

WEBINAR

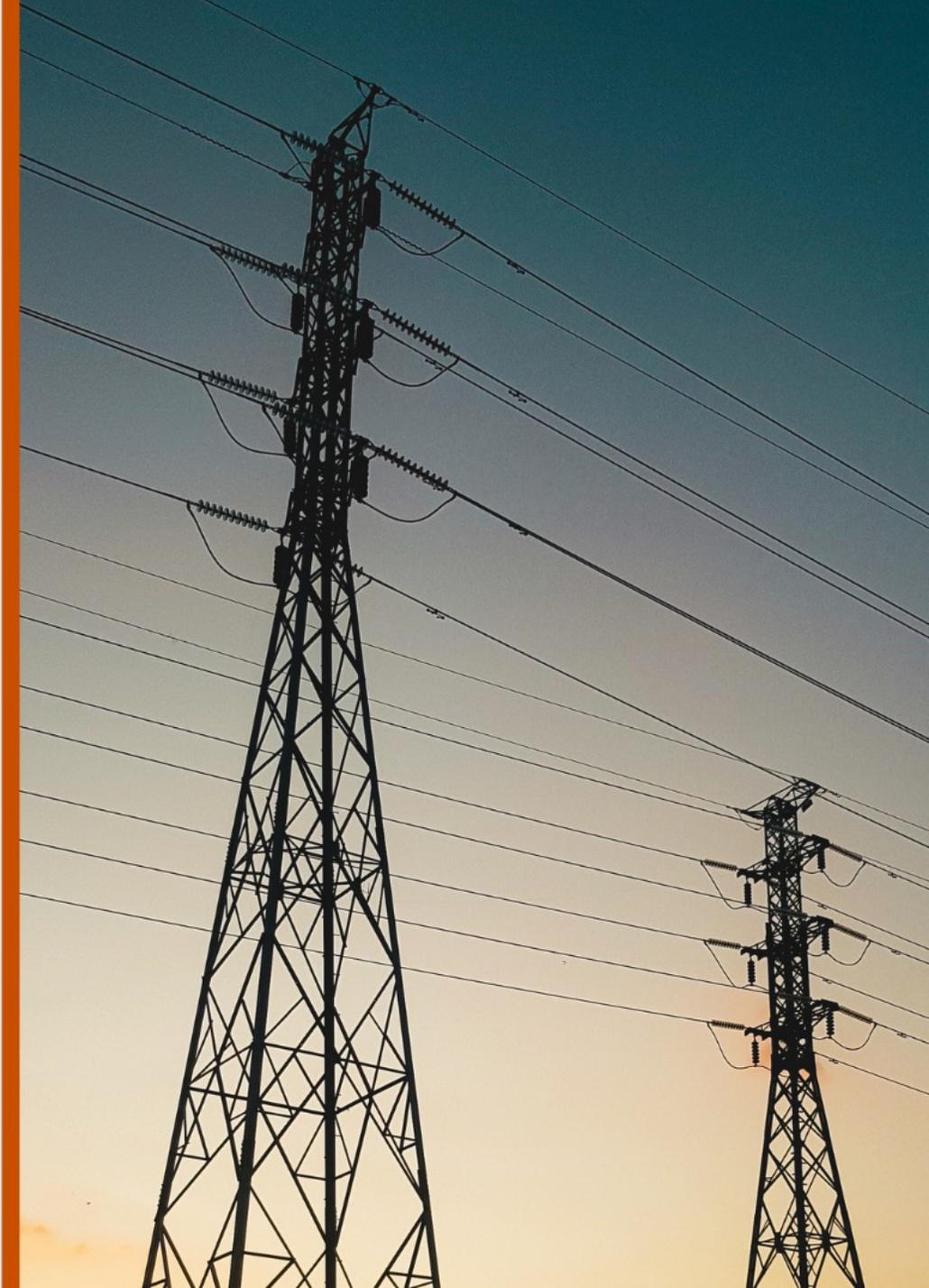
Electricity Market Outcomes and RTO Governance

Speakers:

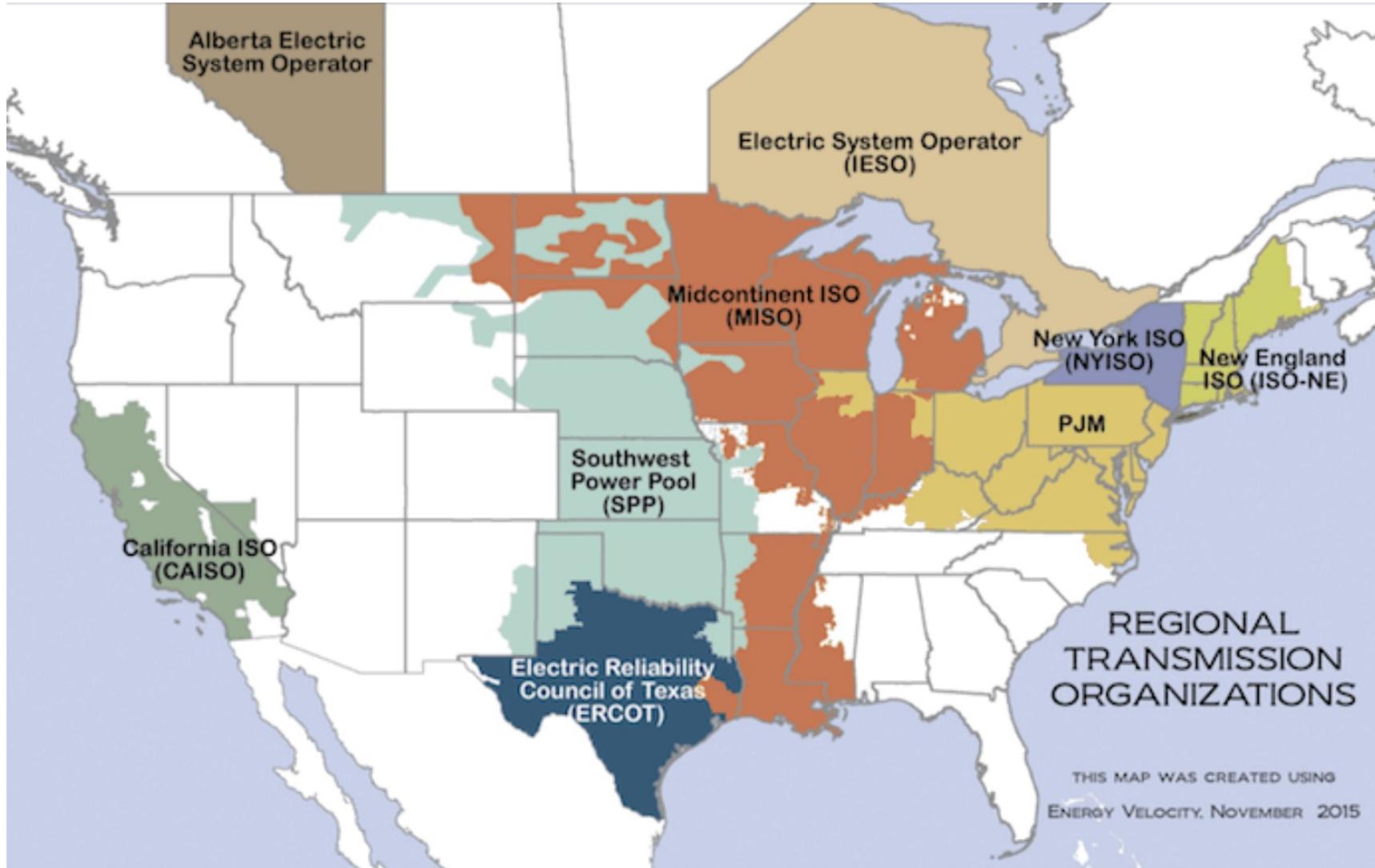
- **Dr. Seth Blumsack**, Penn State University
- **Dr. Stephanie Lenhart**, Boise State University
- **Mark James**, Vermont Law School
- **Jeff Dennis**, Advanced Energy Economy
- **Kate Konschnik**, Duke University (moderator)

When: Wednesday, June 2, 1–2:15 p.m. EDT

Details and RSVP: bit.ly/RTOGovWebinarJune2



Regional Transmission Organizations/ Independent System Operators



QUESTIONS

- 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)



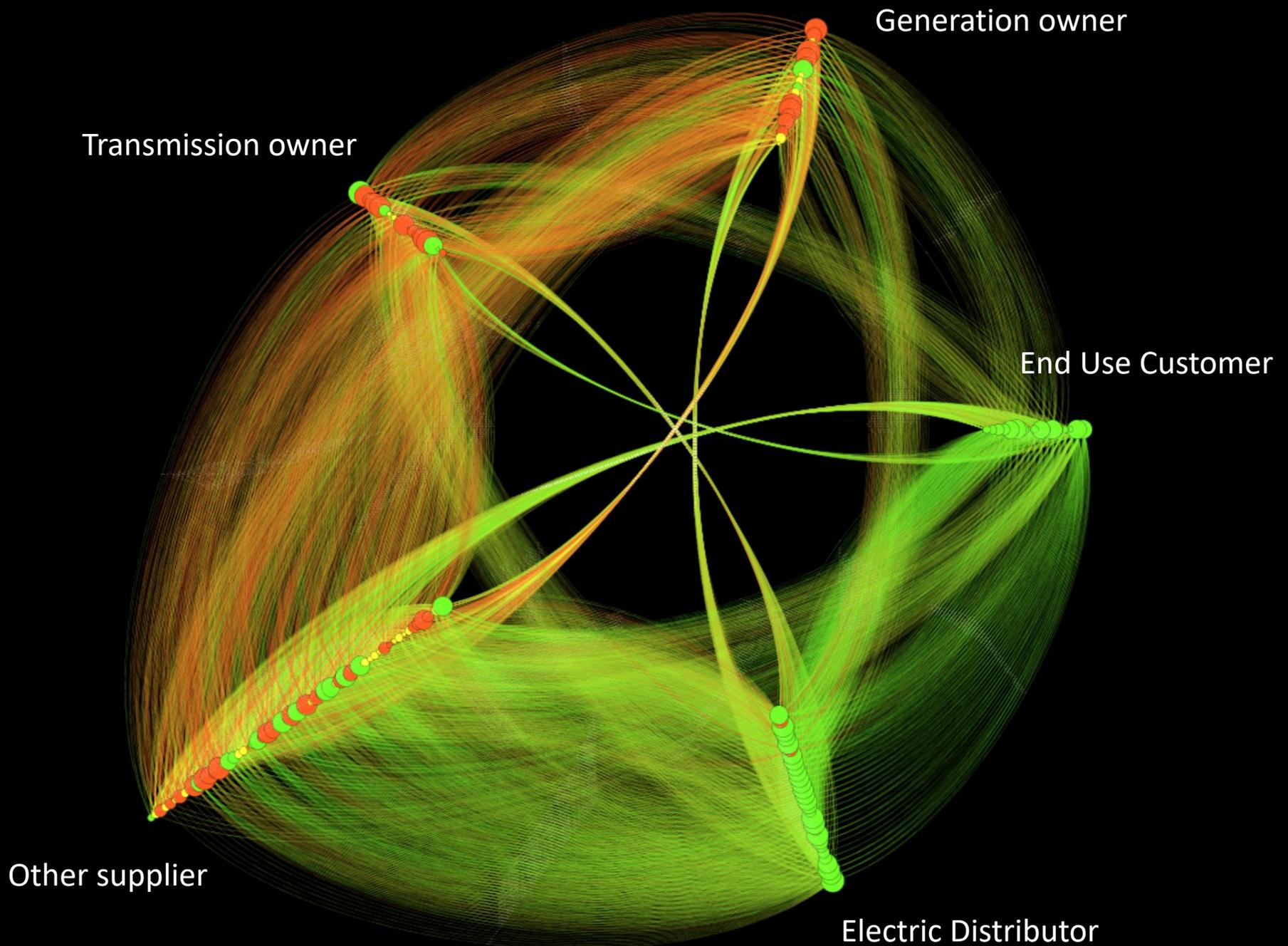
Seth Blumsack
Pennsylvania State
University and Santa
Fe Institute

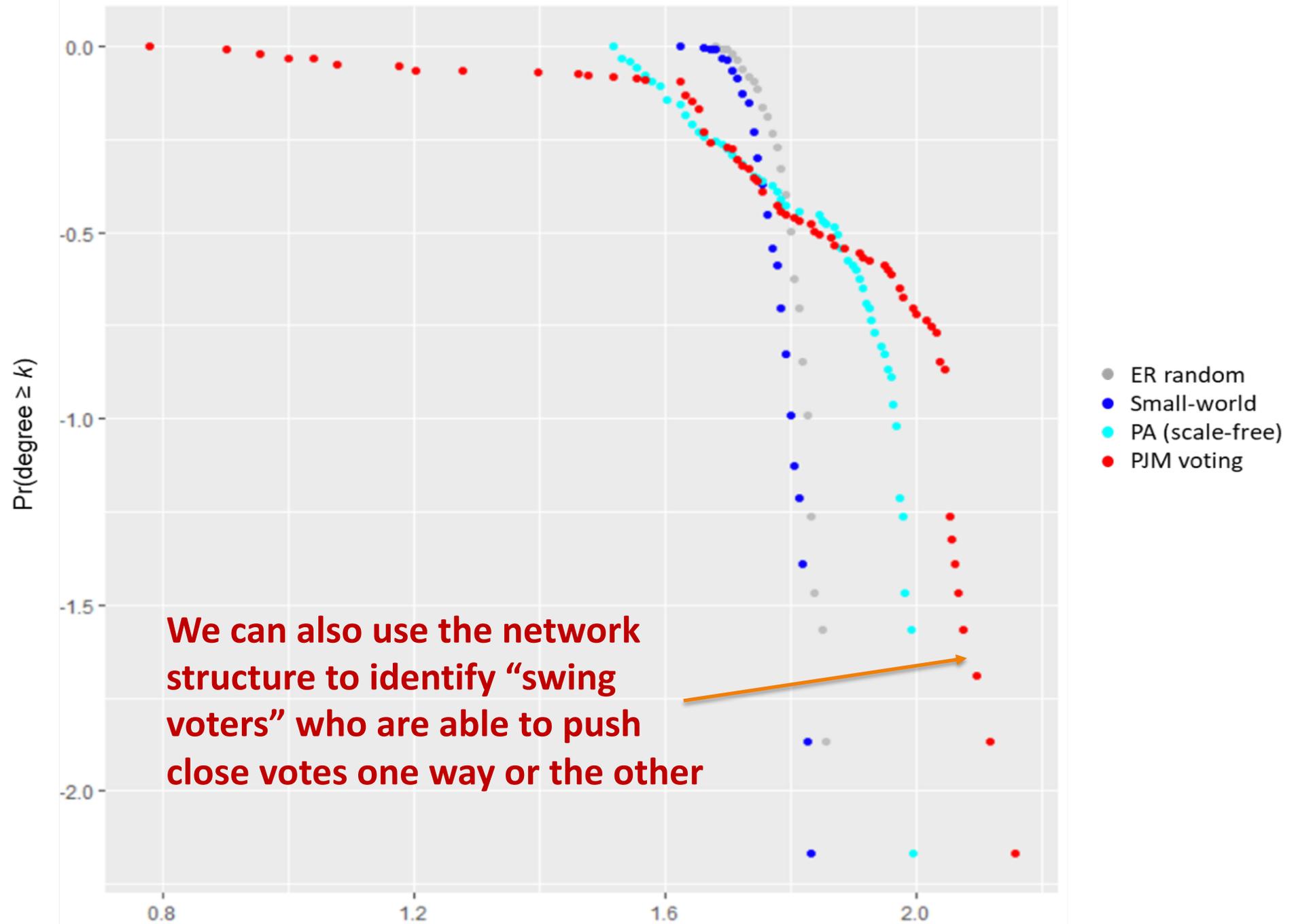
2 June 2021

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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?**





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

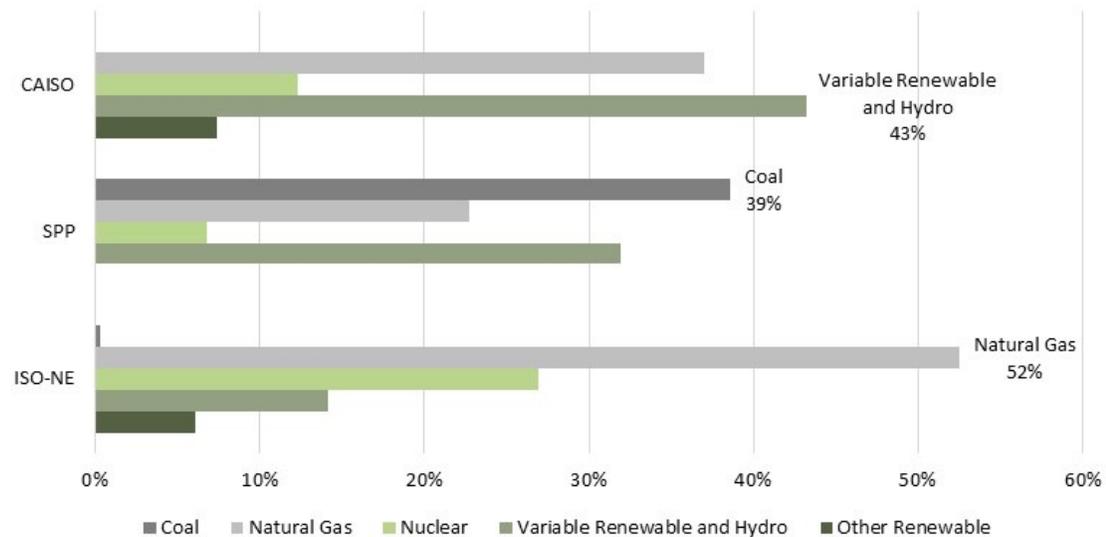
What are the causal mechanisms that describe relationships between institutional design and outcomes in storage market participation?

	CALIFORNIA ISO	SOUTHWEST POWER POOL	ISO- NEW ENGLAND
States Served	1*	14	6
Origin	State Legislation	Power Pool	Power Pool
Restructuring Status	Partial Retail Competition	No Retail Competition	Retail Competition
Capacity Market	No Market	No Market	Mandatory
Net Imports	22%	Net Exporter	16%

* ~80% of California and a small portion of Nevada

Sources: ISO-NE, 2019, 2021; SPP 2019, 2021; CAISO, 2019, 2020; 21st Century Power Partnership, 2017

Share of Energy Generation by RTO



Sources: CAISO, 2020, SPP, 2021, ISO-NE 2021

Year	California ISO	Southwest Power Pool	ISO-New England
2008			Alternative technology regulation resource product
2010	Request for Comments: Electric Storage Technologies (AD10-13)		
	AB 2514 storage procurement mandate		
2011	Non-generator resource model		
2014	Joint energy storage roadmap process		
	DER participation model		ISO-NE white paper on storage
	RTO/ISO Data Requests and Request for Comments Regarding Potential Barriers to the Participation of Electric Storage Resources		
2016	Phase 1 state-of-charge enhancements		Integrating wholesale markets and state public policy (IMAPP) problem statement
	Order 841 NOPR		
			Improvements to dispatchable asset related demand product
2017			Regulations for the Solar Massachusetts Renewable Target (SMART) program including a storage adder
	FERC Storage Order 841 Final Rule		
2018		Holistic Integrated Tariff Team approved by Board	
	Phase 2 demand response	Storage in generator interconnection studies	Enhanced storage participation model for projects > 1MW "in front of meter"
	Order 841 Compliance Filing	Order 841 Compliance Filing	Order 841 Compliance Filing
2019	Phase 3A dispatchable demand response	Holistic Integrated Tariff Team Report	Protests and comments
	Phase 3B allow storage to bid increases and decreases in load	Storage white paper	Future Grid Initiative
2020	Phase 4 refinement to DER and storage participation models	Phase 2 energy storage resources Electric Storage Resources Steering Committee and Electric Storage Resource Task Force	
2021			Storage resources and pathways to a future grid

	CAISO	SPP	ISO-NE
Policy Tools	Diverse technology participation models	No storage participation	Functional participation: generation or demand
External Trigger	State policy	Technology adoption	Multiple state policies and FERC
Communication	State roadmapping	Holistic Integrated Tariff Team	Standard
Decision Process	Many early initiatives	New initiative	Two initiatives
Context	Rolling blackouts and wildfires	Transmission constraints	Dependence on natural gas

Insights

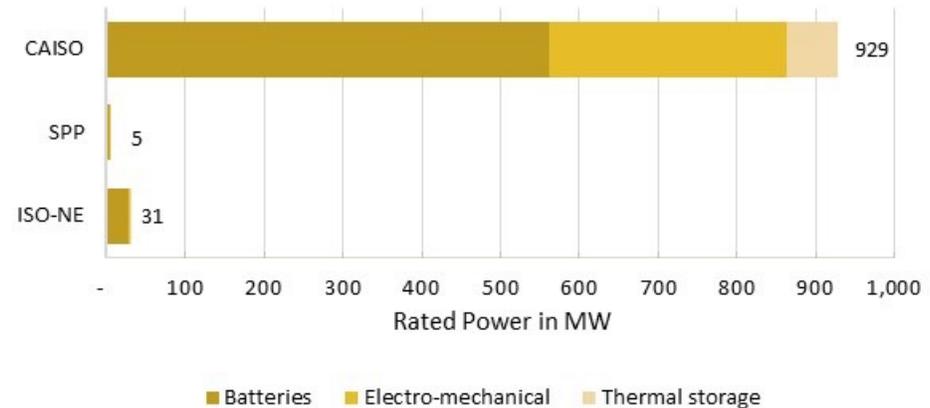
“You do actually substantially need market participants to lead and share their experience, not only from their own personal competitive positions for their business but they're also often bringing solutions.”

“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”

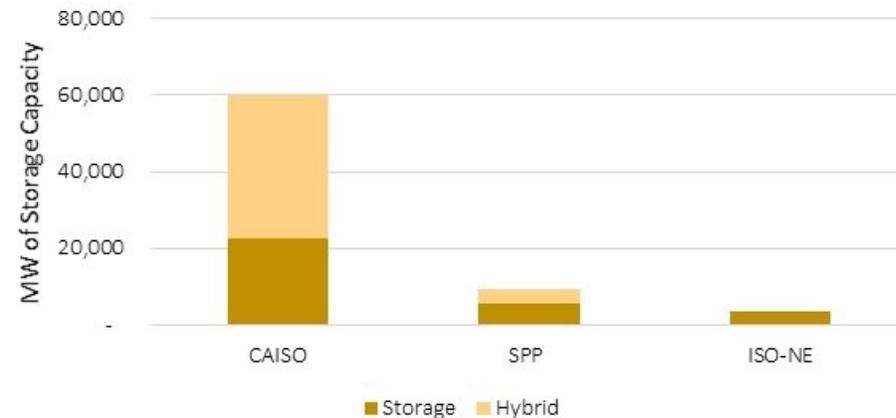
The SPP tariff, “says that if there's a state policy for renewables, that it will be considered in a transmission planning process”

Rated Power of Energy Storage Projects by RTO
(2020)*



*Does not include pumped hydro storage.
Source: Sandia National Laboratory, 2020

Storage and Hybrid with Storage Projects Seeking
Transmission Interconnection as of end of 2020



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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