
Comments in re Graham Weale's Lessons from the USA

*John Parsons, MIT Sloan School of Management and
MIT Center for Energy and Environmental Policy Research
Seminar of the Chaire European Electricity Markets (CEEM),
Université Paris-Dauphine
March 26, 2015*

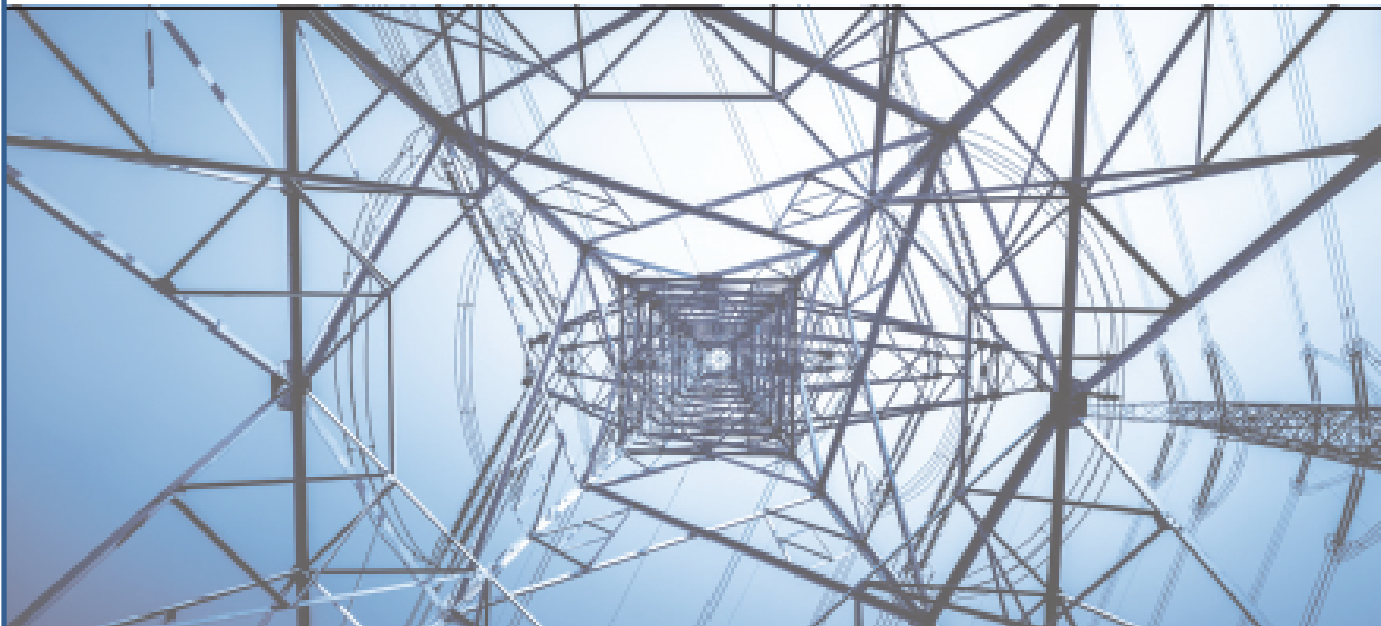
Outline

- New York's REV and the Utility of the Future
- Challenges for Wholesale Markets and Generation Technology Choices
- Other comments

New York's REV and the Utility of the Future

- Yes, it is the hot topic of the day.

THE MIT Utility of the Future STUDY



Prospectus for an Interdisciplinary MIT Energy Initiative Consortium

This research study seeks to determine the defining characteristics of the electric utility of 2025, identifying successful business models, regulatory trends, and transformative technologies.

New York's REV and the Utility of the Future

- Yes, it is the hot topic of the day.
- So confused, it is not even wrong.

The Death of the Traditional Utility

“...the report of my death was an exaggeration.”

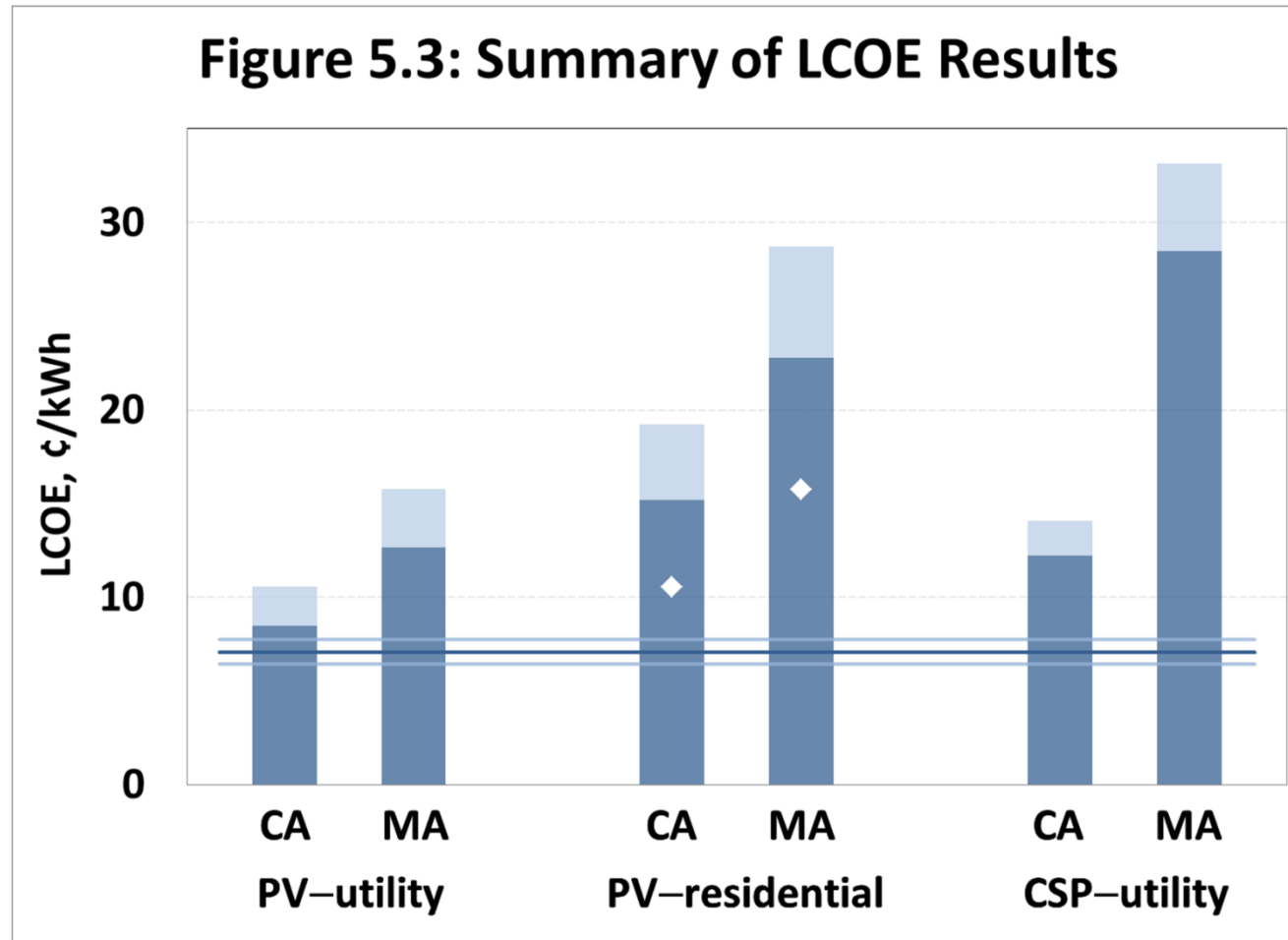
letter from Mark Twain to a friend.

New York's REV and the Utility of the Future

- Yes, it is the hot topic of the day.
- So confused, it is not even wrong.
 - Romanticizes/Idealizes small scale distributed power generation.

Central Station Renewables Are Cheaper Than Distributed

- Results from the MIT Future of Solar Study:



New York's REV and the Utility of the Future

- Yes, it is the hot topic of the day.
- So confused, it is not even wrong.
 - Romanticizes/Idealizes small scale distributed power generation.
 - Central station renewables are cheaper than distributed.
 - Distributed generation INCREASES the cost of wires.
 - Misidentifies the problem in distribution.
 - Fetishizes and exploits the bugaboo of monopoly in the wires.
 - While conveniently overlooking the troublesome public good problem.

New York's REV and the Utility of the Future (cont.)

- Some roots have real potential.
 - Substantive demand response and energy efficiency.
 - Substitute business management for consumer management.
Tough problem of exercising control without undermining choice.
 - But even here, the scale of what can be done in the form of peak shaving may be exaggerated. Fundamentally, a wholesale generation technology problem; less fashionable, but important.
 - New providers of ancillary services.
 - Demands a new approach to interfacing the wholesale market with the distribution system.
 - And, who knows what else.
- Experimentation can be useful.

Challenges for Wholesale Markets and Generation Technology Choices

Wholesale Market Structure

- There is a Standard Market Design, albeit with significant differences in the details of implementation.
 - Open access transmission
 - Bid-based, security-constrained, economic dispatch.
 - Independent System Operators
 - Locational Marginal Prices are universally understood to be useful
 - ...even ERCOT
 - Capacity Markets of some sort or another are widely, if not universally, understood to be necessary.
 - ...even ERCOT?
- Market power remains troublesome. Some opt for cost-based regulation.

The Problem of Capacity is Getting Trickier

- Ancillary services ... black start, voltage support, etc.
- Ramping capability is becoming more important than ever.
 - Because of renewables.
- Natural gas deliverability into New England.
 - Changing generation mix.
 - Closure of coal and oil-fired plants, plus closure of 1/3 nukes.
 - Substituted mostly with gas, plus renewables.
 - Winter competition with heating needs.
 - Forcing changes in approach to capacity.
 - Tactical changes to sync electricity and gas.
 - New rules to qualify gas plants for capacity.
 - New schemes for gas pipes.
- Zero carbon nuclear!

Changing Generation Mix

- Coal is declining precipitously.
 - Price of natural gas.
 - EPA criteria pollution regulations.
 - EPA CO2 regulations.
 - Political fight.
 - No one will invest, regardless.
- The Future of Nuclear?
 - New nuclear plants – delays and cost overruns.
 - Existing nuclear plants .
 - Operating costs are higher than previously appreciated.
 - Current wholesale prices are depressed by natural gas, but also wind.
 - CO2 regulations may save some of them.
- Continued expansion of renewables is certainty, but requires rationalization.

THE END