

Annual Meeting Evolving Compensation and Market Mechanisms

December 7–9, 2020

Meeting Summary



**NATIONAL COUNCIL
ON ELECTRICITY POLICY**

The National Council on Electricity Policy (NCEP) held its 2020 Annual Meeting on Evolving Compensation and Market Mechanisms on December 7-9, 2020. Due to the on-going COVID-19 pandemic, participants met virtually over the Zoom Meeting platform. During the meeting, NCEP explored questions around who pays for the system now, and the future of how we pay, as new technologies proliferate across the states which may raise new questions about traditional market policy and compensation mechanisms. See the [final agenda](#) and all [speaker biographies](#) (speaker names link to their presentations).

NCEP President Paul Kjellander (also President of the Idaho Public Utilities Commission and the National Association of Regulatory Utility Commissioners) opened the meeting and guided attendees through the agenda throughout. To begin the 2020 annual meeting, NCEP awarded the Jan Brinch Award to Lawrence Mansueti, retired from the U.S. Department of Energy.

Day 1 sessions featured discussions on FERC Order 2222, fundamentals of distribution level markets, compensation and market mechanisms, and exploring cost benefit frameworks. Day 2 sessions looked at the future of compensation and market mechanisms, development of customer level markets, and the intersections between state and regional policies. Day 3 featured an in depth workshop detailing uses of the DER National Standard Practice Manual.

Each session was led by an NCEP member and featured multiple panelists. Attendance exceeded 100 people throughout the day and over 180 unique attendees over the three days. Participants included representatives from state utility commissions, state energy offices, national labs, state air and environmental agencies, state legislators, federal agencies, state legislators, consumer advocates, and other experts and interested persons.

Day 1: December 7, 2020

Recent FERC Decisions

Moderator: Hon. Ted Thomas, Arkansas

Panelists (presentations hyperlinked):

[Karin Herzfeld, Federal Energy Regulatory Commission](#)

David Kathan, Federal Energy Regulatory Commission

David Kathan and Karin Herzfeld provided an overview of FERC Order 2222, which was released in September 2020. FERC Order 2222 directs Regional Transmission Organizations (RTOs) to develop tariffs to allow for the participation of (aggregated) distributed energy resources (DER) in wholesale markets. FERC notes that it took action on this topic to address barriers to entry for DER into wholesale markets due to their individual size or lack of opportunity in current RTO tariffs. As of December 9 2020, RTO compliance filings under Order 2222 are due by July 19, 2021.

Operational Considerations for Distribution Level Markets

Moderator: Hon. Sarah Hofmann, Vermont Public Utility Commission

Panelists (presentation hyperlinked):

[Paul De Martini, Newport Consulting Group](#)

[Anne Hoskins, Sunrun](#)

Paul discussed the need to start planning for a more distributed electricity system today as opposed to the traditional hierarchical system. This means expanding relationships between resources and actors across the system. In order to accomplish that expansion, it is important to understand those relationships and organize them into smaller segments in order to handle the complexity. Paul discussed several types of distribution system operators that can assist in the coordination of these resources and relationships. He described the differences between a Total DSO, Hybrid DSO, and Total TSO. To identify which structure is best requires the identification of planning, operation, and market functions, and development of architectural principles.

Anne also discussed the changes occurring across the electricity sector related to the growth of DER, but also impacts of environmental disasters. She noted the increasing risk of wildfires across California and resulting impacts. Since DER, and storage in particular, is not yet fully integrated into utility plans, planned outages were the norm rather than the inclusion and use of DER. Anne described the need to change the way the system planned, highlighting the report, "[Why Local Solar For All Costs Less](#)," that identified over \$438 billion in savings just by changing the way utilities plan their system. Anne then detailed how Sunrun works with other companies and utilities to provide services, such as virtual power plant, which can assist the utility in better optimizing and operating their system. She supported the Total DSO vision as one best suited to maintain service and power quality while also coordinating load and DER to ensure reliability.

Introduction to Compensation and Market Mechanisms

Moderator: Michael Dowd, Virginia Department of Environmental Quality

Panelists (presentations hyperlinked):

[Burcin Unel, NYU Institute for Policy Integrity](#)

[Ann McCabe, Regulatory Assistance Project](#)

[Lynne Kiesling, Carnegie Mellon University](#)

In this session, each speaker addressed a component of the ratemaking and compensation mechanisms related to better utilization of DER. Burcin described the need for better alignment of value and costs, including the importance of value stacking from resources. This will impact the methodology for identifying the value and the cost of the resource as it depends on where and when the resource is participating. Finally, Burcin noted that these value opportunities extend to reducing greenhouse gas emissions and non-RTO states.

Ann noted that the growth of DER and the decentralizing effects of DER has an impact on the business model of the utility. She described four ways that DER are compensated:

Via utility tariffs or bill credits/rate design (e.g., NEM)

From Market revenues (e.g., forward contracts)

Signing PPAs or contracts (e.g., PURPA or FiT)

Utility programs and one-time pay

However, DER still subject to implicit biases in regulatory model, such as prohibition on demand response and DER aggregation. A step to address this bias is to consider a performance based incentive mechanism that would change utility interests away from a focus on capital to one based on performance, such as leveraging non-utility assets, DER, and infrastructure deferral.

Lynne's presentation looked at the risk of inaction by the utility and regulator in response to opportunities for DER. Lynne noted that utilities are traditionally risk-adverse even though they face little overall risk as their approved costs get recovered through rates paid by their customers. With new entrants and technologies, how do those technologies impact the utility business model? The risk of inaction by the utility may leave it vulnerable to higher costs as the utility seeks to catch up rather than be prepared to utilize those resources. The digitization of products and systems have reduced transaction costs over time and when transaction costs fall, that changes the "optimal" boundary of firm. This can lead to opportunities for transactions to be done by markets rather than by traditional (monopoly) actor. In order to respond this evolution, there is a need to look at appropriate role of monopoly and potential loss of benefits from market innovation.

Exploring Optimization through Benefit-Cost Analysis

Moderator: Tanya McCloskey, Pennsylvania Office of the Consumer Advocate

Panelists (presentations hyperlinked):

[Hon. Abigail Anthony, Rhode Island Public Utility Commission](#)

[Julie Michals, E4TheFuture](#)

[Snuller Price, E3](#)

Commissioner Anthony described the role of a benefit cost analysis (BCA) to help understand the potential benefits of utility investments. She noted three misunderstandings about the use of a BCA:

A BCA is informative, not determinative, and is only one part of the process and analysis.

If investment has no value to utility customers, why should utility customers pay for it?

BCA is underutilized as a tool to make the case. A BCA is a powerful tool to show evidence of value by taking a rhetorical argument and turning it into evidence. Indeed, it should not be perceived as a framework looked upon as a burden which results in lost opportunity to craft narrative.

Commissioner Anthony then detailed the reason why an investment may be needed - a statutory requirement, for the power system, or in response to customer demand - but the utility still needs to show that the utility's customers need the investment. Finally, Commissioner Anthony noted the challenges for regulators when reviewing utility cost proposals - how to ensure that the benefits proposed are realized and how to ensure that utility customers are paying for programs that benefit the utility customers, and not beyond the utility.

Julie provided an overview of the preparation of the DER Standard Practice Manual, which was released earlier in 2020. A new Standard Practice Manual was needed because of the increasing lack of consistency across the U.S. in evaluating utility proposals as a lack of consistency leads to bias and suboptimal investment in certain areas. The updated manual encompasses a set of principles, a process to develop a primary cost-effectiveness test, and when and how to use secondary cost effectiveness test. It also details the importance of a regulatory body to identify and describe their own principles, when then allows the regulator to compare their principles against the BCA principles in the new manual. The process described in the manual can assist regulators use a set of principles to then develop their own appropriate BCA test for their jurisdiction.

Snuller asked why it is important to look at DER optimization. He noted that a number of factors are changing, and since utility portfolios and budgets are often siloed, this requires a need to rebalance portfolios. In the absence of this rebalancing, the utility will face increasing rate pressure in response, which will lead to increased scrutiny on utility costs. He stated that most states do not have a framework to look at the growing opportunities for DER, as DER is generally reviewed in traditional ratemaking mechanisms. Cost-effectiveness review will become more complicated as aggregators continue to offer new products and services to customers, taking away more traditional utility offerings. He concluded with three opportunities for regulators to look at DER benefits:

Regulatory Actions that can rebalance DER portfolios and integrate dynamic value streams;

Support investment in DER technology, including looking at business models for aggregators; and

Wholesale market coordination in response to FERC Order 2222, which will allow for the opportunity to scale, standardize, and clarify the rigor of operations.

Day 2: December 8, 2020

Fireside Chat: Evolving Compensation and Market Mechanisms

Moderator: Hon. Paul Kjellander, Idaho Public Utility Commission

Panelists (no presentations):

Julia Frayer, London Economics International

Mark Paterson, Strategen

Tanya Barham, Community Energy Labs

NCEP President Kjellander led a discussion with the three panelists about the future of the distribution system, wholesale markets, customer needs, and the role of DER in this evolution. Julia highlighted the need for ratemaking structures to better mimic competitive markets which are more focused on the customer. She sees that the natural monopoly will evolve into a different type of service, however, due to the risk adverse nature of utilities and regulators, she wonders why utilities are not also able to evolve like other markets. Even though customers like simplicity, customers would be better off with more options at the point of delivery.

Mark began by discussing the activities in Australia and how DER, notably solar, has transformed the Australian electricity system and market. This transformation impacts physics, economics, and regulatory models and structures. Incentivizing positive DER services becomes increasingly critical to system efficiency and social equity. Moving to decentralized and layered structure which can better use DER services are becoming central to efficiency and operation of system. However, incentives need to identify right services at right time and right location. The role of behavioral economics and human centered design will help consumers better adapt to these changes without increasing complexity. Lastly, in order to prepare the electricity system for these changes, Mark notes that this transition must first be looked at from the future - what does the system of the future look like, what are its properties and capabilities, then build the policy and system today to those properties.

Tanya described her work with local communities and trying to accomplish their goals inside a utility structure. She noted that systems that work better together, create better and result in more optimization. However, for that to work, it is vital to understand the shape and nature of demand in order to try to get energy use to match with output and consumption. She stated that there is a disconnection between utilities and how to use customer data, prepare products for customers, and/or understand the needs of their customers. Tanya then outlined a vision where the utility becomes the platform provider for new services - by embracing competition, they can focus on their core competencies, but also enable innovation and identify partnerships that can provide value to customers.

A Future with Customer Level Markets

Moderator: John Chatburn, Idaho Energy Office

Panelists (presentations hyperlinked):

[Mark Knight, Burns and McDonnell](#)

[Monica Neukomm, U.S. Department of Energy Office of Energy Efficiency and Renewable Energy](#)

[Ajit Renjit, Electric Power Research Institute](#)

Mark Knight noted that to enable customer level markets, there will need to be greater access to customer data, including granular information on electricity use. In order to leverage customer resources to meet grid needs it is important to focus on the requirements. Future markets will depend on power flows and the location of customers, and those markets will also rely upon the services customers are able to provide. In order to minimize potential disruptions, it is important to standardize how customers will interact with and respond to grid needs and markets.

Monica Neukomm discussed the opportunities for Grid-Interactive Efficient Buildings (GEB) to provide flexibility for grid operations. A GEB has several options for interacting with the grid, such as managing devices inside a building in response to a price or signal, but also allowing buildings to interact with other buildings. However, there are not sufficient incentives for buildings to invest in the technology or potential. Identifying opportunities for GEB to be compensated for load flexibility would help encourage buildings owners and customers to look at technology and be an opportunity to educate customers on those opportunities.

Ajit detailed the role a Distributed Energy Resources Management System (DERMS) plays in integrating and optimizing DER. According to Ajit, DERMS can accomplish four things:

- Aggregate resources

- Simplify services

- Optimize different capabilities at different times of day

- Translate languages of different DERs to the language of the grid

How these DERMS services ultimately get utilized will depend on the implementation of DSO and identification of the appropriate services and functions of the DSO.

Intersections of Regional Markets and State Policies

Moderator: Hon. Eric Koch, Indiana State Senator

Panelists (presentations hyperlinked):

[Marcus Hawkins, Organization of MISO States](#)

[Asim Haque, PJM](#)

[Hon. Katie Dykes, Connecticut Department of Energy and Environmental Protection \(DEEP\)](#)

[Greg Poulos, Consumer Advocates of the PJM States \(CAPS\)](#)

Marcus outlined the work that OMS does for its members, notably providing assistance and education to commissions on DER. OMS does a MISO-wide survey to identify the amount of DER across the footprint of MISO as a lot of DER participates in MISO, but a lot does not. He also described the importance of transmission and distribution coordination in response to Order 841 implementation and the requirements for Order 2222 implementation. As states look to 2222 implementation, he identified three major issues:

Engagement: Getting the right people in the room and sharing experiences.

Retail/Wholesale tensions: how to address double counting, data sharing, metering

Participation agreements: the need to balance between utility review and access to market

Asim discussed several of the initiatives that are going on at PJM, including a new State Policy Solutions Group to assist states in advancement of their energy policy objectives. Services of this group includes planning, operations, and markets expertise, and understanding of state law and regulation. He noted that bulk of PJM work over the past several years has been focused on MOPR implementation, but he also identified other topics, including the growth of off-shore wind and implementing Order 2222.

Commissioner Dykes discussed the policy goals of Connecticut, notably the greenhouse gas goals, and preferences for energy efficiency and renewables. She noted some concerns between state policy and market operation by the New England ISO, including a letter from NESCO signed by the Governor of five New England states seeking to work with NE-ISO to meet state policy goals on clean energy. As a result of this mismatch between states and NE-ISO, the region experiences higher costs and putting more supply under contract rather than relying on the market. Absent changes, she noted that there is a risk that some customers in the region will overpay and there will be an increasing gulf between states and NE-ISO priorities. She discussed three important topics that will help bridge that gulf:

States are committed to competition and wholesale markets to achieve states goals at lowest cost, however new processes and mechanisms need to be implemented to ensure that grid is adequately invested in while procuring resources, including DER, at lowest cost.

Transmission System Planning - there is no process to inform all stakeholders of the amount and type of transmission infrastructure needed to cost-effectively integrate clean energy resources and DER.

Governance- Need discussions on how to update governance structures to promote discussion and partnerships between RTOs and states, including looking at improving transparency and utilizing the best practices from other RTOs.

Greg described the benefits of participating in PJM, but also significant improvements between PJM and the states. He noted that DER, except for demand response, is not a significant part of the PJM market. He stated that while wholesale costs in PJM are relatively low, transmission costs have been increasing over the past several years. These costs are subject to less transparency and oversight, and higher transmission costs means higher costs for PJM to be recovered from participants.

Day 3: December 9, 2020

Workshop on Balancing Grid Alternatives

Day 3 featured a review of the [National Standard Practice Manual for DER](#) and BCA Framework, hosted by [Julie Michals from E4TheFuture](#) and [Tim Woolf from Synapse](#), and a discussion on Economic Benefits of Resilience Investments from [Pete Larson of LBNL](#).

Tim and Julie led the attendees through an application of the National Standard Practice Manual when reviewing the BCA of DER. This included looking at hypothetical applications and use cases, asking participants to decide what should go into a primary BCA test and a secondary test, when to use a primary test versus a secondary test, and how to make decisions on proposed investments that may be just under or over the cost-effectiveness threshold.

Pete presented on recent research that looks at costs and benefits of utility investments to support resilience. Specifically, Pete looked at long duration outages, such as from hurricanes, tornados, extreme weather, and wildfires, and wanted to under the broader economic impacts of those outages and the ability of utility investments to provide benefits. His research found that utilities often include statistics on past events, but do not always identify the dollar costs to customers, or broader economic impacts.