RTO Cost Benefit Analysis

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Why C/B Studies?

Estimate social benefits and costs of something, but what is it?
  • Wholesale Competition?
  • Retail competition?
  • RTOs?
  • SMD?

Difficult to disentangle now that we’re 10 years down the road
Nature of Benefits

Short-run benefits

• Efficient dispatch/congestion management
• Non-discriminatory access

Long-run benefits

• Transmission planning/expansion pricing?
• Generator efficiency?
• Demand response?
• Reliability?
• Depancaking?
• Market power mitigation?
Nature of Costs

Mostly RTO administrative costs

Little, if any, savings in the cost of utility control centers, as yet

• Many utilities plan more staff, not less, to deal with RTO interface
Prior Studies

Four major studies summarized (according to Steve—see next slide)

<table>
<thead>
<tr>
<th></th>
<th>Benefits</th>
<th>Incremental Admin Costs</th>
<th>Total Admin Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short-Run</td>
<td>Long-Run</td>
<td></td>
</tr>
<tr>
<td>ICF</td>
<td>$400 - 800</td>
<td>$1,000 - $5,000</td>
<td>$760</td>
</tr>
<tr>
<td>RTO West</td>
<td>$250</td>
<td>N/A</td>
<td>$170</td>
</tr>
<tr>
<td>SEARUC</td>
<td>$50 - 300</td>
<td>$400 - $600</td>
<td>$300</td>
</tr>
<tr>
<td>DOE</td>
<td>$600- 800</td>
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</tr>
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RTO/SMD Benefits and Costs

($ million per year)
## Split of “SR/LR” Benefit In Table of Prior Studies

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<th>SR</th>
<th>LR</th>
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</thead>
<tbody>
<tr>
<td><strong>ICF</strong></td>
<td>Tx Only case; mostly production cost savings</td>
<td>Adds generation efficiency and demand response</td>
</tr>
<tr>
<td><strong>RTO West</strong></td>
<td>Production cost savings (not congestion savings)</td>
<td></td>
</tr>
<tr>
<td><strong>SEARUC</strong></td>
<td>Mostly production cost savings</td>
<td>Adds participant funding benefit</td>
</tr>
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<td>Production cost savings (not consumer savings)</td>
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</table>
Lessons

Prior studies are remarkably similar:

• SR Benefit is about $0.20/MWh, LR Benefit is about $0.35–$1.00/MWh
• Incremental cost is about $0.24/MWh, Total cost is about $0.44/MWh
• Effectively no net benefit in SR because RTO costs roughly equal dispatch cost savings

3 of the studies attempt to estimate “LR benefits” based on more uncertain arguments (exception was RTO West study)

• Mixed results due to uncertainty as to what’s the “Base Case”

RTOs are expensive. Current G&T dispatch center costs for 84 largest jurisdictional utilities is about $400 M/yr. Estimated RTO costs (DOE study) about $1,400 M/yr with no savings.

• Apparent need for cost control
Are the Lessons Trustworthy?

Of necessity, SR benefits estimated using a hypothetical reduction in “hurdle rates” or “scheduling limits” to simulate improved dispatch

- This is a judgment call–results seem reasonable
- Issue is how much X-inefficiency to build into the base case. Models are “too” efficient, e.g., assume perfect merchant dispatch.

**LR benefits are considerably more speculative**

- Competition or RTO/SMD?

**Studies have not considered potentially increased capital requirements due to greater financial risk**

- Need depends on the base case—post Order 2000 or pre-Order 888?
If Trusted, So What?

SR Benefits are roughly those of power pooling and are not particularly surprising

LR Benefits depend on your point of view:

• Heat rate improvements—SMD or market rates?
• Demand response—Is this a response to competitive pricing or a socialized RTO function to deal with inefficient demand-side pricing?
• Participant funding—shallow (FTRs not needed) or deep expansion of grid (FTRs needed)?

Static analysis does not capture LR risk/rewards

• Shift from small asymmetric risk under cost-based regulation to symmetric, but large, risk under market
  • Risk taking by merchant generation is key

In the absence of merchant development, LR benefits appear to be meager
Unanswered Questions

Merchant development needed for LR benefits?
• How much is merchant risk taking muted in absence of retail choice?
• Does FERC policy by itself point the way to full competition?
• Or does federal/state politics play a role?
• Without LR benefits, can RTOs pass a C/B test?

Discrimination, or state-sanctioned preference?
• How are consumers best served ultimately?
  – Native load preference under regulated monopoly
  – Open access and non-preferential access
Conclusion

Studies show SR dispatch savings are absorbed by extra layer of bureaucracy

LR benefits are the key, but:

• More speculative

• Depends on more than RTO/SMD:
  – State decisions and merchant risk-taking

Good news—SR dispatch savings roughly (or almost) pays the rent, while decisions about LR direction are pending