BY SHOW OF (WHICH) HANDS: Empirical Analysis of Regional Transmission Organization Stakeholder Voting

BACKGROUND

80s: Cost-of-Service Regulation of Vertically Integrated Infrastructure
90s: Privatization of Generation & Open Access to Transmission, FERC Call for RTO Formation
2000s: RTOs Maturing (Timeframe of Study)

RTO Responsibilities:
• Dispatch of Electric Generation
• Transmission and Generation Infrastructure Planning
• Market Management and Monitoring
• Non-Profit Collection of Transmission Line Compensation

Establish/Host Stakeholder Committees that Design the Electricity Market via Vote:

\[ V_k = \sum_{j=1}^{n_k} \delta_j - a_k \]

Where:
- \( V_k \) is the sector vote score
- \( \delta_j \) is the affirmative vote by \( j \)-th voter
- \( n_k \) is the number of voters in attendance in sector \( k \)
- \( a_k \) is the number of abstentions by voters

\[ V = \sum_{k=1}^{5} V_k \]

\[ 3.335 \leq V < 3.335 \]

RESULTS

• 46 PJM Members Committee Rule Proposal Votes
• Zero-Inflated Vote Count Distribution – Two Stages of Regression (Binary: “Active”, Poisson Count)
• Capacity Market (CM) is Most Frequent Issue Category
• Generation Owner & Other Supplier Sector Less Participatory Than Other Sectors
• Large & Natural Gas GO More Participatory Than Small & Renewable GO

EX: FMU ADDER VOTE

| Sector | Eligible | Attended | Yes | No | Abstain | V
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<td>56</td>
<td>20</td>
<td>52</td>
<td>( V = 3.276 )</td>
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\[ R = pB - c + f \]

| \( R \) | Net Return to Voting
| \( p \) | Probability of Casting a Pivotal Vote
| \( B \) | Benefit of Rule Proposal
| \( c \) | Cost of Voting
| \( f \) | Fulfillment of Civic Duty to Grid

…If (1.) Confirmed, Would Marginal Participation of a Less Participatory Stakeholder Class Matter?

OBJECTIVES/METHODS

Compile Northeastern RTO Senior-Level Stakeholder Voting Data & Determine Patterns in 2010 Decade (Focus on PJM in this Analysis):
• Which Market/Operational Levers are Being Deliberated?
• Who is Participating?

Econometric Tests of:
1. Claims that Stakeholder Committees are “Private Clubs” for Incumbents
2. Pivotal Voter Model: Participation is Driven by Net Return to Voting

\[ V = 3.276 \] FAILED (0.057 Below Threshold)

• Proposal to Reduce Frequently Mitigated Unit (FMUs) “Adders” from 112 units to 5 units
• Revenue Stream (Subsidy to “Peakers” + CM)
• GO & OS Killed the Rule Proposal – Two Additional “Yes” Votes in GO Sector Would Pass Threshold
• Independent Market Monitor Estimated FMU “Adders” were approximately $79MM in 2012