



RECENT DEVELOPMENTS IN
ORGANIZED POWER MARKETS:
East & West

September 27, 2017

Power Series
2017-2018

BRACEWELL

RTO INITIATIVES

- During 2017, RTOs have taken steps to further initiatives in the pipeline from the period prior to the FERC loss of a quorum
- Many of those initiatives are focused on renewables and state programs concerning carbon emissions
- As FERC is only now coming to full strength, it is unclear how these initiatives will be viewed
- Policy decisions by FERC will be critical to how RTOs move forward

THE NEW FERC

- Kevin McIntyre – Chairman Designee (Awaiting Confirmation)
- Neil Chatterjee – Chairman (Since 8/2017 – Commissioner Status After McIntyre Confirmation)
- Robert Powelson – Commissioner (Since 8/2017)
- Richard Glick – Commissioner (Awaiting Confirmation)
- Cheryl Lafleur – Commissioner (@FERC Since 2010)

FERC STAFF APPOINTMENTS

- Anthony Pugliese: Chief of Staff
 - Senior White House Advisor at the U.S. Department of Transportation
 - Leadership role in the development and planning of President Trump’s infrastructure proposal
 - Consultant on energy issues involving solar, oil and natural gas at Pugliese Associates; Director of Legislative Affairs for former Pennsylvania Gov. Thomas Corbett
- James P. Danly: General Counsel
 - 2013 Law School Graduate
 - Law clerk to Judge Danny Boggs at the U.S. Court of Appeals for the Sixth Circuit
 - Law Firm Associate
 - Managing director of the Institute for the Study of War, a military think tank in Washington, D.C.; International Affairs Fellow at the Council on Foreign Relations
 - Former U.S. Army officer who served two deployments to Iraq, receiving a Bronze Star and Purple Heart

STATEMENTS BY COMMISSIONERS

- Chairman Chatterjee
 - You know, I'm a Kentucky native. I've seen firsthand throughout my life how important the contribution coal makes to an affordable and reliable electric system. Last year, coal provided over 80 percent, 80 percent, of the electricity in Kentucky. As a nation we need to ensure that coal, along with gas and renewables, continues to be part of our diverse fuel mix.
- Mr. McIntyre
 - I respect states' authority to make resource decisions that are within their jurisdiction. FERC, too, has authority relevant to this issue – its statutory obligation to ensure just and reasonable wholesale electricity rates. [T]he Commission held a technical conference regarding the interaction between state initiatives and FERC-jurisdictional wholesale electricity markets. I look forward to reviewing the record in the Commission's proceeding and discussing these issues with my colleagues.

STATEMENTS BY COMMISSIONERS

- Commissioner Powelson
 - I do not support the federal government trampling states' rights to pursue energy policies and I agree that states have jurisdiction over the resource mix in their individual states. However, from time-to-time the state policies and FERC-jurisdictional wholesale electricity market rules intersect in a way that may burden the wholesale markets and the Commission's ability to ensure that wholesale electricity rates are just and reasonable. FERC is already considering these important issues and recently held a technical conference exploring these state-FERC issues.

STATEMENTS BY COMMISSIONERS

- Mr. Glick
 - Baseload generation, along with more flexible electric generation resources, intermittent generation, such as wind and solar, energy efficiency, and demand response, have all contributed to the reliability of the bulk power system.
 - I believe FERC should not exercise its authority in a way that prioritizes any specific types of electric generation resources over others. Instead, the Commission must be a fuel-neutral regulatory body.

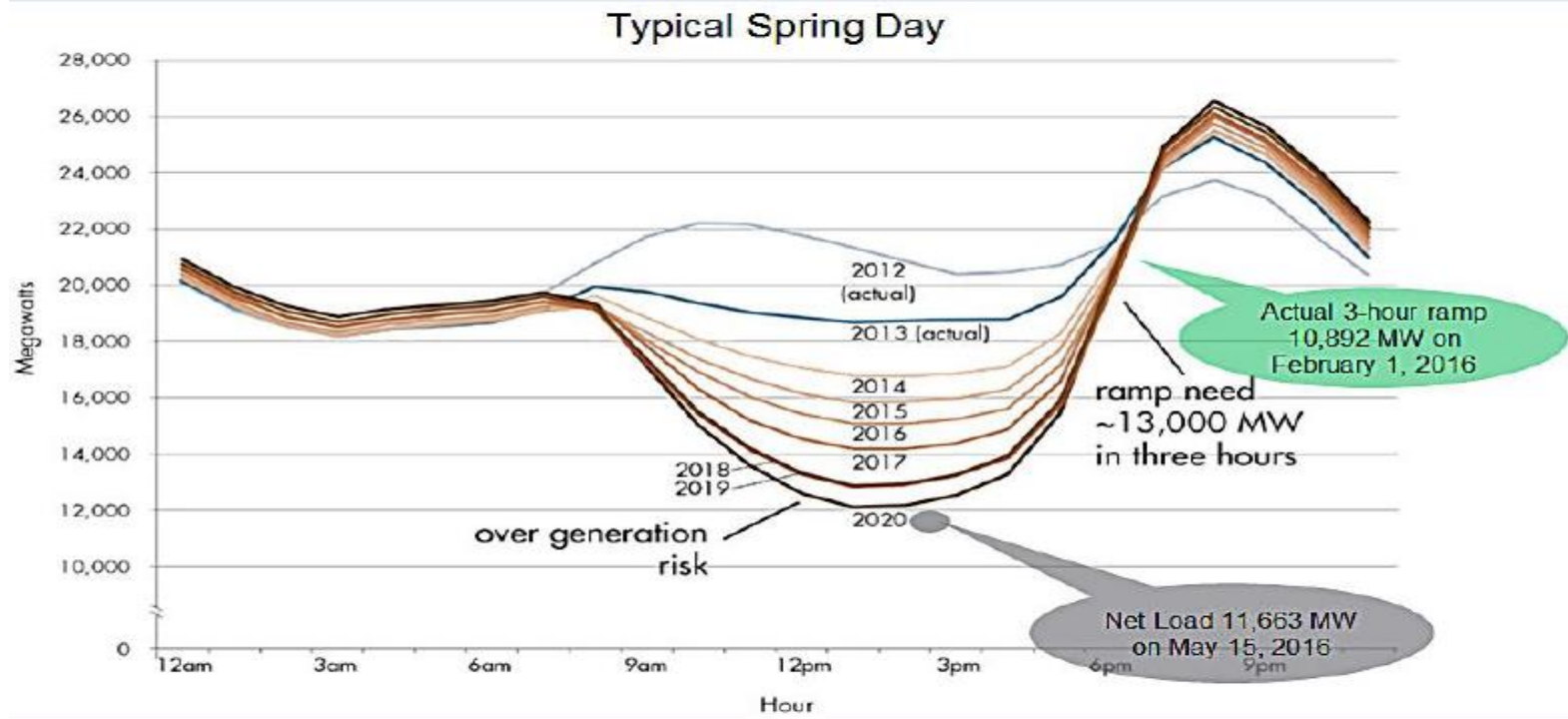


Developments in Western Markets

THE GROWTH OF RENEWABLE RESOURCES

- Primary factor driving developments in western markets is the rapid growth of renewable resources
 - Response to ambitious state RPS and GHG goals
- Proliferation of renewable resources has fundamentally altered the task of balancing the grid

The Growth of Renewable Resources



Source: Department of Energy, Staff Report to the Secretary on Electricity Markets and Reliability at 83 (Aug. 2017)

CAISO ENERGY IMBALANCE MARKET

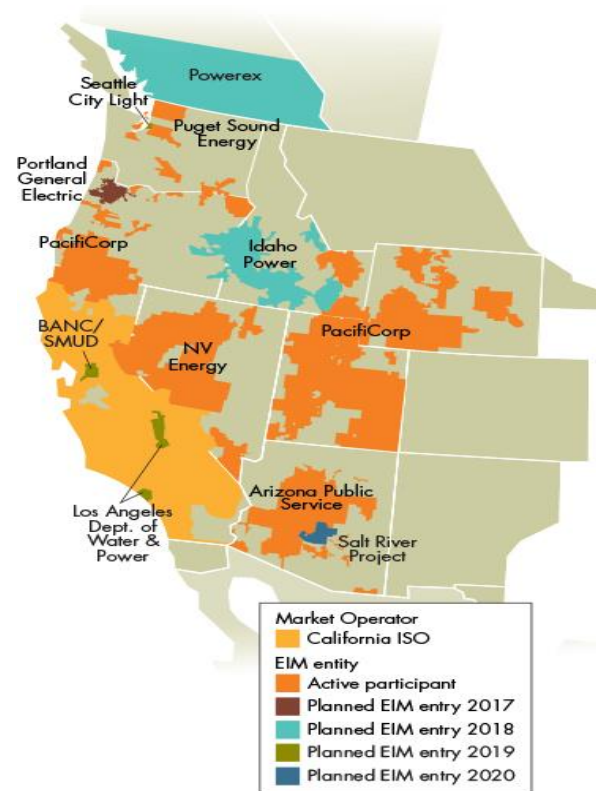
- First significant expansion of organized markets in the Western Interconnection
- Provides entities outside the CAISO BAA the option to participate in CAISO's real-time market for imbalance energy
 - Allows CAISO and participating entities to use resources from combined areas to meet variations in load and generation on 5-minute and 15-minute basis
 - CAISO dispatches resources in combined footprint to meet imbalance needs across region and settles imbalances on CAISO-calculated LMP

CAISO ENERGY IMBALANCE MARKET

- Renewable integration cited as primary benefit of EIM:
 - “The EIM will help integrate renewable resources by capturing the benefits of geographical diversity of load and resources. Geographical diversity helps integrate variable energy resources because the output variation in one region tends to be counterbalanced by variations in another. Also, a larger footprint creates a deeper pool of resources to balance varying supply and demand that occur at different times.”

CAISO ENERGY IMBALANCE MARKET

- Since commencement of operation in November 2014, EIM has expanded to include:
 - PacifiCorp
 - APS
 - NV Energy
 - Puget Sound
- There are currently 7 additional entities that have expressed intention to participate in EIM
- Mexico grid operator, CENACE, also exploring participation of the Baja California Norte grid



Source: Western EIM, available at <https://www.westerneim.com/Pages/About/default.aspx>

WESTERN RTO

- PacifiCorp has announced intention to integrate into CAISO as Participating Transmission Owner
 - Would result in full extension of CAISO markets to PacifiCorp system
- Initial Push: 2015-2016
 - CAISO and state agencies work to address changes to existing market structure necessary to accommodate PacifiCorp participation, including CAISO governance and GHG accounting
- Efforts Stall
 - August 2016 – California Governor issues letter putting efforts on hold
 - September 2017 – AB 726 and AB 813

FLEXIBLE RAMPING PRODUCT

- Implemented November 2016
 - Commit resources to provide upward and downward ramping capability to address distinct drivers of flexibility needs
 - Forecast changes
 - Uncertainty
 - Compensate resources for opportunity cost associated with providing flexible ramping capability

FLEXIBLE RAMPING PRODUCT

- Potential CAISO Enhancements:
 - Day-Ahead FRP
 - Address uncertainty in 15, 30, 60 minute forecasts
 - Locational procurement and pricing

FLEXIBLE RA

- FRAC-MOO Program
 - Each LSE required to meet allocated share of system flexibility requirements
 - Demonstrate compliance through year-ahead and month-ahead RA showings
 - Three categories of flexible RA:
 - Base Flexibility
 - Peak Flexibility
 - Super-Peak Flexibility
 - Resources committed to provide flexible RA must submit offers to supply energy and ancillary services in day-ahead and real-time markets during commitment period

FLEXIBLE RA

- Limits to FRAC-MOO program:
 - Not capable of meeting full range of CAISO flexibility needs
 - Designed to procure sufficient upward ramping capability to meet projected maximum daily three hour net load ramp in given month
 - Hourly and intra-hourly needs not addressed
 - Insufficient ramping speed

FLEXIBLE RA

- CAISO currently engaged in effort to create durable flexible RA program that aligns procurement with flexibility and operational needs
- Four distinct products:
 - Day-ahead ramping
 - 15-minute
 - 5-minute
 - Regulation

COST ALLOCATION

- CAISO Small PTO Proposal – Docket No. ER17-1432
 - Proposal to permit regional allocation of costs of network upgrades to accommodate interconnection of renewables
 - Certified Small PTO:
 - With annual gross load below 2,000 GWh;
 - Located in area with “significant interest” in developing new generating facilities that can support municipal, county, state, federal, or other RPS; and
 - Not subject to RPS or comparative directive

COST ALLOCATION

- CAISO Small PTO Proposal – Docket No. ER17-1432
 - Order Rejecting Tariff Amendments (Sept. 1, 2017)
 - Found that CAISO had failed to demonstrate that its proposal allocates costs to those that benefit from network upgrades
 - Explained that CAISO had failed to justify why proposal should only apply to VRE
 - » “Although CAISO attempts to distinguish PTOs based on whether they are subject to a [RPS] standard, this distinction has no basis in the Commission’s policy concerning the benefits of network upgrades.”
 - Left open possibility that regional allocation of portion of costs may be appropriate

COST ALLOCATION

- CAISO Small PTO Proposal – Docket No. ER17-1432
 - Commissioner LaFleur dissent:
 - “It is simply unfair to require the 0.27 percent of CAISO’s customer base in Nevada to bear the costs of these interconnections, which are not remotely commensurate with the benefits that they receive . . . the customers in California, whose policies are driving the costs, should largely bear the burden of these costs.”
 - “Since the interconnections to Valley Electric are helping California to meet the public policy requirements it has established on behalf of its customers, broadly spreading those costs to California customers—rather than directing them solely to the 0.27 percent of customers in Nevada—simply makes common sense”



Developments in Eastern Markets

DEVELOPMENTS IN EASTERN MARKETS

- As in the west, market changes in eastern RTOs/ISOs are being driven by state public policies promoting renewables and seeking to reduce GHG emissions
- Increasing focus on the intersection of state and federal authority and the impact of state-subsidized resources on the integrity of jurisdictional markets

STATE POLICIES AND WHOLESALE MARKETS

- *Hughes v. Talen*, 136 S. Ct. 1288 (2016)
 - Found that Maryland program awarding contracts for difference to generation interfered with FERC’s exclusive jurisdiction over rates and charges for wholesale sales of energy and capacity
 - Acknowledged that there may be other avenues open to the states:
 - We . . . need not and do not address the permissibility of various other measures States might employ to encourage development of new or clean generation, including tax incentives, land grants, direct subsidies, construction of state-owned generation facilities, or re-regulation of the energy sector. Nothing in this opinion should be read to foreclose Maryland and other States from encouraging production of new or clean generation through measures untethered to a generator’s wholesale market participation . . . So long as a State does not condition payment of funds on capacity clearing the auction, the State’s program would not suffer from the fatal defect that renders Maryland’s program unacceptable.

STATE POLICIES AND WHOLESALE MARKETS

- *Allco Finance Ltd. v. Klee*, 861 F.3d 82 (2d Cir. 2017)
 - Found that Connecticut renewable RFP and RPS programs were permissible exercises of state authority and were not preempted by the FPA
- ZEC Litigation
 - Concerns legality of New York and Illinois programs providing financial support for at-risk nuclear facilities
 - In July 2017, U.S. District Courts in New York and Illinois dismissed complaints challenging programs
 - “Influencing the market by subsidizing a participant, without subsidizing the actual wholesale transaction, is indirect and not preempted.”
 - Both rulings were immediately appealed

STATE POLICIES AND WHOLESALE MARKETS

- A number of RTOs/ISOs are proactively considering market design changes to better accommodate state public policies in wholesale market design, including:
 - Forward Clean Energy Market
 - Capacity market changes
 - Carbon pricing

STATE POLICIES AND WHOLESALE MARKETS

- ISO-NE Forward Clean Energy Market (IMAPP)
 - Forward procurement of low carbon resources through competitive auction administered by ISO-NE
 - 3.5-year forward auction
 - Procurement target set by the states
 - Generating resources receiving award through auction would receive compensation in addition to market revenues
 - Costs allocated to LSEs in state for which clean energy was procured

STATE POLICIES AND WHOLESALE MARKETS

- ISO-NE Two-Stage Forward Capacity Market (IMAPP)
 - First Stage:
 - As under current construct, ISO-NE would clear auction with application of Minimum Offer Price Rule (“MOPR”)
 - Second stage:
 - ISO-NE would run a “substitution auction”
 - » New subsidized resources that did not receive capacity supply obligation in first-stage would be able to offer to supply capacity
 - No MOPR
 - » Resources that submitted offers in first-stage indicating willingness to retire would be entered on demand side of substitution auction
 - » Purpose is to allow existing resources with capacity supply obligations obtained in first-stage to transfer obligation to subsidized resources

STATE POLICIES AND WHOLESALE MARKETS

- PJM Capacity Repricing Proposal (Stakeholder Process)
 - Intended to prevent resources receiving out-of-market payments from lowering capacity prices
 - After clearing market, PJM would recalculate prices in auction:
 - Remove offers submitted by units receiving “actionable” out-of-market subsidies from the markets
 - Replace those offers with reference offers reflecting competitive offer from that type of resource and recalculate price
 - PJM would pay capacity resources and charge demand based on recalculated price
 - » States would be permitted to request that PJM reduce compensation for state-subsidized unit

STATE POLICIES AND WHOLESALE MARKETS

- PJM stakeholder proposals:
 - MOPR-Ex
 - Extend MOPR to apply to both new and existing resources
 - Bilateral procurement of low carbon resources
 - Allow LSEs to reduce capacity obligation by procuring clean energy resources on forward basis
 - Selective repricing based on “materiality screen”
 - Only reprice where participation of state-subsidized resources represents material threat to reliability or competitive outcomes

STATE POLICIES AND WHOLESALE MARKETS

- Carbon Pricing
 - RTO/ISO would impose charge based on emissions rate of facility
 - Associated cost would be reflected in resource offers
 - Effect would be to increase costs of higher-emitting resources and create price signals for the development of cleaner resources
 - Additional revenues collected would be returned to consumers or wholesale buyers
 - ISO-NE, NYISO, PJM each considering carbon price proposals
 - Differ in scope and manner in which charges would be calculated

STATE POLICIES AND WHOLESALE MARKETS

- MISO Renewable Integration Impact Assessment
 - Recently commenced multi-year study efforts to evaluate impact of renewable growth on the MISO grid and identify solutions
- Mountain West SPP Integration
 - Mountain West Transmission Group has announced intention to pursue participation in SPP market
 - Basin Electric, Black Hills Power, Black Hills Colorado, Cheyenne Light Fuel & Power Co., Colorado Springs Utilities, Platte River Power Authority, Public Service Company of Colorado, Tri-State Generation and Transmission Association, and WAPA
 - Negotiations expected to begin in October 2017
 - “Participation in a regional market can provide operational efficiencies through economies of scale and increased opportunities to bring lower-cost renewables into our system.”

STATE POLICIES AND WHOLESALE MARKETS

- FERC Technical Conference, AD17-11-000
 - FERC convenes two-day technical conference on state public policy and wholesale markets
 - Intended to foster discussion regarding solutions that have the potential to reconcile the competitive market framework in eastern RTOs/ISOs with state programs supporting particular resources or resource attributes
 - What role should wholesale markets play in achieving public policy goals?
 - » Should state policies be satisfied by wholesale energy and capacity markets?
 - » Should the goal of wholesale market design be to simply avoid conflict with state policies?

STATE POLICIES AND WHOLESALE MARKETS

- FERC Technical Conference, AD17-11-000
 - Discussion identified five broad paths forward:
 - Limited or no MOPR
 - Accommodation of state actions
 - Status quo
 - Integration of state policy choices into wholesale markets
 - Expansion of MOPR to apply to new and existing resources
 - Following the conference, FERC invited interested parties to submit comments on the identified paths and related issues

STATE POLICIES AND WHOLESALE MARKETS

- FERC Technical Conference, AD17-11-000
 - Over 70 interested parties submitted comments
 - Diverse array of opinions on paths identified by commenters
 - Significant disagreement regarding the extent to which state-subsidized resources should be permitted to participate in and set price in wholesale markets, including the role of the MOPR
 - Strong support for taking steps to ensure that wholesale markets take into account a broader range of resource attributes and policies to the extent possible
 - Significant uncertainty regarding what steps, if any, FERC will take as a result of its technical conference given changes in membership



Trends Since Quorum Reestablished

FERC TRENDS

- Less deference and greater scrutiny of RTO/ISO and market monitor positions and filings
 - *CAISO*, 160 FERC ¶ 61,007 (2017)
 - Rejected CAISO tariff revisions proposing to extend for an additional year a program providing beneficial imbalance treatment to qualifying variable energy resources
 - *IMM v. AEP*, 160 FERC ¶ 61,044 (2017)
 - Directed PJM IMM to provide further justification for its request that FERC direct AEP to provide operations and maintenance costs included in development of units' cost-based offers
 - » PJM IMM claimed that information necessary to assess whether AEP's cost-based offers raise market power concerns
 - Required that PJM IMM explain why data was necessary to ensure correct application of tariff or to investigate market power concerns

FERC TRENDS

- More frequent rejection of RTO/ISO tariff revisions
 - Traditionally, FERC has been reluctant to completely reject proposed tariff revisions
 - Where FERC has substantive concerns, FERC typically will accept on condition that utility revises proposal as directed in order
 - New FERC appears more willing to reject utility proposals
 - FERC has issued 7 orders rejecting proposed tariff revisions or agreements in their entirety
 - May be response to *NRG Power Marketing, LLC v. FERC*
 - Found that FERC had exceeded bounds of its authority in directing changes to PJM capacity market proposal

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David Perlman represents and counsels clients in regulatory and compliance matters concerning the Federal Energy Regulatory Commission (FERC), Commodity Futures Trading Commission (CFTC) and state public utility commissions, energy-related transactions and financings, and in the establishment of compliance programs and training. His clients include utilities, commodities merchants, oil and gas pipeline companies, electric generators, energy marketers, industrial customers, generators, lenders and financial institutions and oil and gas producers. David has held positions as chief counsel to Lehman Brothers commodity trading business, where he was responsible for legal, transactional and regulatory matters relating to the firm's physical and derivative commodity businesses, and general counsel and chief energy counsel at Constellation Energy's merchant and trading business.



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Stephen Hug represents clients in matters related to federal and state regulatory policies, regulations and rules applicable to the electric industry. He has experience with the Federal Energy Regulatory Commission (FERC) and the Federal Power Act (FPA), including FERC enforcement and compliance, wholesale power trading, centralized energy and capacity markets, transmission and interconnection matters and representation of utilities in contested proceedings before FERC. Stephen also has experience with state regulatory matters, including the Electric Reliability Council of Texas (ERCOT) and Public Utility Commission of Texas (PUCT) regulations, state net metering programs, interconnection issues and retail choice programs. Prior to joining Bracewell, Stephen was an attorney advisor in the Office of the General Counsel, Energy Markets at FERC, where he reviewed and analyzed filings submitted under Section 205 and 206 of the FPA.

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