Synapse
Energy Economics, Inc.

Electric System Planning

EPA webinar presentation
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RM10-23 Transmission NOPR

"[W]e propose to require each public utility transmission provider to coordinate with its customers and other stakeholders to identify public policy requirements established by state or federal laws or regulations that are appropriate to include in its local and regional transmission policies."

NOPR, ¶ 65

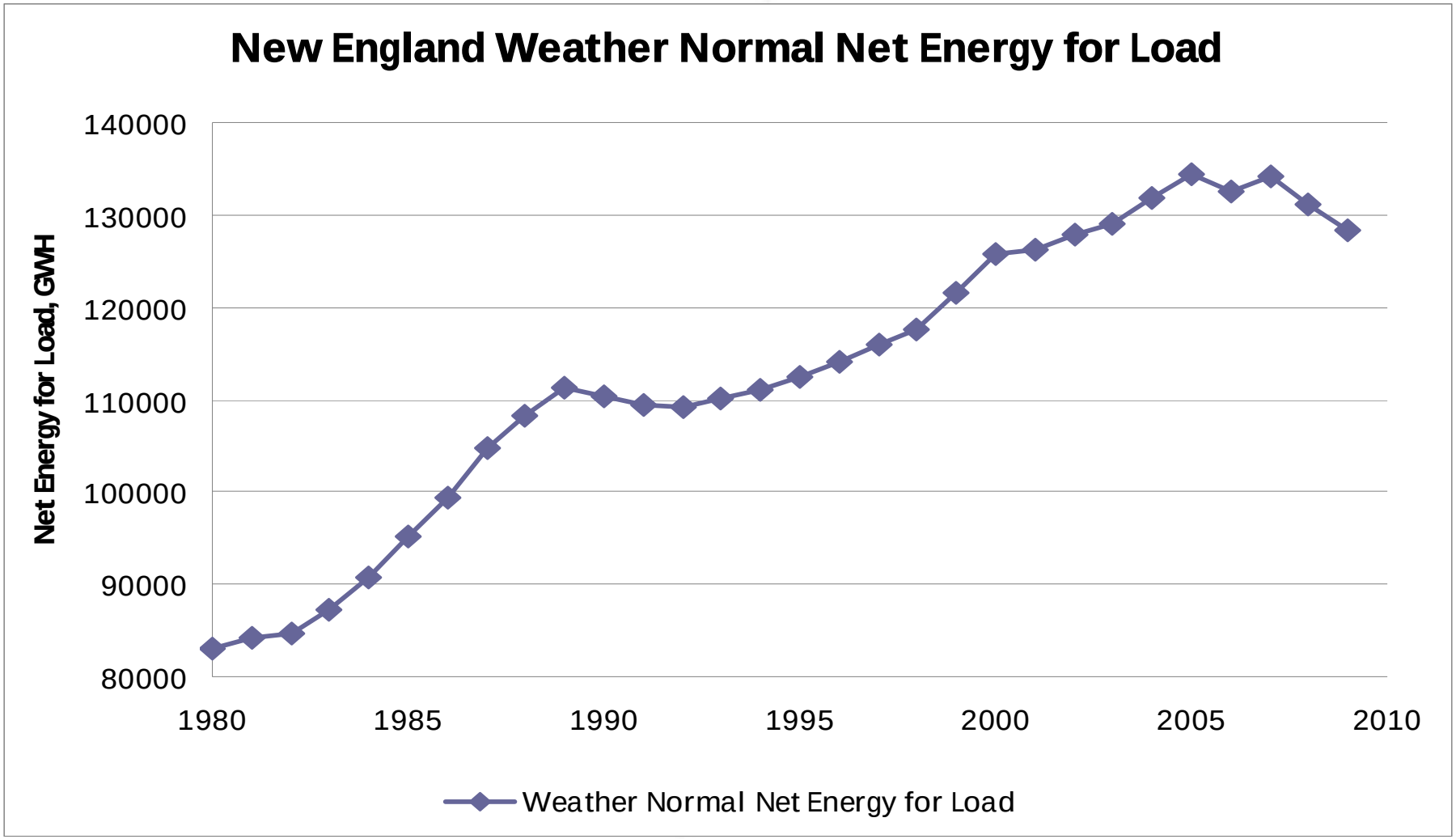
Public Policy Impacts on Transmission Planning

- Role of Planning Authorities (Order 890)
- Reliable and efficient bulk power system
- State/Federal policies and goals
  - *Energy efficiency programs (states)*
  - Renewable resource goals (RPS)
  - Carbon issues (RGGI)
  - *EPA regulations and retirements*

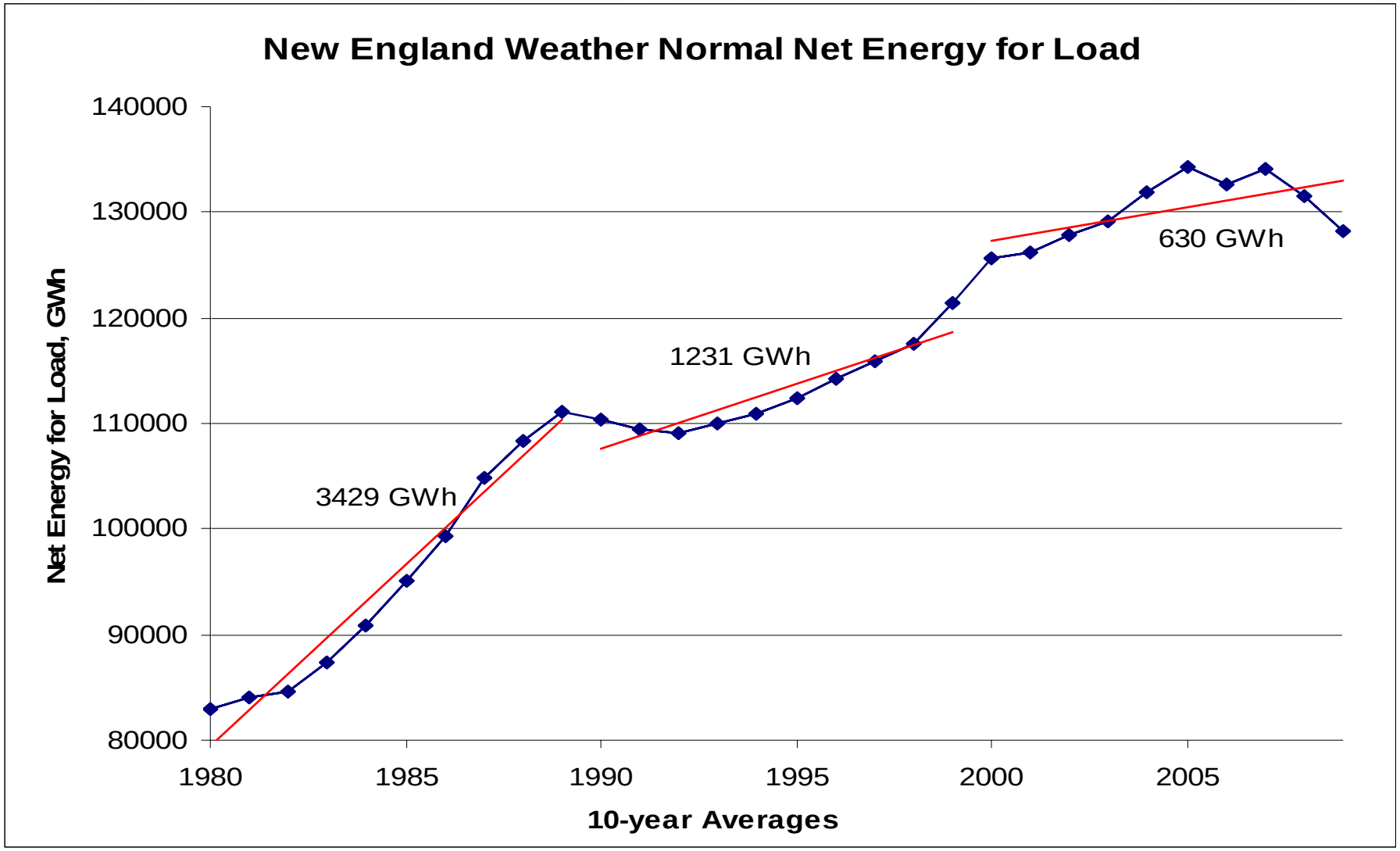
Modeling load forecasts

- Econometric models
- Energy intensity factors
- Codes and standards
- State/Federal policies and goals
- Forward capacity markets
- DSM program results

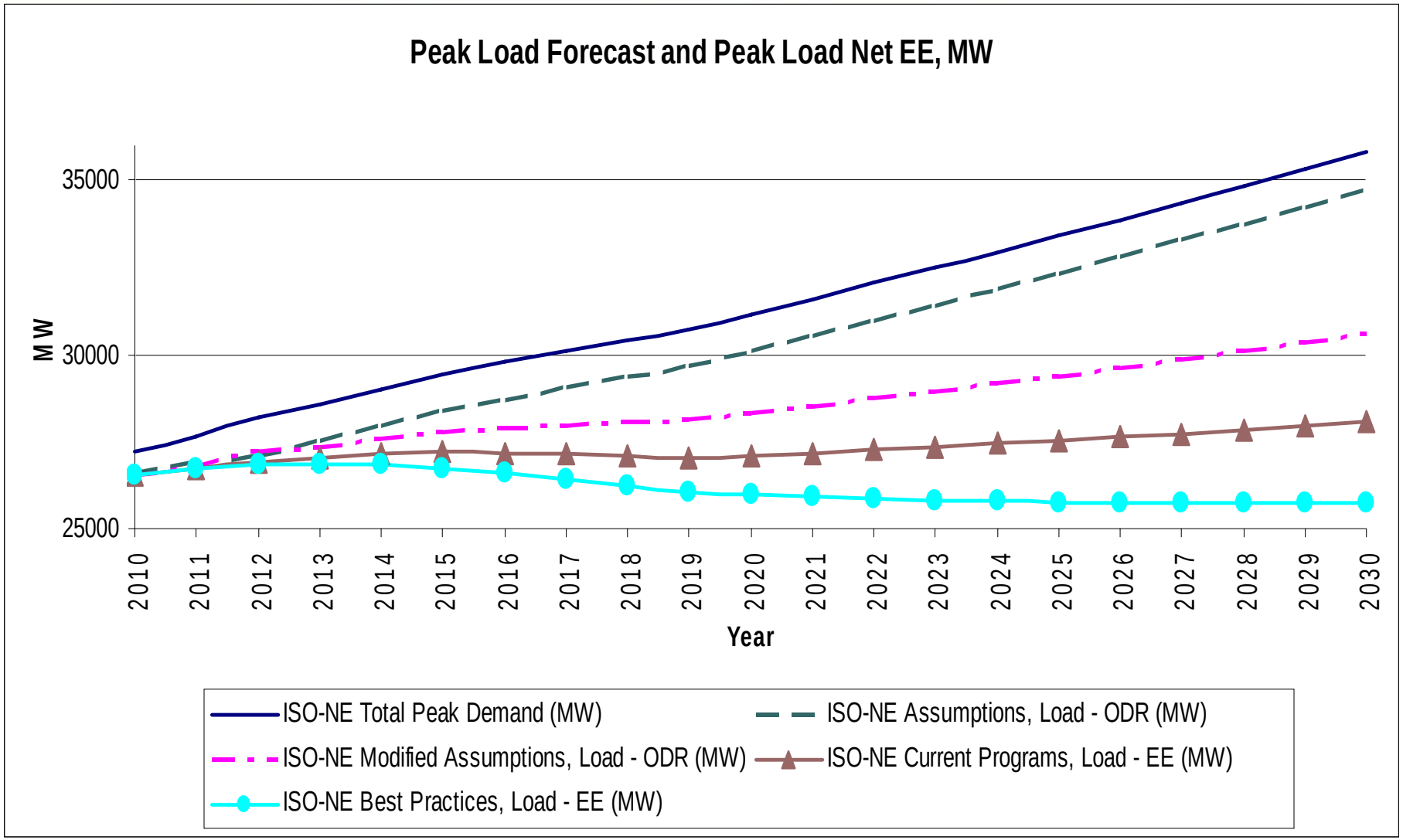
Energy consumption 1980-2009 (weather normalized)



10-year averages of annual energy increase 1980-2009



New England Peak Loads 2010-2030



Five Peak Demand Cases

- Base forecast with no EE reductions
- ISO-NE: FCA EE values and zero for future
- Modified ISO: FCA EE average (~1%) will lead to small growth in peak demand
- Current Programs: 1.4% penetration will lead to level peak demand
- Best Practices: 2.0% penetration will lead to declining peak demand

EPA Rules review

- Clean Air transport rule on emissions [2011]
- Air Toxics standards [2011]
- Coal combustion residuals [2012]
- Clean Water Act ,§316(b) [2012]

Industry analyses

- 2010: NERC, Credit Suisse, NERC, ICF/EEI, MJ Bradley, Bernstein, Exelon
- Estimate likely retirements based on size, age, and current control equipment
- New control technology make not be economic for coal plants ~300 MW or smaller; many exceptions
- Estimates cluster around 40-60 GW of retirements, with highs of 80 GW or more
- Effective date of rules and compliance timeframes are still uncertain

At-Risk Generation

- Screening of resources for “risk”
- Resource adequacy analyses for bulk power system
- Reliability analyses for components of bulk power system
- Operational analyses for forecasting

Key Issues

- Future loads and energy intensity factors
- Impact of aggressive efficiency programs
- Renewable resources from state RPS
- Resource retirements (fossil, nuclear, other)
- New resources and technologies
- State and Federal (?) carbon policies