policies adopted by the carbon-pricing states.

We note that PJM, in its pre-technical conference comments, identifies a regional or subregional carbon price as its primary initiative. The NYISO is also studying the effects of such an approach, and the Integrating Markets and Public Policy effort in the ISO-NE region has examined the same concept. The Commission should encourage these efforts and, as described below, provide a forum for them to be cultivated. In addition, the Commission should encourage the RTOs to redouble their efforts on energy market price formation to ensure that all units that are needed to serve load are permitted to set LMP. Under current market rules, energy prices do not always reflect the true economic marginal cost of the resources operating on the system, which contributes to the economic challenges currently faced

¹³ In PJM, for example, the last five Base Residual Auctions have resulted in nearly 25 GW of new gas capacity. And that is despite the fact that PJM continues to have large reserve margins—22.4% in the last Base Residual Auction, compared to a target reserve margin of 16.5%. See PJM Interconnection, L.L.C., *2019/2020 RPM Base Residual Auction Results* at 1, 24, <http://www.pjm.com/~media/markets-ops/rpm/rpm-auction-info/2019-2020-base-residual-auction-report.ashx>.

¹⁴ The California ISO, along with its stakeholders, is currently evaluating enhancements to its border adjustment system that would assign a carbon obligation only to the portion of external generation that incrementally serves California load relative to a no-import baseline. If successfully implemented, this enhancement is likely to further improve the efficacy of border adjustments in reducing emission leakage and enhancing the quality of the carbon price signal. It could serve as an improved template for other RTOs in developing their own border adjustment systems.

by many nuclear resources. Correcting this flaw in price formation has the potential to more appropriately value nuclear resources' contribution to reliable operations and greatly diminish the need for additional state programs to preserve existing nuclear plants' environmental attributes.

III. Mitigating Resources Receiving Support Through State Environmental Programs Is Inappropriate And Imposes Needless Costs On Consumers.

Buyer-side mitigation rules are aimed at large buyers seeking to suppress market prices by introducing new, uneconomic supply.¹⁵ But environmental programs like ZEC programs do not fit that description. First, in ZEC and REC programs, the state is purchasing a separate environmental attribute, so ZECs and RECs are not tied to energy or capacity sales. A price-suppression mechanism would clearly condition payment on participation in the capacity market. Second, the value of a ZEC is capped at the social cost of carbon, so the ZEC program is cost-justified based solely on the state's record-based determination of its environmental benefit—unlike a price-suppression mechanism, in which the anticipated price-suppression benefits would be necessary to render the program cost-effective. ZEC facilities also still bear market risk. A price-suppression mechanism would guarantee sufficient revenues for the uneconomic supplier to remain in the capacity market. Environmental programs like ZEC programs thus are not vehicles for price suppression.¹⁶

Instead, to the extent clean energy resources are paid for their environmental benefits, they have lower going-forward costs and should be permitted to offer accordingly. Commission orders have long recognized as much. The Commission has approved the deduction of revenues from REC payments in the calculation of the offer-review trigger price,¹⁷ and has approved CAISO's proposal to lower its energy "bid floor" to permit "variable energy resources" to offer at extremely low prices because they "generally receive, in addition to market revenues ... renewable energy credits ..."¹⁸ The Commission thus has recognized that renewable resources receive significant compensation for their environmental attributes, but instead of mitigating them, it approved a change in the energy market offer rules to allow them to account for that compensation in their offers.

That makes sense. States could pursue these same ends in a number of ways, including emissions controls or an emissions tax. Yet the Commission would not mitigate the offers of clean resources that are exempt from emissions controls or taxes, even though those resources could underbid polluting resources because they are not so regulated. Nor should the Commission mitigate clean resources in the parallel situation when they could underbid polluting resources because they receive payments for their environmental services.

IV. Regional Technical Conferences Would Be the Appropriate Next Step.

The Commission has a critical role to play in supporting the evolution of wholesale markets to address the policy goals of the states. Exelon recommends that the Commission hold regional technical conferences to facilitate further discussion among states, RTOs, and stakeholders. At these conferences, FERC and its staff should be prepared to provide guidance regarding the Commission review process for any market rule changes developed. While it is clear that the Commission would prefer a negotiated solution, such negotiations may only be possible with such preliminary guidance from the Commission.

¹⁵ *N.Y. Indep. Sys. Operator, Inc.*, 122 FERC ¶ 61,211, at P 101 (2008).

¹⁶ See Willig Decl at 18-24.

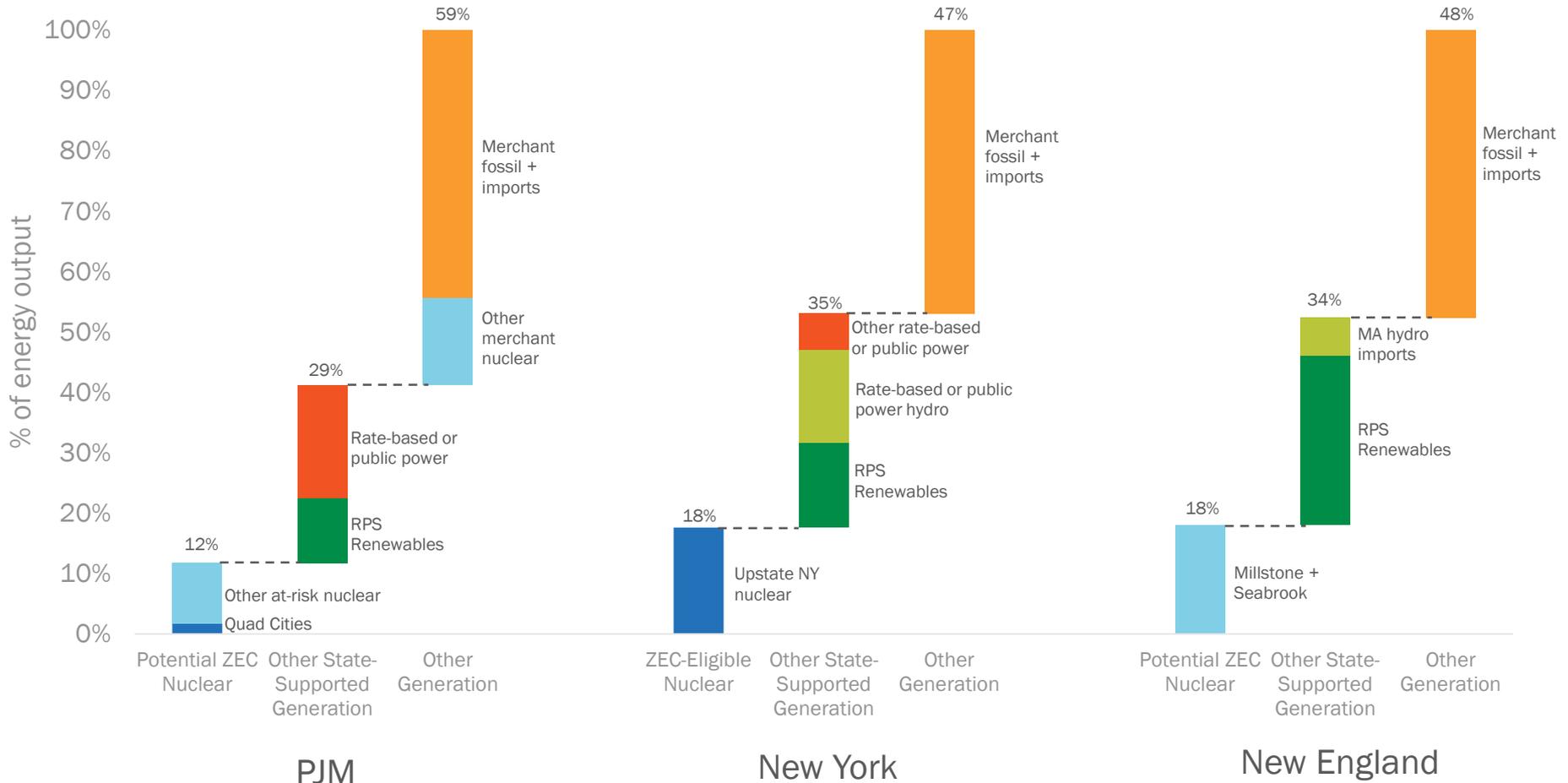
¹⁷ See *ISO New England Inc.*, 146 FERC ¶ 61,084, at P 32 (2014) (rejecting argument that REC revenues are out-of-market revenues, and approving reduction of ORTP for new renewable resources to account for REC revenues).

¹⁸ *Cal. Indep. Sys. Operator Corp.*, 145 FERC ¶ 61,254, at PP 5, 34 (2013).

EXHIBIT A

State-supported renewables and rate-based generation will be over twice as large as potential nuclear ZEC generation by 2025

Projected 2025 Generation Mix in PJM, NY, and New England



Sources: 2016 ISO-NE CELT Report; 2016 New York Gold Book; 2016 PJM Load Forecast Report; FERC Form 1 filings for investor-owned utilities in PJM and NY; Projected RPS renewables based on existing RPS legislation in various states; MA hydro imports based on 9.45 TWh clean generation procurement target specified in MA H. 4568. "At-risk nuclear" in PJM assumed to be Quad Cities, Byron, Davis-Besse, Perry, Beaver Valley, Three Mile Island, Salem, and Hope Creek.