

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)

RTO/SMD Benefits and Costs (\$ million per year)

	Benefits		Incremental Admin Costs	Total Admin Costs
	Short- Run	Long- Run		
ICF	\$400 - 800	\$1,000 - \$5,000	\$760	\$1,400
RTO West	\$250	N/A	\$170	\$400
SEARUC	\$50 - 300	\$400 - \$600	\$300	\$300
DOE	\$600- 800	\$1,000 - \$1,100	\$760	\$1,400

Split of “SR/LR” Benefit In Table of Prior Studies

	SR	LR
ICF	Tx Only case; mostly production cost savings	Adds generation efficiency and demand response
RTO West	Production cost savings (not congestion savings)	
SEARUC	Mostly production cost savings	Adds participant funding benefit
DOE	Production cost savings (not consumer savings)	Adds generation efficiency

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