



De-Carbonizing the Grid

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Panelists

- Jim Marston
- Beth Garza
- Khalil Shalabi



De-carbonizing the grid

- The “Clean Power Plan” will accelerate the retirement of coal that has already been occurring in North America due to the combined effects of:
 - increased renewables, and
 - lower natural gas costs.
- Reduced reliance on coal, increased renewables, and increased reliance on natural gas all act to reduce carbon dioxide emissions.



De-carbonizing the grid

- While coal is likely here for the short- and perhaps medium-term, how about the long-term?
- Will sequestration play a role?
- What is the role of nuclear?
- Will gas also need to decline in long-term?
- Would we be better off with a carbon tax rather than the second- or third- best mechanism of the Clean Power Plan?



De-carbonizing the grid.

- What are the implications for electricity industry participants?
 - Regulated vertically integrated utilities,
 - Municipal utilities and coops,
 - Generation companies in restructured regions,
 - Network owners.
- What changes are necessary in electricity system operation?
- What will be the mix of distributed resources (including renewables) versus grid-scale?



De-carbonizing the grid.

- What is the role of transportation electrification in de-carbonizing energy?
- How do we translate de-carbonization of EU and US to the rest of the world?



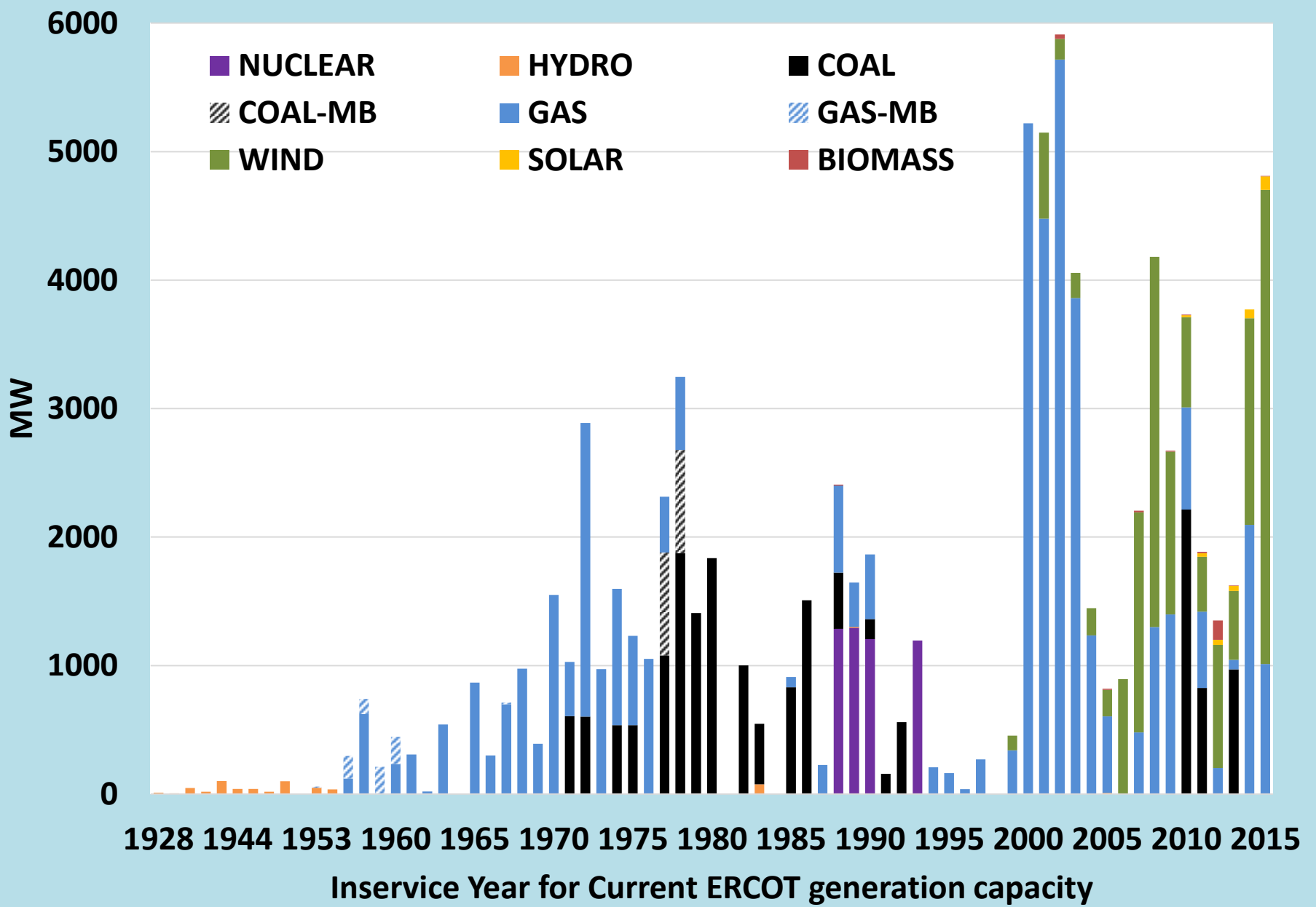
Jim Marston

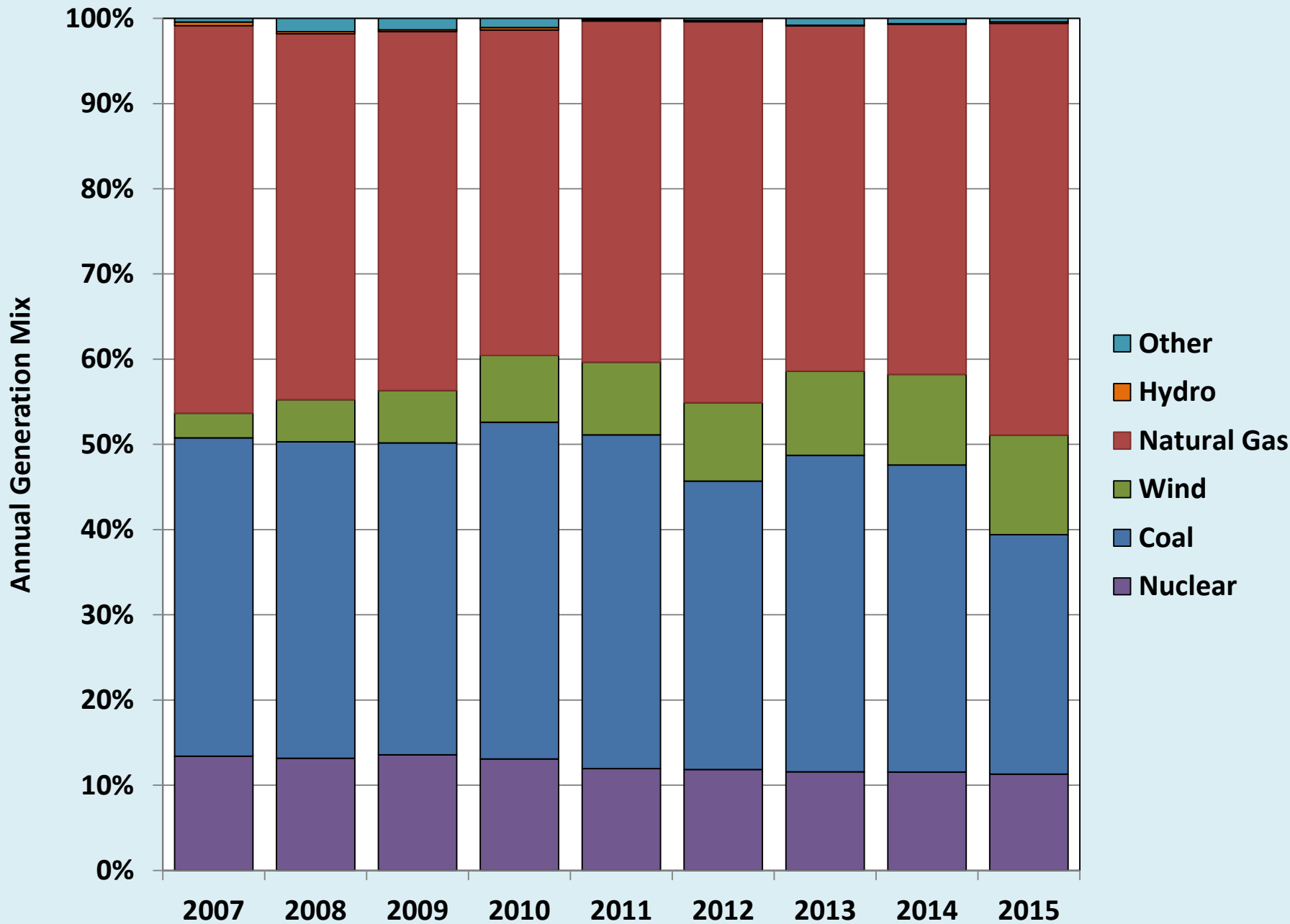
- Regional Director, Texas Office of the Environmental Defense Fund.
- EDF Vice-President for Climate and Energy.



Beth Garza

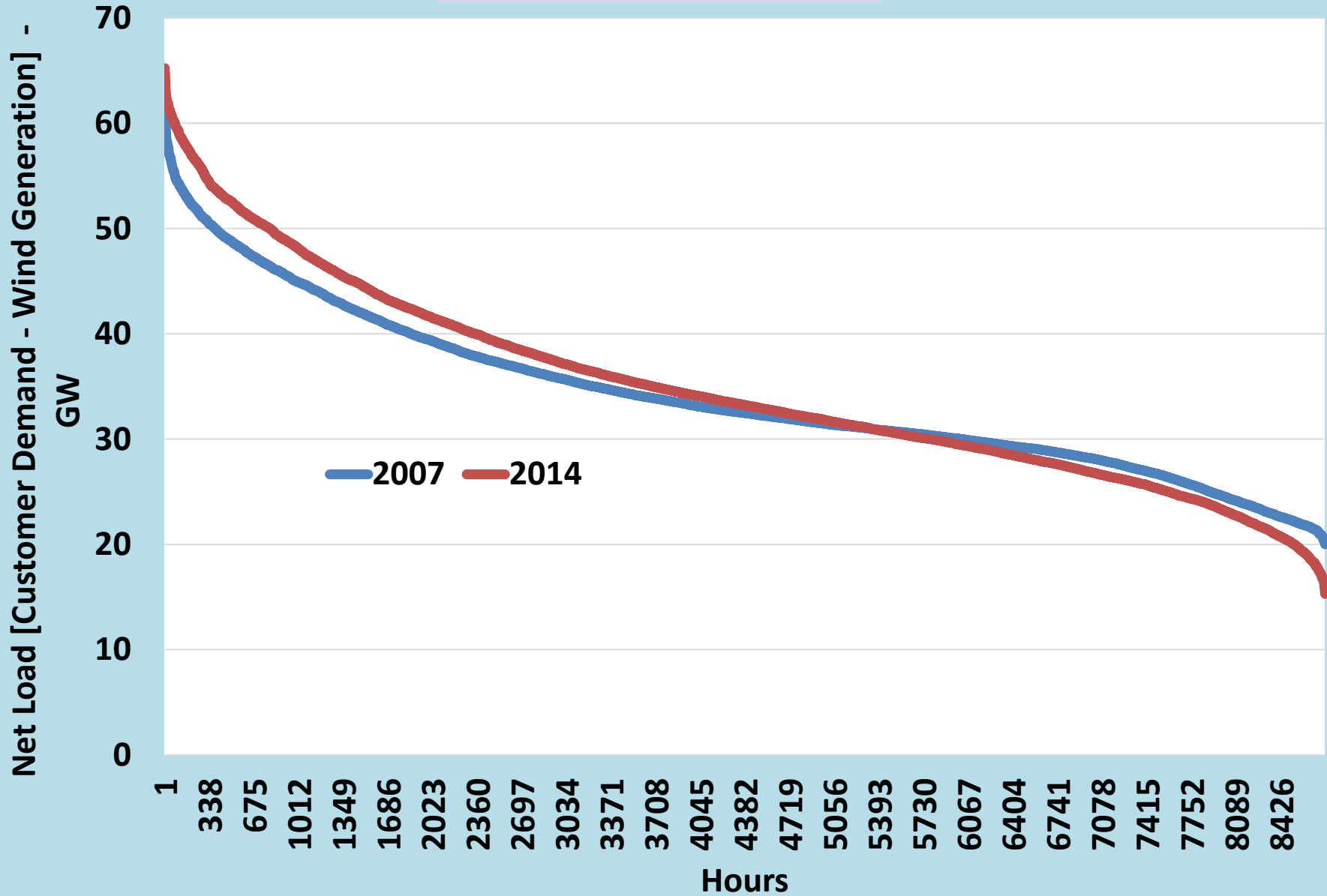
- Vice President, Potomac Economics.
- Director of the ERCOT Independent Market Monitor.
- Previously in leadership roles in generation and transmission planning, system operations, regulatory affairs, and market design.







Net Load has reduced over time





Khalil Shalabi

- Vice President of Energy Market Operations and Resource Planning at Austin Energy.
- Over 20 years experience in R&D, resource planning and acquisition, and project evaluation.