Monster in the Closet!

Integrating Markets and Public Policies

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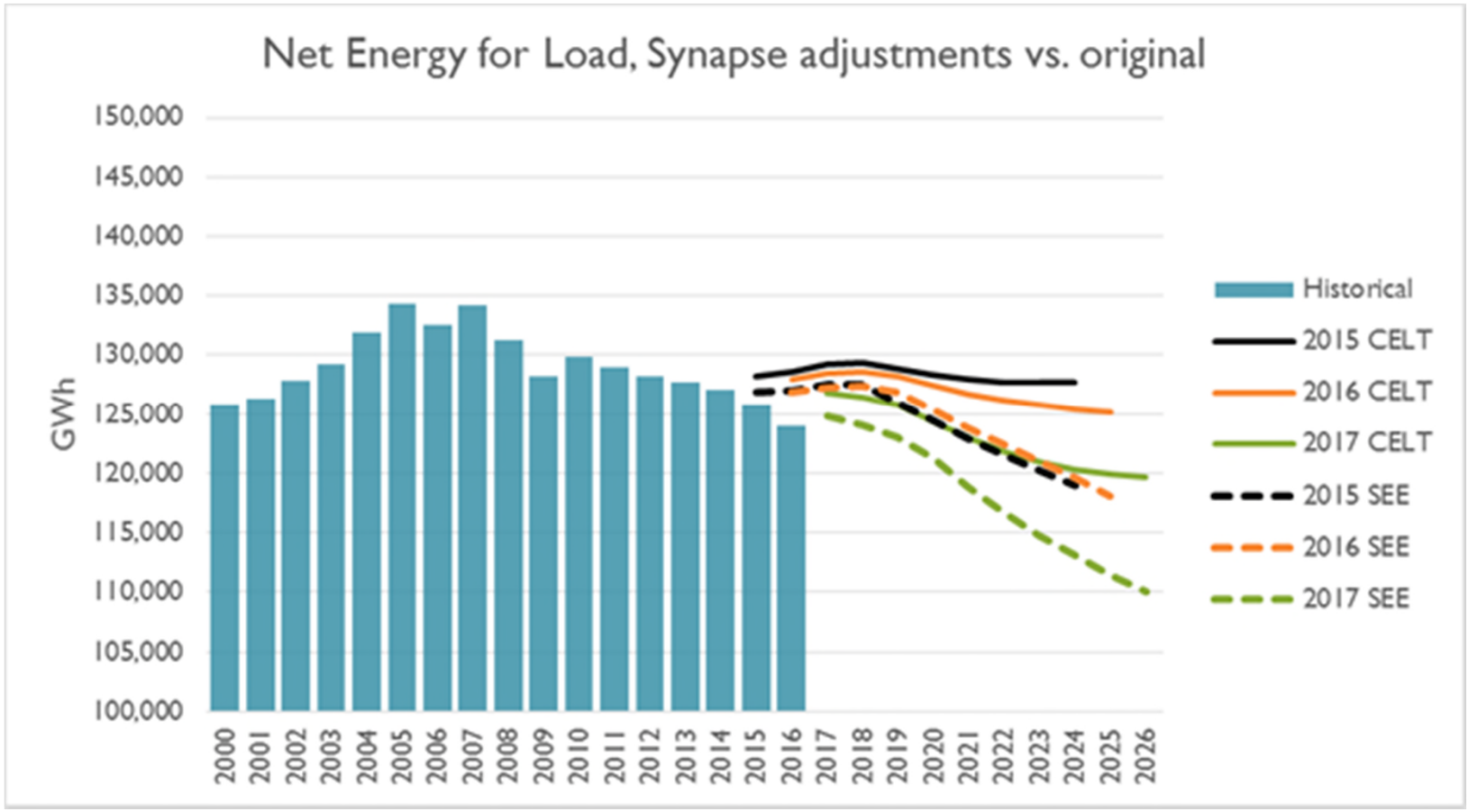
Synapse Energy Economics

- Founded in 1996 by CEO Bruce Biewald
- Leader for public interest and government clients in providing rigorous analysis of the electric power sector
- Staff of 30 includes experts in energy and environmental economics and environmental compliance
- Represent NEPOOL participants in the Alternative Resources and End User sectors.

Background

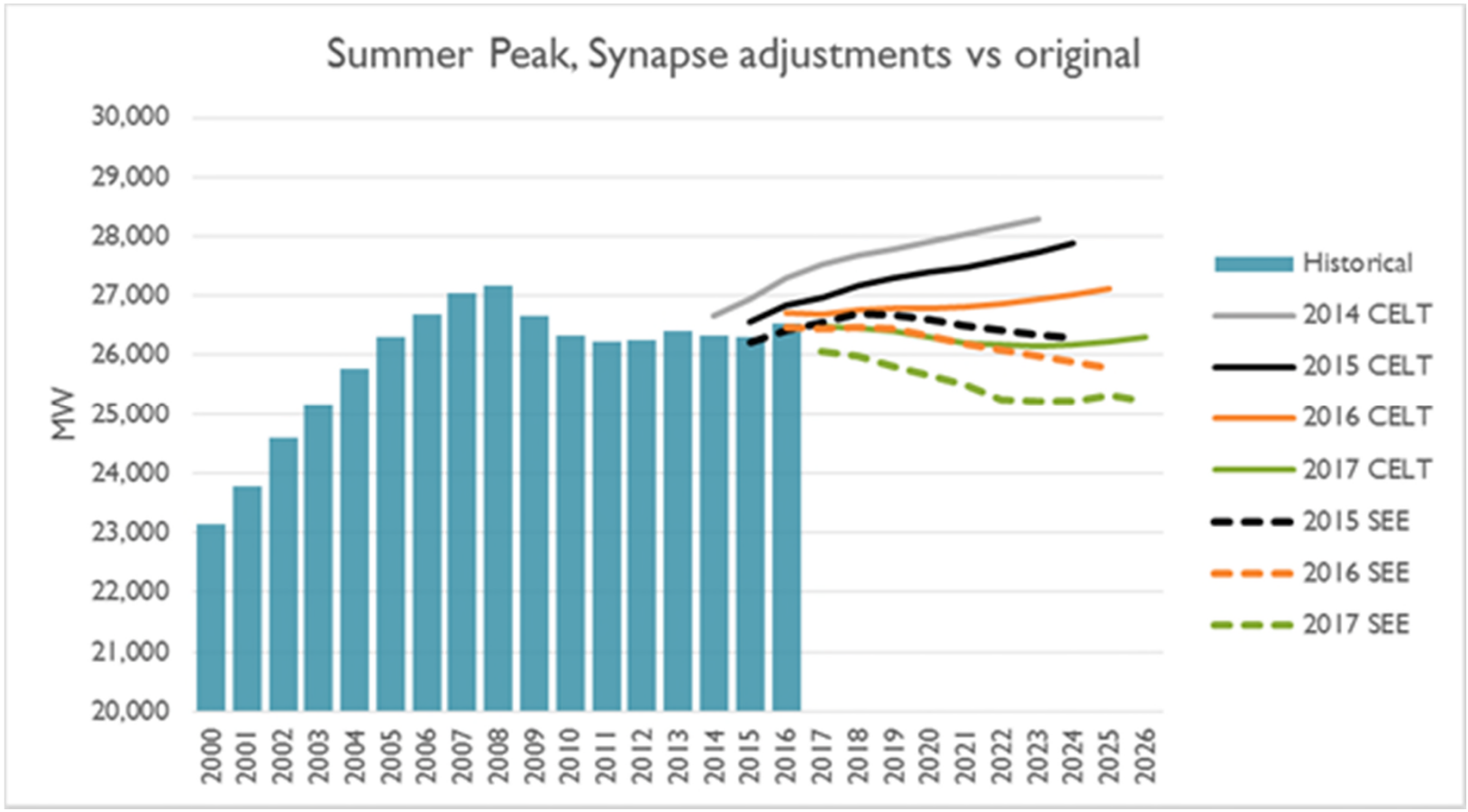
- System peak loads have been flat for a decade; declining in recent years (winter and summer)
- Net energy for load has been declining steadily for a decade
- New England system has had excess capacity resources for two decades
- Over 5,000 MW of new resources in the past 5 FCAs
- "Subsidized" renewables are being singled out as the problem, not just a small component of a bigger "problem": too many supply resources for a shrinking demand

Net Energy for Load



Source: Historical values are weather normalized. From Table 5 of CELT.

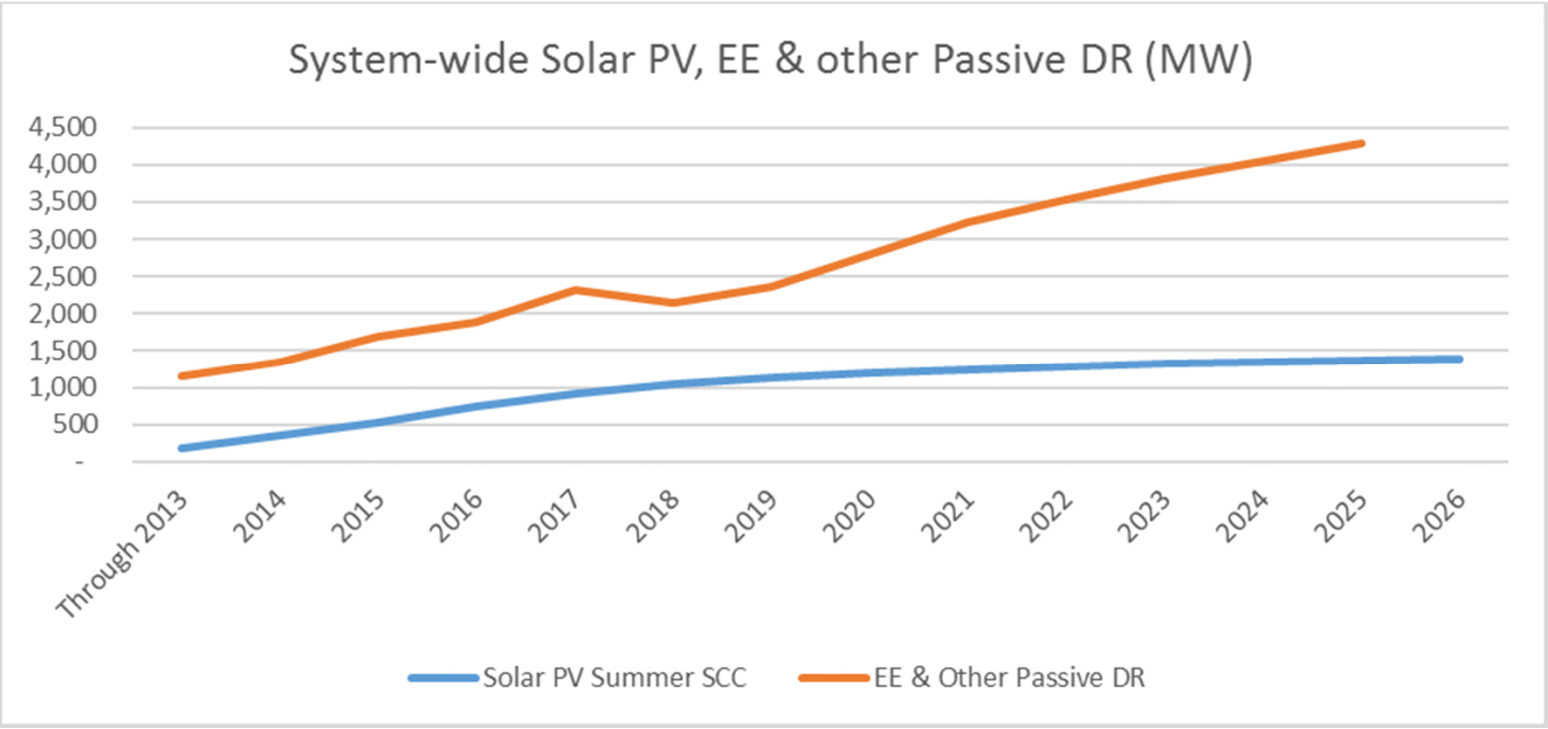
Summer Peak



Source: Historical values are weather normalized. From Table 5 of CELT.

EE and PV

- The region has made steady and substantial investments in energy efficiency and solar PV for more than a decade, because they are low-cost clean energy resources.



Source: Data from most recently available CELT for applicable year.
PV from Tables 3.1 and 3.1.2. EE & Other Passive DR from Table 4.1 through 2020, Table 1.1 through 2026.

Investment Signal?

- Numerous attributes of recent and current market design protect new and existing investments
  - Floor price for the first 7 auctions.
  - Demand Curve dampens downside risk when region is over-supplied
  - New development 7-year price lock
  - FCM PI will reward available resources
- The press releases after each auction appear to be correct. The FCM as it stands is attracting new capacity when needed

New Resources per FCA

Auction	New Resources (a)	RTR Amount (b)	New Gas Units >100 MW
FCA-7	1,045 MW	n/a	Footprint Power
FCA-8	382 MW	n/a	none
FCA-9	1,427 MW	16 MW	Towantic, Medway
FCA-10	1,380 MW	56 MW	Bridgeport, Burrillville, Canal
FCA-11	903 MW	31 MW	None

(a) New resources cleared per auction results filing, excluding imports.
(b) CELT 2017 table 4.2

As recently as FCA-11, several other new units were qualified, but didn't clear. Presumably would build if needed (512 MW Burrillville, 531 MW Killingly, 238 MW Ocean State).

ISO Problem Statement

- Despite this track record of success, the ISO-NE believes that there is a problem.
- "growing tension over the participation of state-subsidized new generation resources in the FCM"
- "Potential for electricity consumer to end up 'paying twice'", and
- "capacity market prices to be depressed below competitive levels" that would "undermine investors' willingness to maintain existing supply and … attract competitive (i.e., unsubsidized) new investment .. When the power system requires it."
  - *Source: ISO Discussion Paper entitled Competitive Auctions with **Subsidized** Policy Resource. April 2017. Page 1 of Executive Summary. (emphasis added)*

It is inappropriate and inaccurate to label upcoming contracts as "subsidized" with no recognition of subsidies to other power resources.

Subsidized resources

- Most resources used for energy production receive assistance (subsidies)
- Fossil resources
  - Accelerated cost recovery (depreciation)
  - Preferential tax rates
  - Tax exemptions
  - Tax benefits for compliance with labor and environmental laws
  - Corporate tax exemptions for some partnerships
  - Tax credits
- Renewable resources
  - Accelerated cost recovery (depreciation)
  - Residential tax credit
  - Production tax credit
  - Investment tax credit

Subsidized resources (con't.)

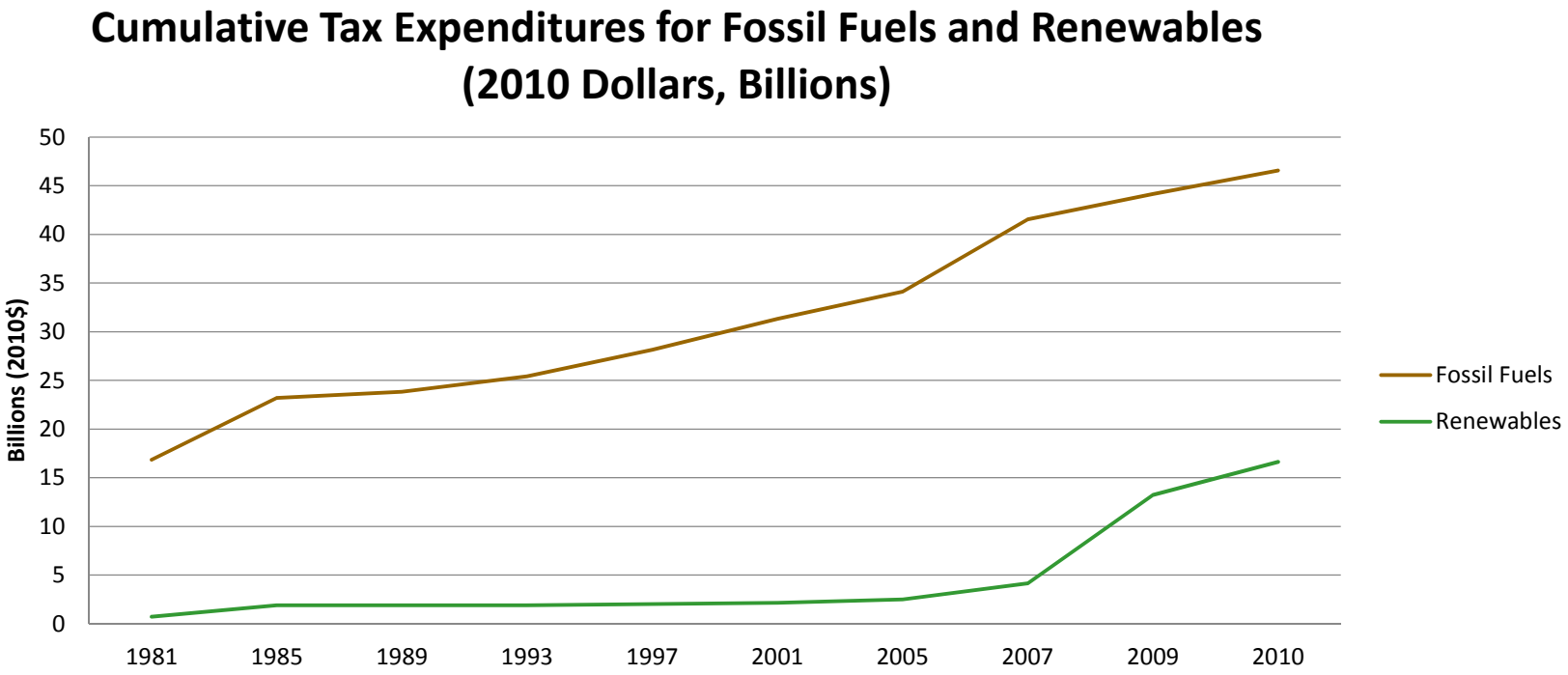
- Nuclear resources
  - Reactor design and safety
  - Insurance (Price-Anderson)
  - Federal (taxpayer) liability for high-level waste
  - Ultimate taxpayer liability for decommissioning
  - ZECs
- Traditional Resources
  - Market design
- Power Engineering April 2016 Headline:

  "U.S. Senate Votes to Restore Funding for Wind Power Research & Development"
  - First line: "The U.S. Senate on Tuesday voted 54-42 to approve a bipartisan amendment providing $95 million in federal funding to wind power research and development."
  - Later in the article: "In addition to $95 million for wind power research, the appropriations bill also gives the Department of Energy **$632 million for fossil fuel research and $1 billion for nuclear power research.**"

Starting Bibliography

- "Estimating U.S. Government Subsidies to Energy Sources: 2002 – 2008." Environmental Law Institute. September 2009.
- "60 Years of Energy Incentives. Analysis of Federal Expenditures for Energy Development." Management Information Services for the Nuclear Energy Institute. October 2011.
- "The Great Giveaway. An analysis of the costly failure of federal coal leasing in the Powder River Basin." Tom Sanzillo. Institute for Energy Economics and Financial Analysis. June 2012.
- "Effect of government subsidies for upstream oil infrastructure on U.S. oil production and global CO2 emissions." Working Paper from Stockholm Environment Institute. February 2017.
- "Picking Winners and Losers: A Structural Examination of Tax Subsidies to the Energy Industry." Tracey M. Roberts. Columbia Journal of Environmental Law. Vol 41:1. April 2016.

Not New Information



Source: Congressional Research Service 2011

From "Subsidies for Fossil Fuels in the Electric Generation Industry." Ann Berwick. Presentation to Restructuring Roundtable. June 2011.

Recognition of Subsidies by FERC

- "The premise of the MOPR appears to be based on an idealized vision of markets free from the influence of public policies. But such a world does not exist, and it is impossible to mitigate our way to its creation. The fact of the matter is that all energy resources receive federal subsidies, and some resources have received subsidies for decades. Yet the MOPR is only concerned with state subsidies, not federal ones, though both can have a similar impact on markets. … Nor does the MOPR examine whether existing resources have previously benefited from a state subsidy. In short, the MOPR suffers from a troubling lack of coherence that calls into question the soundness of its underlying rationale.

- *Source: Chairman Bay, concurring, EL16-92 (2017)*

Chairman Bay, con't

- "Given the pervasiveness of public policies that support resources, I believe the MOPR has proven to be unworkable in practice. … A prompt siting decision or a favorable zoning exemption may provide more economic benefit than a subsidy but only the subsidy is likely to result in application of the MOPR. While these state actions may be more significant than the subsidies subject to the MOPR, they are lawful. The Supreme Court has now made clear that states are permitted to enact a wide range of policy choices that can affect the wholesale market."

Unwind all subsidies?

- Extraordinary task
  - Federal tax code
  - Congressional legislation
  - Executive branch support
  - Vested, entrenched industries
- Failure to address all subsidies
  - “Undue discrimination” under the Federal Power Act?
  - FERC complaints and court appeals
- Do we need to search for a path to achieve new resources with state contracts?

Monster in the Closet?

Year	Addition	Estimated Nameplate (MW)	Estimated Capacity (MW)
2020	Clean Energy RFP	460 MW	100 MW?
2022	MA RE and Hydro	~1,200 MW	1,000 MW?
2023	MA Offshore Wind	400 MW	160 MW?
2025	MA Offshore Wind	400 MW	160 MW?
2027	MA Offshore Wind	400 MW	160 MW?
2029	MA Offshore Wind	400 MW	160 MW?

These amounts are well within the range of what the FCA has already been clearing, when new additions are needed. The monster doesn't seem so scary any more.

Approach

- Potomac Economics FERC statement suggests that 300 MW annually (with roll over) will allow almost all state mandated renewables to fit over next ten years

- Current FCM design includes an RTR cap of 200 MW annually (with roll over), that has been underutilized to date.

- Would an adjustment to the current FCM design be a reasonable approach that would achieve broad support?
- Focus on encouraging entry of clean energy.

Questions?