WILKINSON BARKER KNAUER, LLP

MAY 2021

EMERGENT ELECTRICITY MARKETS
THE ECONOMIC AND ENVIRONMENTAL CASE FOR MARKETS WITHOUT RTOS

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EXECUTIVE SUMMARY

- Electricity is a necessity with unique physical properties. It is not just another commodity. Reflecting this reality, many areas of the country that purportedly rely on "markets" to regulate wholesale electricity nevertheless employ a variety of in-market and around-market approaches to support resources favored for public policy reasons and solve for unique supply and demand problems. These approaches increasingly resemble the traditional utility regulatory regime.

- The emergent market model offers a hybrid between the prescribed RTO wholesale market and the traditional vertically integrated utility. Many areas of the country with traditional utility regulation are moving in this direction, and areas with prescribed RTO markets for wholesale electric power should consider it too, by returning to and embracing the traditional integrated resource planning approaches that they are inelegantly grasping toward in any event.

- Emergent markets lower costs for customers while maintaining system reliability and resilience through vertically integrated utilities with an obligation to serve and an accountable regulator.

- Emergent markets ensure stability and a state policy-dedicated path in the effort to reduce carbon emissions from the electric sector.

- The emergent-market model captures many of the benefits of fully restructured wholesale markets without the instability engendered by trusting jury-rigged "market" outcomes to deliver the right mix of low-carbon and reliable generation resources.

INTRODUCTION TO EMERGENT MARKETS — A HYBRID APPROACH

Two predominant models for trading wholesale power have emerged during recent decades. First, the regions that kept vertically integrated utilities had those utilities self-supply, or had them enter into both short- and long-term bilateral agreements with other generators. Thus, market trades between utilities occurred when a mutually beneficial trade could be negotiated between them, or when an independent supplier could supply electricity more cost effectively. (1) Second, in regions that restructured wholesale power markets to create competition between generators, a Regional Transmission Organization (RTO) or Independent System Operator (ISO) manages sales and transmission of power within a regional footprint, and these sales are conducted through an auction according to bids and offers that generators and load-serving entities submit to the RTO or ISO. In broad strokes, the bids and offers are run through an automated process to equilibrate supply with demand at the market price where an equilibrium occurs.

Significant exceptions have developed beyond this pure blackboard model of market trading, including RTO/ISO-approved reliability-must-run contracts that compensate generators required for reliability purposes at traditional cost of service rates, around-market payments like the zero emissions credit (ZEC) programs in Illinois and New York, and the expanded Minimum Offer Price Rule (MOPR; an in-market solution designed to ward off the impacts of state public policy choices and around-market solutions). These in-market and around-market approaches show that there are no "pure" markets for electricity. Rather, integrated resource planning always and inevitably creeps its way back in a system where supply and demand must be at equilibrium in real-time, at light-speed. (2)

The traditionally regulated and competitive models have supporters and detractors. Although the regulated utility model has withstood the test of time for over a century of utility regulation, advocates for RTO/ISO

1. *See* Energy Policy Group, *Competition in Bilateral Wholesale Electric Markets: How Does it Work?*, at 1 (Feb. 2016).
2. This is particularly so where the demand-side of the equation is nearly inelastic, particularly at times of extreme stress to the system.

expansion argue that regional trading captures the benefits of broader footprints and that dispatch of generation units in order from lowest to highest cost (known as economic dispatch) is more efficient. (3) Those favoring the regulated vertical utility note that the "market" approaches suffer from a host of problems, like the failure to adequately incentivize investment, the administrative complexity that accompanies them, and the constant upheaval and tinkering they inspire. (4)

To be sure, the relative imperfections of these respective regulatory models must be regarded comparatively, not as absolute and durable institutional truths. The political economy that led to restructuring—driven in part, ironically enough, from the price distortions imposed by the purported "competitive" PURPA qualifying facilities model—did not arise in a vacuum. Likewise, the present renewed push for mandated RTO/ISO participation arises from a political economy that, somehow, believes the RTO/ISO model—and only that model—unlocks the transmission expansion and clean energy development necessary to advance environmental and emission reduction objectives at the local, state, and national level.

But this policy conversation belies a binary choice between vertical integration and an RTO/ISO. This is false. The emergent-market model springing up across the country represents an approach that avoids the governance and administrative churn of the RTO/ISO model while still capturing the regionalization benefits of larger dispatch footprints. "Emergent market" means a bottom-up and voluntary arrangement between utilities that allows robust trading with low transaction costs to build on the traditional bilateral trading that utilities engage in extensively today—regardless of market model. The emergent market model is quickly gaining momentum, from the Southeast with the Southeastern Energy Exchange Market (SEEM) agreed to by a number of Southeastern utilities, (5) the Western Energy Imbalance Service Market (WEIS) to be administered by the Southwest Power Pool (SPP) beginning in early 2021, (6) to the Western Energy Imbalance Market (Western EIM) administered by the California ISO (CAISO), which first started in 2014. (7) Not only is the emergent market model growing across different regions, but the policy shift in the past half-decade in restructured areas to continually layer on in-market and around-market mechanisms to support preferred generation resources represents a gradual transition back towards the planned utility model. Of course, these three models are only examples of the different options available under the emergent market model. Emergent markets also are not static and can continue to develop to better incorporate clean energy, reduce emissions and customer costs, and advance transmission development in furtherance of all of thee objectives.

The Western EIM is the oldest of the emergent markets and the most developed. In 2014, the CAISO introduced the Western EIM and PacifiCorp joined soon after. From there, the Western EIM has grown incrementally but steadily, with utilities and balancing authorities joining over the years. The Western EIM will have a footprint in portions of ten western states and in British Columbia by the end of 2022. (8)

The Western EIM has calculated the savings realized from the efficiencies of greater pooling and dispatch of renewables, and from the Western EIM's inception until the end of October 2020, the it has saved approximately $1.11 billion. (9) The Western EIM has also estimated the emissions reductions resulting from avoided renewable generation curtailments, and it determined that 549,452 metric tons of CO_2 emissions were

3. *See*, *e.g.*, Judy Chang, Johannes Pfeifenberger & John Tsoukalis, *Potential Benefits of a Regional Wholesale Power Market to North Carolina's Electricity Customers*, at 3 (Apr. 2019).
4. *See*, *e.g.*, Paul L. Joskow, *Competitive Electricity Markets and Investment in New Generating Capacity*, *at 26* (2006) ("[N]umerous analyses of the performance of organized energy-only wholesale markets in the U.S. indicate that they do not appear to produce enough net revenues to support investment in new generating capacity in the right places and consistent with the administrative reliability criteria relied upon by system operators and regulators."); Michael H. Dworkin & Rachel Aslin Goldwater, 28 Energy L.J. 543, 561-77 (2007) (describing complexities of RTO governance).
5. *See generally New Southeast energy exchange adds value*, Duke Energy (Dec. 11, 2020), https://news.duke-energy.com/our perspective/newsoutheast-energy-exchange-adds-value.
6. *See generally Western Energy Imbalance Service Market*, Sw. Power Pool, https://spp.org/weis.
7. *See generally Western Energy Imbalance Market*, https://www.westerneim.com/Pages/About/default.aspx.
8. *See id.*
9. *Western EIM Benefits Report at 3*, Cal. ISO (Oct. 29, 2020), https://www.westerneim.com/Documents/ISO-EIM-Benefits-Report-Q3-2020.pdf.

avoided from 2015 to October 29, 2020, based on the assumed emissions rate of resources that would have had to run if renewable resources had been curtailed. (10)

The WEIS, which is planned to begin operations on February 1, 2021, is expected to deliver many similar benefits. A study conducted for SPP estimated that the WEIS would produce $49 million per year in savings, and SPP also states that the WEIS will help members achieve renewable-energy goals while reinforcing system reliability. (11) Of this $49 million, $25 million are expected to benefit the utilities joining SPP, and the remaining $24 million would benefit SPP's existing members, (12) demonstrating an equitable apportionment of benefits.

Similarly, the SEEM energy exchange proposed by utilities in the Southeast is projected to provide savings of approximately $40 million per year after beginning, and those benefits are predicted to increase in later years to as high as $150 million per year. (13) Like the Western EIM, the primary driver of benefits is the increased ability to respond to imbalances resulting from intermittent renewable generation, which also generates additional emissions reductions. (14) Of significant note, SEEM is also expected to have very low start-up costs, especially when compared with RTOs'/ISOs' annual administrative costs in the hundreds of millions of dollars—costs ultimately borne by customers. (15)

BENEFITS OF EMERGENT MARKETS WITH STATE-INTEGRATED RESOURCE PLANNING

The ground-up and voluntary approaches represented by the Western EIM, WEIS, and SEEM retain the underlying state utility regulatory structure providing for IRPs. This is important because, as described below, the restructured electricity markets have not produced sufficient revenues to keep some generators running even though those generators are needed for reliability purposes or to produce zero carbon emissions. (16) Thus, by retaining the use of IRPs to select resources and allowing utilities to recover their prudent costs of constructing and operating these resources, the emergent-market model undergirded by an IRP process offers an opportunity to avoid the instability of the restructured markets. (17) But at the same time, the emergent-market model delivers customer benefits by unlocking regional trading across a broader footprint to better match generation resources with demand. As the Western EIM explains, "the EIM's advanced market system automatically finds low-cost energy to serve real-time consumer demand across the west." (18) Further, it "enhance[s] grid reliability and generate[s] cost savings for its participants," and it "improves the integration of renewable energy, which leads to a cleaner, greener grid." (19) The emergent-market model captures many of the benefits of fully restructured wholesale markets without the instability engendered by trusting market outcomes to deliver the right mix of reliable, affordable, and clean generation resources.

10. *Western EIM Benefits Report* at 21.
11. *See SPP and stakeholders will consider RTO expansion to the west; study anticipates $49M in annual savings for current and new members*, Southwest Power Pool (Nov. 12, 2020), https://spp.org/newsroom/press-releases/spp-and-stakeholders-will-consider-rto-expansion-to-the-west-study-anticipates-49m-in-annual-savings-for-current-and-new-members/.
12. *Id.*
13. Charles River Associates, *Southeast Energy Exchange Market: Market Benefits and Non-Centralized Costs Evaluation* at 9 tbl.4 (Updated Nov. 18, 2020), https://media.crai.com/wp-content/uploads/2020/12/23104641/CRA-SEEM-Report_Public-SNL.pdf.
14. *Id.* at 10.
15. *Id.* at 13 (estimating start-up costs of $3.8 million); *see also* Tony Clark et al., At the Precipice: The Perils of Electric Utility Restructuring, at 15 tbl.1 (March 2021), https://www.wbklaw.com/wp-content/uploads/2021/03/At-the-Precipice_-The-Perils-of-Utility-Restructuring-3.16.21.pdf (showing annual spending of each RTO/ISO in the country).
16. *See*, Paul L. Joskow, Challenges for Wholesale Electricity Markets with Intermittent Renewable Generation at Scale: The U.S. Experience, at 18-20 (M.I.T. Ctr. for Energy & Envtl. Policy Research, Dec. 18, 2018), https://economics.mit.edu/files/16650 (explaining that revenues from wholesale markets are insufficient for recovering investment costs of resources needed for reliability).
17. *See*, e.g., Catherine Morehouse, *Maryland, Illinois may pursue legislative MOPR exit, despite new FERC nearing*, Util. Dive (Dec. 11, 2020), https://www.utilitydive.com/news/maryland-illinois-may-pursue-legislative-mopr-exit-despite-new-ferc-neari/592020/.
18. *Western Energy Imbalance Market*, https://www.westerneim.com/Pages/About/default.aspx.
19. *Id.*

Moreover, emergent markets arise organically and without the need for lengthy administrative, judicial, and legislative disputes addressing utility sector reform. Similar organic development is also taking root in the restructured states, where a multitude of in-market and around-market measures have been used to support favored resources by both states and RTOs/ISOs themselves. (20)

POSITIVE AND STABLE INVESTMENT SIGNALS TO DRIVE BENEFICIAL ENERGY RESOURCE OUTCOMES

The IRP approach combined with the emergent market models can drive a variety of customer and public policy benefits. Before proceeding, the RTO/ISO versus non-RTO/ISO distinction does not align perfectly with the distinction between IRP and non-IRP states. The Midcontinent ISO (MISO) and SPP regions have retained vertically integrated utilities with state IRP processes. For the most part, states in these footprints have realized the benefits we discuss below, but the emergent model may offer a path to deliver similar benefits without the other problems attendant to RTOs/ISOs. These problems include: (1) RTOs'/ISOs' cumbersome, opaque, complex, and politicized governance processes; (2) FERC jurisdictional creep using RTOs/ISOs as a vehicle for imposing costs and encroaching on the regulation of distribution and retail sides of the business through its demand response, storage and distributed energy resource orders; (21) and (3) the pricing model wherein zero-variable fuel cost resources dampen price signals in the energy markets—which eventually impacts all resources by shrinking inframarginal rents.

1. LONG-TERM PLANNING AND RESOURCE ADEQUACY

The "missing money" problem in electricity markets inhibits adequate capacity investment. (22) In short, the missing money problem results from the incentives of an electricity market based on marginal cost pricing. (23) By definition, setting the market price at marginal cost only covers an electric generator's short-term costs, but it provides no additional revenues for the electric generator to recover its fixed investment costs. (24) Thus, there is no incentive for new investment in additional resources to provide adequate generation capacity. (25) This is a problem in electricity markets because supply must constantly equal demand, meaning that there must be sufficient generation capacity available even during the hours of the year with the most extreme demands placed on the system. (26) As a result, markets for electricity that rely purely on short-term electricity prices are inherently unable to spur investment in enough generation resources when they also include a market cap. (27) Furthermore, attempts to solve the missing-money problem through other approaches only present additional difficulties, including excessive political lobbying involved in determining additional payments for capacity, forfeiture of state control, and significant administrative complexity. (28)

The rolling blackouts in California in the summer of 2020 and the Texas crisis of February 2021 are manifestations of these problems, and they should stand as reminders to policymakers that electric restructuring comes with significant risks. (29) The conclusion that must be drawn is that leaving decisions

20. *See generally* Raymond L. Gifford & Matthew S. Larson, *'Around Market,' 'In Market,' and FERC at a Crossroads* (May 2018), https://www.wbklaw.com/uploads/file/Articles-%20News/2018%20articles%20publications/White%20Paper%20-%20Market%20Design%20Issues%20-%20May%202018).pdf.
21. *See* Commissioner Mark C. Christie Dissent Regarding Participation of Distributed Energy Resource Aggregations in Markets Operated by RTOs and ISOs, FERC (Mar. 18, 2021), https://www.ferc.gov/news-events/news/item-e-1-commissioner-mark-c-christie-dissent-regarding-participation-distributed.
22. *See* Clark et al., *supra* note 15, at 2–4.
23. *Id.*
24. *See* Paul L. Joskow, *Challenges for Wholesale Electricity Markets with Intermittent Renewable Generation at Scale: The U.S. Experience*, at 18–20 (M.I.T. Ctr. for Energy & Envtl. Policy Research, Dec. 18, 2018), https://economics.mit.edu/files/16650.
25. *Id.* at 20.
26. Paul L. Joskow, *Competitive Electricity Markets and Investment in New Generating Capacity*, at 26–28 (2006), https://economics.mit.edu/files/1190.
27. Joskow, *supra* note 24, at 20–22.
28. Clark et al., *supra* note 15, at 9–16.
29. *Id.* at 7–9.

over a necessity that is crucial in every aspect of the economy—and modern life more broadly—in the hands of these sorts of prescribed markets is problematic. (30) This is especially the case as environmental concerns related to power generation become more pressing and emission reduction objectives become a primary focus of resource planning along with reliability and affordability. Accordingly, resource selection based purely on marginal-cost outcomes does not necessarily support generation portfolios desired by the public and policymakers. For example, as discussed below, many advanced zero-carbon dispatchable resources do not make investment sense based purely on marginal cost dispatch. (31)

The regulated utility model, by contrast, does not suffer from these infirmities. It leaves state policymakers in the driver's seat to determine the best path forward to advance the state's energy policy goals. The emergent model can then work on top of the regulated model to provide for more efficient generation unit dispatch, as it has in the Western EIM or is predicted to in the WEIS and SEEM.

2. PRICE STABILITY AND LIMITED VOLATILITY

Customers in regions with wholesale power markets and direct retail access bear the increased risk of blackouts at the times when power is needed most, and the extremely high price spikes on wholesale markets, like those experienced in Texas, can saddle customers with unexpected bills. The instances of customers facing electricity bills in the thousands of dollars in Texas shows the impact of extremely high wholesale prices. (32) Of course, not all customers in Texas were on the plans that subjected them directly to skyrocketing wholesale prices, but customers on fixed-rate plans will also likely see their bills increase as the collective costs of the event are indirectly passed on to consumers in succeeding years. The utilities offering fixed rate plans still incurred substantial costs to pay for power during the unprecedented surge in prices, and they will need to find ways to offset or recover these costs. Indeed, CPS Energy has floated the idea of recovering such costs over "multiple years." (33)

Similar price spikes can occur in other jurisdictions with wholesale power markets. Although other wholesale power markets have lower price caps, they still permit prices to reach $1,000/MWh (and sometimes $2,000 if a generator demonstrates that it is cost-justified). (34) These still represent levels approximately 20 to 50 times typical prices. (35)

Furthermore, the short-term, but severe, effects of the winter storm in Texas do not tell the whole story. An analysis by the Wall Street Journal found that customers in the regions of Texas with a deregulated electricity market have paid $28 billion more relative to residents served by traditional vertically regulated utilities. (36) That analysis looked at the full two decades of deregulation in Texas, not just the recent price spike, and it shows that the full-scale restructuring in Texas simply does not benefit customers on average.

30. *Id*. at 1.
31. One of the peculiar strange-bedfellow coalitions that has developed among RTO/ISO enthusiasts is the affinity between blackboard economics-loving marginal cost enthusiasts and environmental advocates whose use for the price system is historically attenuated and instrumental.
32. *See* Bill Chappell, *Texas Attorney General Sues Griddy, Saying Electricity Provider Misled Customers*, Nat. Pub. Radio (Mar. 1, 2021), https://www.npr.org/2021/03/01/972515561/texas-attorney-general-sues-griddy-saying-electricity-provider-misled-customers.
33. *See* Camila Domonoske, *The Power Is Back On In Texas. Now Comes The Recovery, And It Won't Be Cheap*, Nat'l Pub. Radio (Feb. 27, 2021), https://www.npr.org/2021/02/27/970877890/the-power-is-back-on-in-texas-now-comes-the-recovery-and-it-wont-be-cheap.
34. *Wholesale Electricity Markets and Regional Transmission Organizations*, Am. Pub. Power Assoc., https://www.publicpower.org/policy/wholesale-electricity-markets-and-regional-transmission-organizations.
35. *See Report on system and market conditions, issues and performance: August and September 2020*, Cal. ISO Dept. of Market Monitoring, at 14 (Nov. 24, 2020), http://www.caiso.com/Documents/ReportonMarketConditionsIssuesandPerformanceAugustandSeptember2020-Nov242020.pdf (noting that prices hit the $1,000/MW on August 17th and 18th of 2020, and were even higher when accounting for transmission constraints).
36. Tom McGinty & Scott Patterson, *Texas Electric Bills Were $28 Billion Higher Under Deregulation*, Wall St. J. (Feb. 24, 2021), https://www.wsj.com/articles/texas-electric-bills-were-28-billion-higher-under-deregulation-11614162780.

In addition to price volatility, organized markets with capacity markets also suffer from a different sort of volatility: policy volatility. The Federal Energy Regulatory Commission's (FERC) MOPR is a case in point. The MOPR requires all electric generators that receive state support (defined broadly), to bid into the PJM capacity market at or above a defined floor price. (37) In doing so, FERC effectively nullifies some state policy choices, which were based on the states' own judgments on how to effectively incentivize different generation resources within their borders. (38) As a result, regulators and policymakers in Illinois, New Jersey, and Maryland have been considering exiting the PJM capacity auction in favor of approaches that would allow each state to better direct its generation planning. (39) Even if that choice makes sense for those states, exiting (or even discussing exiting) the PJM capacity market generates additional uncertainty. This policy volatility certainly does not serve to induce more needed generation investment. Furthermore, the MOPR is merely the most recent in a history of in-market and around-market actions to purportedly make capacity markets run more efficiently. (40) The fact that FERC has now signaled openness to rethinking the MOPR only confirms the ongoing and consistent policy volatility in this space. (41)

3. GENERATION INNOVATION AND DIVERSE GENERATION PORTFOLIOS

Preserving state IRP processes coupled with broader regional trading also supports generation innovation and promotes more diverse and increasingly clean generation portfolios. As a recent study highlights, moving toward 100 percent carbon-free generation portfolios will benefit from innovative resources that are not yet broadly adopted. (42) The study highlights the importance of "clean firm power," which includes geothermal, hydrogen produced from renewable sources, carbon capture and storage, nuclear, and biomass. (43) The study's authors conclude that relying on only renewables and storage to meet California's zero-carbon targets would require a 65 percent increase in electricity prices. (44) This is because "if wind and solar are pushed to do all of the heavy lifting themselves, the system requires a lot of excess generating capacity and storage (most of which is seldom used) to provide reliable electricity and completely drive out greenhouse emissions. As a result, this strategy ends up being much more expensive than it might appear at first glance." (45)

Crucially, however, the report observes, "deployment [of clean firm power] will require policy support because these technologies are currently more expensive per kilowatt hour than wind and solar energy and all face implementation challenges. Managing this issue requires early innovation, investment, and political conversations to choose viable clean firm power systems." (46) The report thus recommends that "California's government could require utilities to build some form of clean firm power now and allow cost recovery for their implementation. Leaving the form of clean firm power up to the utilities themselves—with oversight from California's regulators focused on evaluating what the utilities do on the ground—will allow experimentation and learning." (47) The authors are essentially describing an IRP process, which offers a ready-made policy process for providing just the type of "policy support" the authors believe is necessary.

37. *See* Order Establishing Just and Reasonable Rate, 136 FERC ¶ 61,239, at ¶¶ 37–39 (Dec. 19, 2019)
38. Catherine Morehouse, *State-federal tension 'at an all time high' between MOPR, net metering attack, says head Maryland regulator*, Utility Dive (May 22, 2020), https://www.utilitydive.com/news/state-federal-tension-at-an-all-time-high-between-mopr-net-metering-atta/578471/.
39. Catherine Morehouse, *Maryland, Illinois may pursue legislative MOPR exit, despite new FERC nearing*, Util. Dive (Dec. 11, 2020), https://www.utilitydive.com/news/maryland-illinois-may-pursue-legislative-mopr-exit-despite-new-ferc-neari/592020/.
40. *See generally* Gifford & Larson, *supra* note 20.
41. *See* Catherine Morehouse, *FERC open to revisiting MOPR, as grid operators, utilities mull future of wholesale markets*, Util. Dive (Mar. 25, 2021), https://www.utilitydive.com/news/ferc-open-to-revisiting-mopr-as-grid-operators-utilities-mull-future-of-w/597233/.
42. *See generally* JCS Long et al., *California needs clean firm power, and so does the rest of the world*, https://www.edf.org/sites/default/files/documents/SB100%20clean%20firm%20power%20report%20plus%20SI_clean.pdf.
43. *See id.* at 5–6.
44. *Id.* at 4.
45. *Id.*
46. *Id.* at 15.
47. *Id.*

Turning to fuel diversity, in RTO/ISO regions without state IRP processes, the overwhelming majority of new generation additions are natural gas units. In 2018, natural gas plants composed nearly three quarters of the electric generation capacity added in the United States, and half of those natural gas units were located in the PJM region. (48) And 2018 was not an unusual year—if anything it continued a trend from the preceding decade. From 2008 to 2017, PJM added 15,000 MW of generation capacity, and nearly all of it was from natural gas plants. (49) This result should not be surprising. Because natural gas is generally inexpensive and natural gas generating units are some of the least capital-intensive units to construct, they are some of the only units that can be supported by wholesale power markets' investment signals, even in the regions with capacity markets.

Pro-RTO/ISO enthusiasts might also point to the replacement of coal resources with natural gas resources in RTOs/ISOs to argue that the market approach incentivizes investment in least-cost resources. But the same trend has been occurring across non-RTO states and within RTOs/ISOs, as demonstrated by retirements in Colorado and New Mexico. More broadly, policy makers should also consider whether complete reliance on any one generation technology or fuel source is sensible over the long term. Using the IRP approach to provide for a diverse portfolio of generation resources can provide a hedge against large and unforeseen price increases for one fuel source (the Texas energy crisis from February of this year comes to mind, when natural gas prices spiked dramatically). In short, emergent markets—with IRPs as the guide to generation procurement—can ensure diverse generation portfolios to avoid putting all of customers' eggs in one generation resource basket, which builds more resilience into the system.

Beyond the Texas crisis, diverse generation portfolios offer a hedge against fuel price increases. As the United States Department of Energy Staff Report on Electricity Markets and Reliability noted, "maintaining fuel diversity and security provides [the] best assurance for resilience." (50) Moreover, according to the same report, diversity assists "system planners and operators in creating optionality and hedging risks." (51) Emergent markets that maintain the vertically integrated model can better provide for fuel diversity because the state planning processes can value fuel diversity according to each individual states' preferences rather than leaving fuel diversity to firms looking to maximize profits in restructured markets.

Additionally, the recent proposal in Texas by Berkshire Hathaway to provide for resilience and emergency preparedness through a cost-of-service approach for standby resources (52) demonstrates how returning to some level of planning and cost support can promote reliability. The question is then whether to provide such cost support through tried-and-true state planning processes or the cumbersome, opaque, and ever-changing capacity markets in RTOs/ISOs. To us, the answer is clear. The IRP process used in states with traditional regulation *already* offers an open and adversarial venue, driven by a public interest standard, for resource planning.

48. *See Natural gas and renewables make up most of 2018 electric capacity additions*, U.S. Energy Info. Admin. (May 7, 2018), https://www.eia.gov/todayinenergy/detail.php?id=36092; S*&P: U.S. gas-fired capacity additions soared in 2018*, Inst. Energy Econ. & Fin. Analysis (Jan. 9, 2019), https://ieefa.org/sp-u-s-gas-fired-capacity-additions-soared-in-2018/.
49. *Overpowered: PJM market rules drive an era of oversupply*, S&P Global Market Intelligence (Dec. 3, 2019), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/overpowered-pjm-market-rules-drive-an-era-of-oversupply-54111666.
50. *Staff Report to the Secretary on Electricity Markets and Reliability*, U.S. Dept. of Energy at 62 (2017), https://www.energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf.
51. *Id.*

4. PRESERVES EXISTING CARBON-FREE RESOURCES

The emergent-market approach can retain important carbon-free resources that have struggled in the restructured markets in recent years. In 2021 alone, a massive 5.1 gigawatts (GW) of nuclear generation capacity is slated to be retired. (53) For comparison, only 2.7 GW of coal-fired generation is scheduled to be retired this year. (54) This capacity is composed of just three generator retirements: Indian Point (Unit 3), Dresden station, and Byron station. (55) Together, these generators produce about 43 terawatt-hours of electricity per year, roughly equivalent to the entire quantity of energy produced by solar generation in California. (56) The Dresden and Byron facilities are located in PJM, and their owner cited "declining energy prices and market rules that allow fossil fuel plants to underbid clean resources in the PJM capacity auction" as a reason for their closure. (57) The Dresden plant has a license to operate for another ten years, and the Byron plant has one for another twenty years, (58) meaning these retirements are premature and driven primarily by electricity market policies. Similarly, Entergy—the owner of Indian Point—noted that "sustained low current and projected wholesale energy prices" contributed to the decision to close. (59) Unfortunately, achieving aggressive carbon-reduction goals only becomes more difficult when nuclear generators must retire. (60)

With the right regulatory approach, however, nuclear generators would not need to retire. In states with IRP planning, nuclear generators can be granted a reasonable opportunity for cost recovery, thereby enabling their continued operation. It's little wonder why the only jurisdiction where any new nuclear generation is being developed is in a traditional vertically integrated state: Georgia Power's Plant Vogtle. (61)

INSTITUTIONAL AND GOVERNANCE CONSIDERATIONS

1. RESPECT FOR EMERGING INSTITUTIONS AND RULES, NOT A PRESCRIBED ONE-SIZE-FITS-ALL MODEL THAT MISSES GEOGRAPHICAL DIFFERENCES

The emergent-market approach built on top of state-level IRPs offers a model that respects the voluntary choices of utilities that join such markets while avoiding a one-size-fits-all market model for all regions. After more than a century, the regulated utility model has delivered reliable power, at low cost, through a regulatory structure allowing for state self-determination in electricity policy decisions. (62) The bottom-up and voluntary approach reflected in the emergent market approach should be given an opportunity to work. Rather than mandating participation in a full RTO or ISO, (63) with all the present challenges they entail, policymakers should give emergent markets space for development. Doing so respects a new and innovative approach in the power sector while also avoiding the potential for years of implementation complexities and bureaucratic overhead that arise if policymakers force utilities to adopt an organized market model that is struggling to produce satisfactory outcomes in the regions that already have them.

52. *Id.*
53. Robert Bryce, *President Biden's Inaugural Climate Move Should Be Saving Nuclear Reactors Slated For Closure*, Forbes (Jan. 20, 2021), https://www.forbes.com/sites/servicenow/2021/01/04/the-cio-of-the-future-will-need-these-5-skills/?sh=25c711807b15.
54. *Nuclear and coal will account for a majority of U.S. generating capacity retirements in 2021*, U.S. Energy Info. Admin. (Jan. 12, 2021), https://www.eia.gov/todayinenergy/detail.php?id=46436.
55. *Id.*
56. Robert Bryce, *supra* note 53.
57. Press Release, *Exelon Generation to Retire Illinois' Byron and Dresden Nuclear Plants in 2021*, Exelon (Aug. 27, 2020).
58. *Id.*
59. *Indian Point Energy Center*, Entergy Nuclear, https://www.entergy-nuclear.com/nuclear-sites/indian-point-energy-center/.
60. Daniel B. Poneman, *We Can't Solve Climate Change without Nuclear Power*, Sci. Am. (May 24, 2019), https://blogs.scientificamerican.com/observations/we-cant-solve-climate-change-without-nuclear-power/.
61. *See Nuclear Power in the USA*, World Nuclear Assoc. (updated Jan. 2021), https://www.world-nuclear.org/information-library/country-profiles/countries-t-z/usa-nuclear-power.aspx.
62. Tony Clark, Ray Gifford & Matt Larson, *The Vertically Integrated Utility: A Time-Tested Approach for Delivering Customer Benefits and Ensuring State Flexibility in Achieving Energy Policy Goals*, at 1–2, (Oct. 2020), https://www.wbklaw.com/wp-content/uploads/2020/10/Vertically-Integrated-Utility-White-Paper-10.26.20.pdf.

Moreover, emergent markets, with voluntary participation, layered on top of the IRP structure can strengthen the traditionally regulated model by delivering even lower costs and greater reliability to customers. (64) And they do so in ways that do not gloss over local differences with one-size-fits-all rules. This is important, especially in the western United States, because the approaches that work in the eastern regions of the country, with much higher population density, are not necessarily suitable for areas with large distances between population centers. One assumption underlying the wholesale market conception is that a large transmission network can bridge the lowest cost generation to load. (65) But this assumption does not hold true in the western United States because large distances between population centers, rugged terrain, and federal land permitting issues can make lengthy transmission projects exceedingly difficult to construct. (66) The emergent market model, by contrast, does not foist the market model that is used in other parts of the country onto regions that find a different approach more appropriate.

2. PRESERVATION OF LOCAL DECISION-MAKING

Organized wholesale power markets threaten to undermine state authority over an extraordinarily important sector that affects public health, safety, the environment, and is the lifeblood of the economy. (67) Organized markets turn decision making concerning the types of electric generation resources and their adequacy over to an administrative construct, where only a certain subset of generation resources are advantaged. (68) Policymakers should avoid such an outcome because it does not serve customers, emissions-reduction goals, and other energy sector goals.

CONCLUSION

For over 20 years, the fully restructured RTO/ISO model has been pushed by its supporters as the one-size-fits-all policy solution to that which ails the electricity industry. Advocates have asserted the model is cleaner, more reliable, and saves customers money. But events of the last two decades have discredited this presupposition. Numerous deficiencies increasingly plague the model, especially related to investment signals that support reliability, resilience, fuel source diversity, price stability and clean energy. Fortunately, policy makers have an alternative. The emergent market—built upon state IRP processes—holds the promise of aligning customer outcomes and grid transformation. It accomplishes this by employing aspects of both responsible planning and functioning markets while working with—not against—public policy goals. Emergent markets are the pragmatic answer to those who find the fully restructured RTO/ISO unsuitable for a 21st Century grid, and unpalatable in terms of its outcomes.

63. *See CLEAN Future Act*, H.R. 1512, 117th Cong. § 220 (2021) (mandating participating by all utilities in RTOs/ISOs), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/CFA%20Bill%20Text%202021.pdf.
64. *See, e.g., Western EIM Benefits Report* at 3, Cal. ISO (Oct. 29, 2020), https://www.westerneim.com/Documents/ISO-EIM-Benefits-Report-Q3 2020.pdf (showing benefits of approximately $1.11 billion in the Western EIM).
65. *See, e.g.,* Ari Peskoe, Is the Utility Transmission Syndicate Forever?, at 38 (Feb 16, 2021) (unpublished manuscript) (noting that transmission line development can unlock rich wind and solar resources in remote areas).
66. *See* Staff of the Federal Energy Regulatory Commission, Report on Barriers and Opportunities for High Voltage Transmission, at 21–30 (June 2020) (describing variety of barriers to transmission development, including federal permitting approvals under the National Policy Act).
67. *See* Clark et al., *supra* note 15, at 11.
68. *Id.* at 10–11.