WEBINAR

Electricity Market Outcomes and RTO Governance

Speakers:
- Dr. Seth Blumsack, Penn State University
- Dr. Stephanie Lenhart, Boise State University
- Mark James, Vermont Law School
- Jeff Dennis, Advanced Energy Economy
- Kate Konschnik, Duke University (moderator)

When: Wednesday, June 2, 1–2:15 p.m. EDT
Details and RSVP: bit.ly/RTOGovWebinarJune2
Who makes decisions about how electricity is produced and delivered to your home and work?

How do regional transmissions organizations (RTOs) accommodate new technology?

RTOs have rightly focused on reliability. What additional values should guide them through the energy transition?
The Political Complexity of RTO Governance

(or, how I learned to stop worrying and love the bomb qualitative data)

“We are 17 years into it. We’re making it up as we go.”
--PJM Stakeholder

Seth Blumsack
Pennsylvania State University and Santa Fe Institute

2 June 2021

Acknowledgements: NSF SES-1261867, Alfred P. Sloan Foundation G-2019-12335
Insights from PJM Interviews

• Perception #1: When we interviewed stakeholders who were Generation Owners, they expressed a belief that “load” (i.e., stakeholders who represent electricity consumers) had tremendous political power.

• Perception #2: When we interviewed stakeholders who represented Load, they expressed a belief that Generation Owners had tremendous political power.

• These beliefs are “hypotheses” – we can compare beliefs to detailed voting data from the PJM stakeholder process. Which beliefs are consistent with the data, and which are not?
Yoo and Blumsack, *Journal of Regulatory Economics*, 2018
We can also use the network structure to identify “swing voters” who are able to push close votes one way or the other.
Regional Transmission Organization Institutional Design and Formation of Market Rules for Storage Participation

RTOGov Webinar
June 2, 2021

Stephanie Lenhart, Boise State University
Research Question

What are the causal mechanisms that describe relationships between institutional design and outcomes in storage market participation?

<table>
<thead>
<tr>
<th>States Served</th>
<th>CALIFORNIA ISO</th>
<th>SOUTHWEST POWER POOL</th>
<th>ISO-NEW ENGLAND</th>
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<tbody>
<tr>
<td>Origin</td>
<td>State Legislation</td>
<td>Power Pool</td>
<td>Power Pool</td>
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<td>Restructuring Status</td>
<td>Partial Retail Competition</td>
<td>No Retail Competition</td>
<td>No Retail Competition</td>
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<td>Capacity Market</td>
<td>No Market</td>
<td>No Market</td>
<td>Retail Competition</td>
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<tr>
<td>Net Imports</td>
<td>22%</td>
<td>Net Exporter</td>
<td>Mandatory</td>
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*~80% of California and a small portion of Nevada


Share of Energy Generation by RTO

Sources: CAISO, 2020, SPP, 2021, ISO-NE 2021
<table>
<thead>
<tr>
<th>Year</th>
<th>California ISO</th>
<th>Southwest Power Pool</th>
<th>ISO-New England</th>
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<tbody>
<tr>
<td>2008</td>
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<td>Alternative technology regulation resource product</td>
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<td>2010</td>
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<td>Request for Comments: Electric Storage Technologies (AD10-13)</td>
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<td>2010</td>
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<td>AB 2514 storage procurement mandate</td>
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<td>2011</td>
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<td>Non-generator resource model</td>
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<td>2014</td>
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<td>Joint energy storage roadmap process</td>
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<td>2014</td>
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<td>DER participation model</td>
<td>ISO-NE white paper on storage</td>
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<td>2016</td>
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<td>RTO/ISO Data Requests and Request for Comments Regarding Potential Barriers to the Participation of Electric Storage Resources</td>
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<td>Phase 1 state-of-charge enhancements</td>
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<td>Integrating wholesale markets and state public policy (IMAPP) problem statement</td>
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<td>Order 841 NOPR</td>
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<td>Improvements to dispatchable asset related demand product</td>
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<td>2016</td>
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<td>Regulations for the Solar Massachusetts Renewable Target (SMART) program including a storage adder</td>
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<td>2017</td>
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<td>FERC Storage Order 841 Final Rule</td>
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<td>2017</td>
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<td>Holistic Integrated Tariff Team approved by Board</td>
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<td>2017</td>
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<td>Phase 2 demand response</td>
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<td>2017</td>
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<td>Storage in generator interconnection studies</td>
<td>Enhanced storage participation model for projects &gt; 1MW &quot;in front of meter&quot;</td>
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<td>2018</td>
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<td>Order 841 Compliance Filing</td>
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<td>2019</td>
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<td>Phase 3A dispatchable demand response</td>
<td>Protests and comments</td>
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<td>Holistic Integrated Tariff Team Report</td>
<td>Future Grid Initiative</td>
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<td>Phase 3B allow storage to bid increases and decreases in load</td>
<td>Storage white paper</td>
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<td>2020</td>
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<td>Phase 4 refinement to DER and storage participation models</td>
<td>Phase 2 energy storage resources</td>
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<td>Electric Storage Resources Steering Committee and Electric Storage Resource Task Force</td>
<td>Storage resources and pathways to a future grid</td>
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<td>Policy Tools</td>
<td>CAISO</td>
<td>SPP</td>
<td>ISO-NE</td>
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<td>External Trigger</td>
<td>State policy</td>
<td>Technology adoption</td>
<td>Functional participation: generation or demand</td>
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<td>Communication</td>
<td>State roadmapping</td>
<td>Holistic Integrated Tariff Team</td>
<td>Multiple state policies and FERC</td>
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<td>Decision Process</td>
<td>Many early initiatives</td>
<td>New initiative</td>
<td>Standard</td>
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<td>Context</td>
<td>Rolling blackouts and wildfires</td>
<td>Transmission constraints</td>
<td>Two initiatives</td>
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<td>Dependence on natural gas</td>
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**Insights**

“You do actually substantially need market participants to lead and share their experience, not only from their own personal competitive positions for their business but they’re also often bringing solutions.”

“We are starting to run into issues no one has run into before and that requires a lot of engagement”

“We are moving away from issues of how do we [storage] participate to how do we operate”

The SPP tariff, “says that if there's a state policy for renewables, that it will be considered in a transmission planning process”

*Source: Lawrence Berkeley National Laboratory, 2021*
Conclusions

• Storage does not fit neatly into market participation models or formal interest-based sectors

• Outside policy and regulatory actions drive change

• Including knowledge holders can reduce formal protests and improve harmonization of technology-neutral market rules with state policy goals

• A relatively small number of stakeholders engaged in storage filings and the board’s primary influence is over staff

• Context shapes attention and resources devoted to issues

Policy Implications

• Market rule development is iterative, requires real-world testing, is difficult to time, and is built on existing foundations

• State policy and regulatory agencies need to understand RTO processes

• Organizational flexibility and adaptation is needed to integrate knowledge holders

• RTO institutional design is varied in ability to achieve different public purposes
eNGO Participation in RTO Stakeholder Governance Processes

Rules determine and shape outcomes in RTO markets and planning processes
  • Including the integration of renewables and participation of distributed energy resources

Stakeholders participate in the creation of and amendments to rules

There are rules that determine how stakeholders participate in the creation of the rules

Stakeholders are more than market participants

Environmental NGOs represent a key element of the public interest

Takeaways
  • Rules are important
  • Rules can promote or inhibit effective participation of eNGOs
Issues in RTO Governance Processes

Transparency into governance processes
• Committee level meetings and decisions
• Board level meetings and decisions

Lack of accountability
• Private governance of a public interest function
• Not subject to rulemaking requirements or administrative procedures protections
  • E.g., no obligation to consider comments

Inertia
• Influence of existing stakeholders

Board composition
“Having a vote is a weak tool”
Obstacles to Effective Participation

Participation expenses
• Application and exit fees
• Annual fees
• Resource costs to participate in governance processes

Absence of voting rights

Limits on voting rights
• Capped voting allocation

Dilution of voting power
• Paired with other stakeholder groups
Options for Enhancing Participation

Big Picture
- RTOs/ISOs need to revisit their mission statements
- Increased Board involvement in establishing RTO culture
- FERC - Greater interest in and oversight of RTO stakeholder governance processes
  - Revisit Order 719

Specific Direct Actions
- Environmental specific advisory groups
- More formal participation opportunities
  - Rights of access to senior decision-making committees
  - Input into selection of Board members
- Dedicated funding for enhanced engagement in key areas
  - Transmission planning, load forecast models, etc.
Reactions from an RTO Stakeholder

Jeff Dennis,
Managing Director and General Counsel
Advanced Energy Economy (AEE)
Thank you!

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