Incorporating Energy Efficiency in Long Term System Planning

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Roles of the NYISO

Reliable operation of the bulk electricity grid

- *Managing the flow of power over nearly 11,000 circuit-miles of transmission lines from more than 300 generating units*

Administration of open and competitive wholesale electricity markets

- *Bringing together buyers and sellers of energy and related products and services*

Planning for New York's energy future

- *Assessing needs over a 10-year horizon and evaluating projects proposed to meet those needs*

Advancing the technological infrastructure of the electric system

- *Developing and deploying information technology and tools to make the grid smarter*

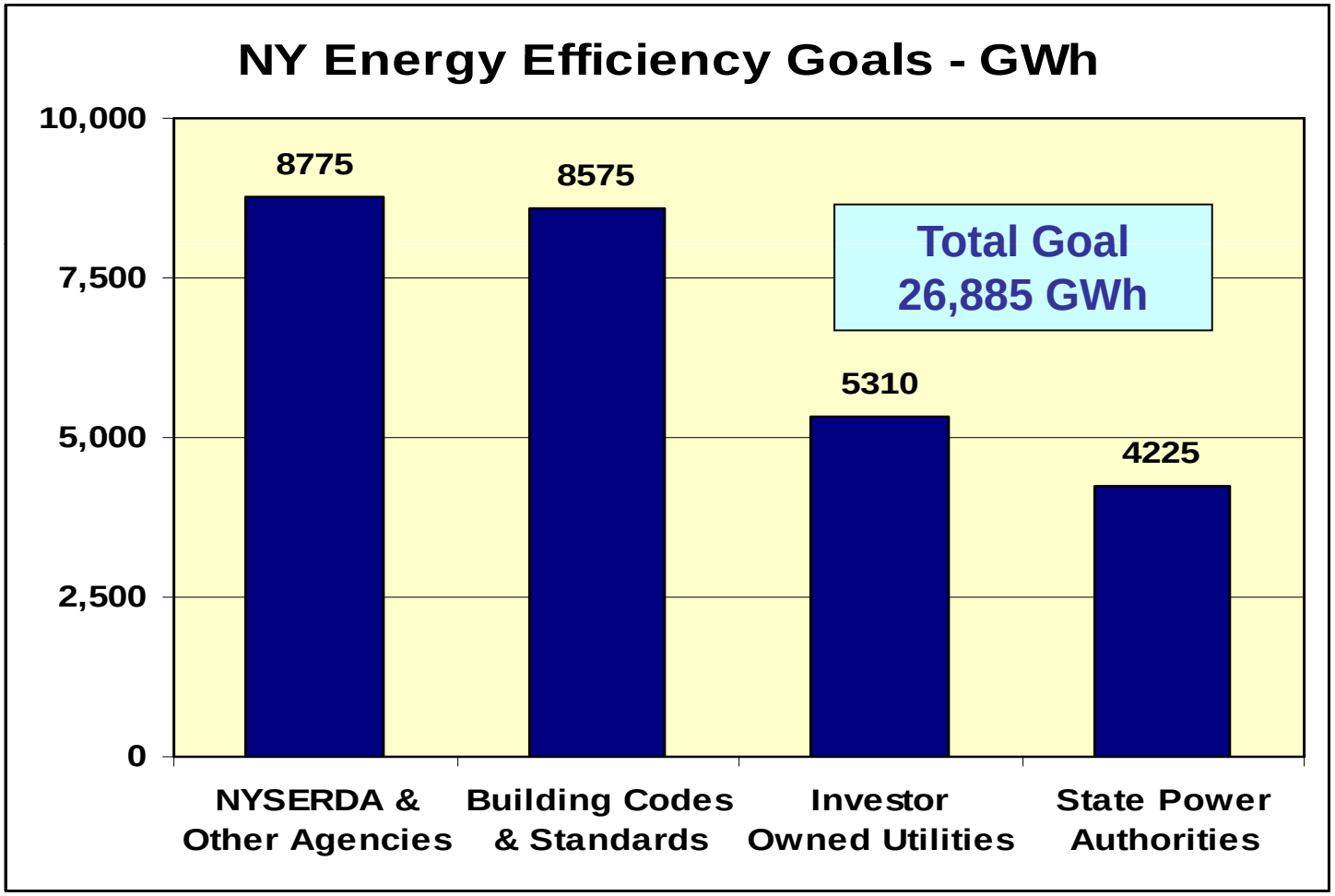
New York's Energy Efficiency Portfolio Standard

- **In 2008, the New York State Public Service Commission authorized the Energy Efficiency Portfolio Standard (EEPS)***
  - ***Set goals for NYSERDA & State's Investor Owned Utilities, plus significant contributions from NYPA & LIPA***
  - ***Increased funding for Evaluation, Measurement and Verification***
  - ***Acknowledged importance of EM&V for NYISO's resource adequacy assessments***
  - ***Created an Evaluation Advisory Group***
    - **www.dps.state.ny.us/EEPS_Evaluation.html**
  - ***Funding & goals authorized through 2011***
- **In 2011, the PSC will issue new goals for 2012 and beyond.**

*** NY PSC 07-M-0548**

NY Energy Efficiency Goal

15% Energy Reduction by 2015



NYISO's System Planning Forecast

- **Econometric Forecast**
- **Energy Efficiency Forecast**
  - ***Guided by program goals, recognizing past program performance***
  - ***Reliance on cost & performance data provided by EE Program Administrators***
- **System Forecast = Econometric Forecast less Forecasted EE Impacts**

Stakeholder Participation

- **NYISO reviews current progress and future projections with its Electric System Planning Working Group**
  - ***Composed of all market sectors & state regulatory staff***
  - ***Stakeholders approve forecast used for NYISO's biennial Reliability Needs Assessment***
- **NYISO consults regularly with individual utilities, state agencies & power authorities**
- **NYISO participates in the state's Evaluation Advisory Group**

Forecasting EE Impacts

- **Bottom-Up Approach**
  - ***Segment by geography & Program Administrator***
    - **Participation rates differ by geography**
      - Multi-family housing units concentrated downstate
      - Lower air-conditioning saturations upstate
  - ***Segment by measure type***
    - **Peak impacts differ by measure type**
  - ***Avoid double-counting of impacts***
    - **CFLs & appliance or motor rebate programs will offset impacts of new building codes & appliance standards**

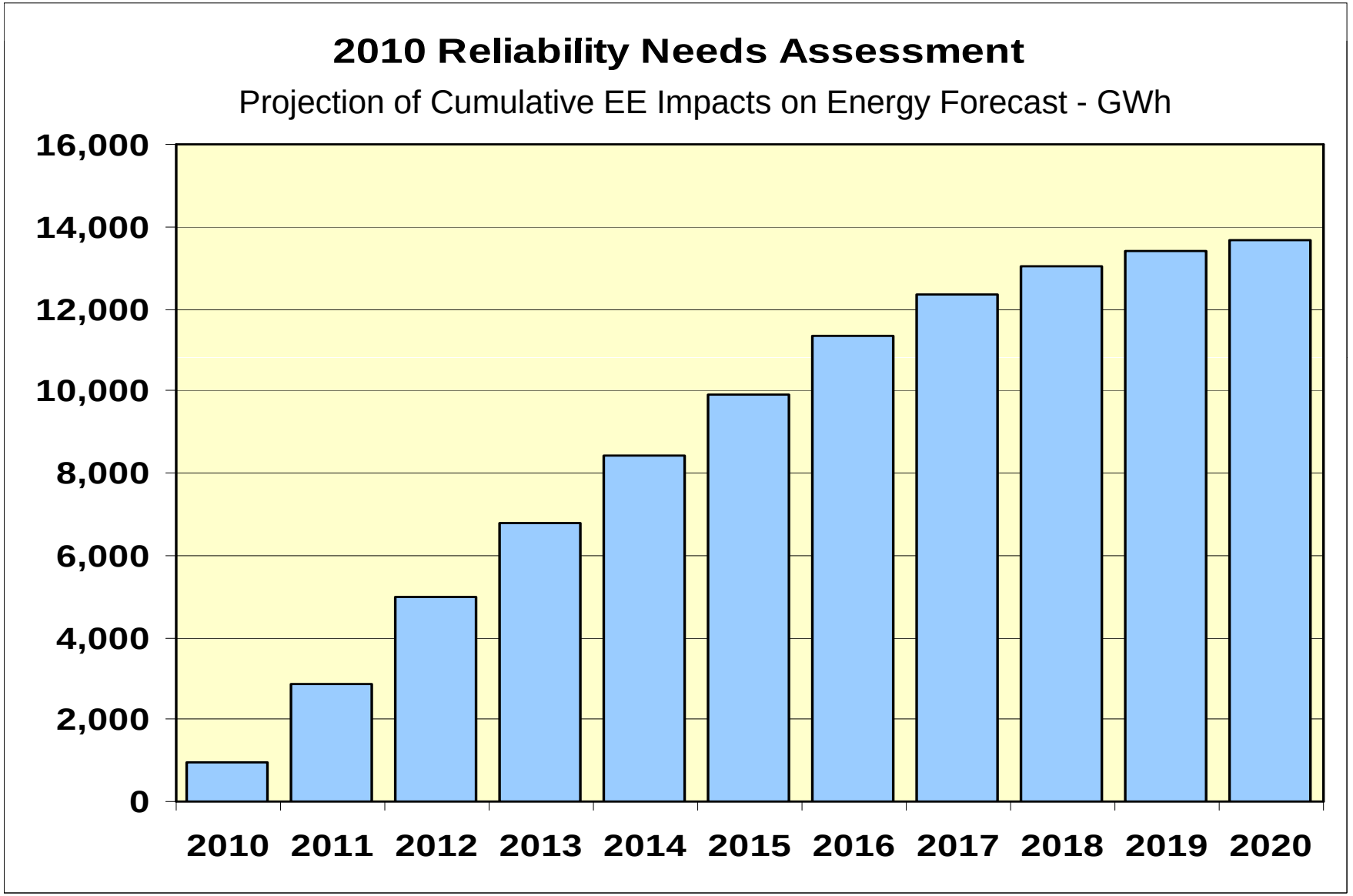
Energy Efficiency Forecast Equations

GWH per Yr = (Budget $M/yr) * (fraction spent) / (Cost $M /MWh) * (Net-to-Gross ratio) * (1 GWh / 1000 MWh)

MW per Yr = (GWh/Yr) / (8,760 hrs per year) / Load Factor

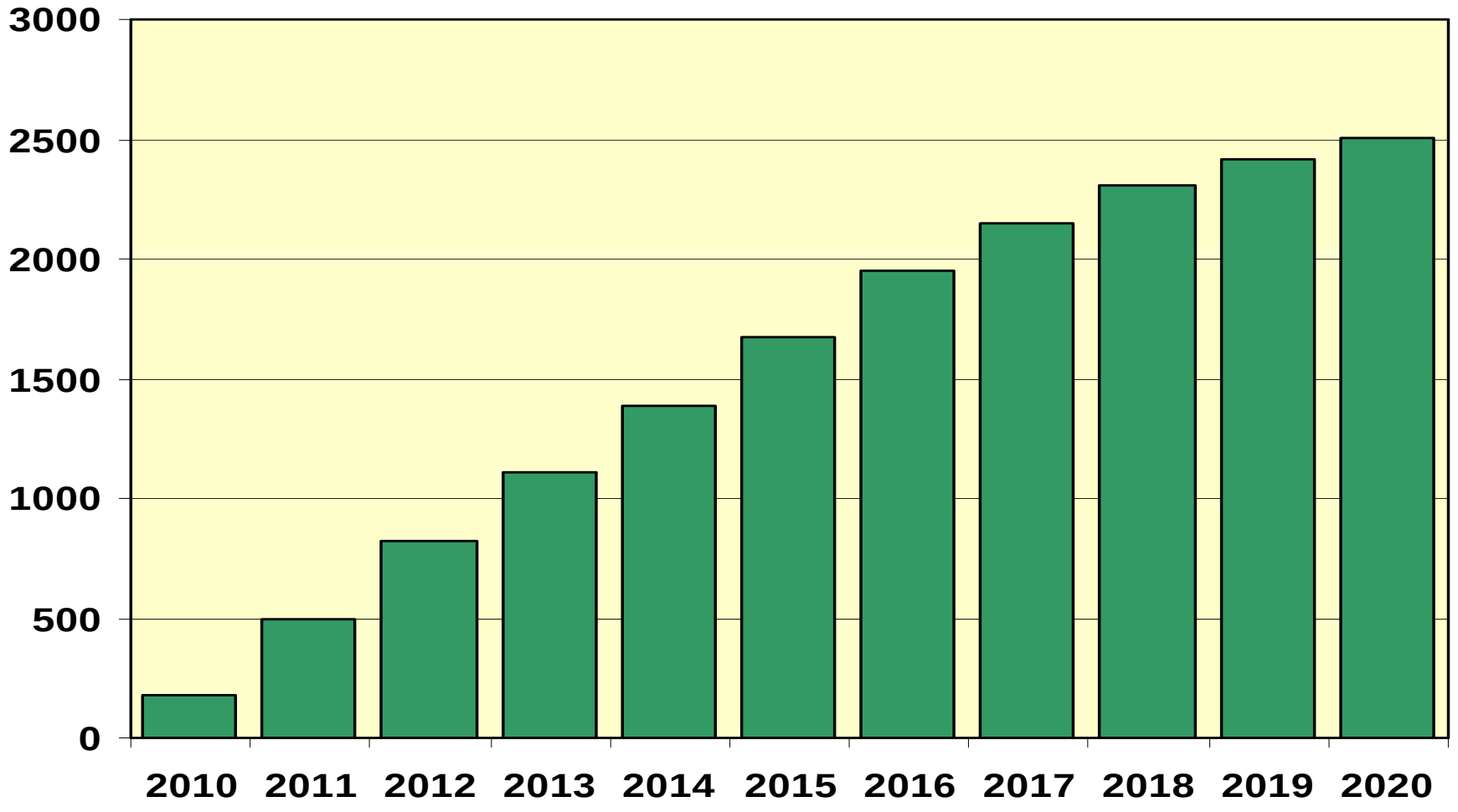
Data Requirements

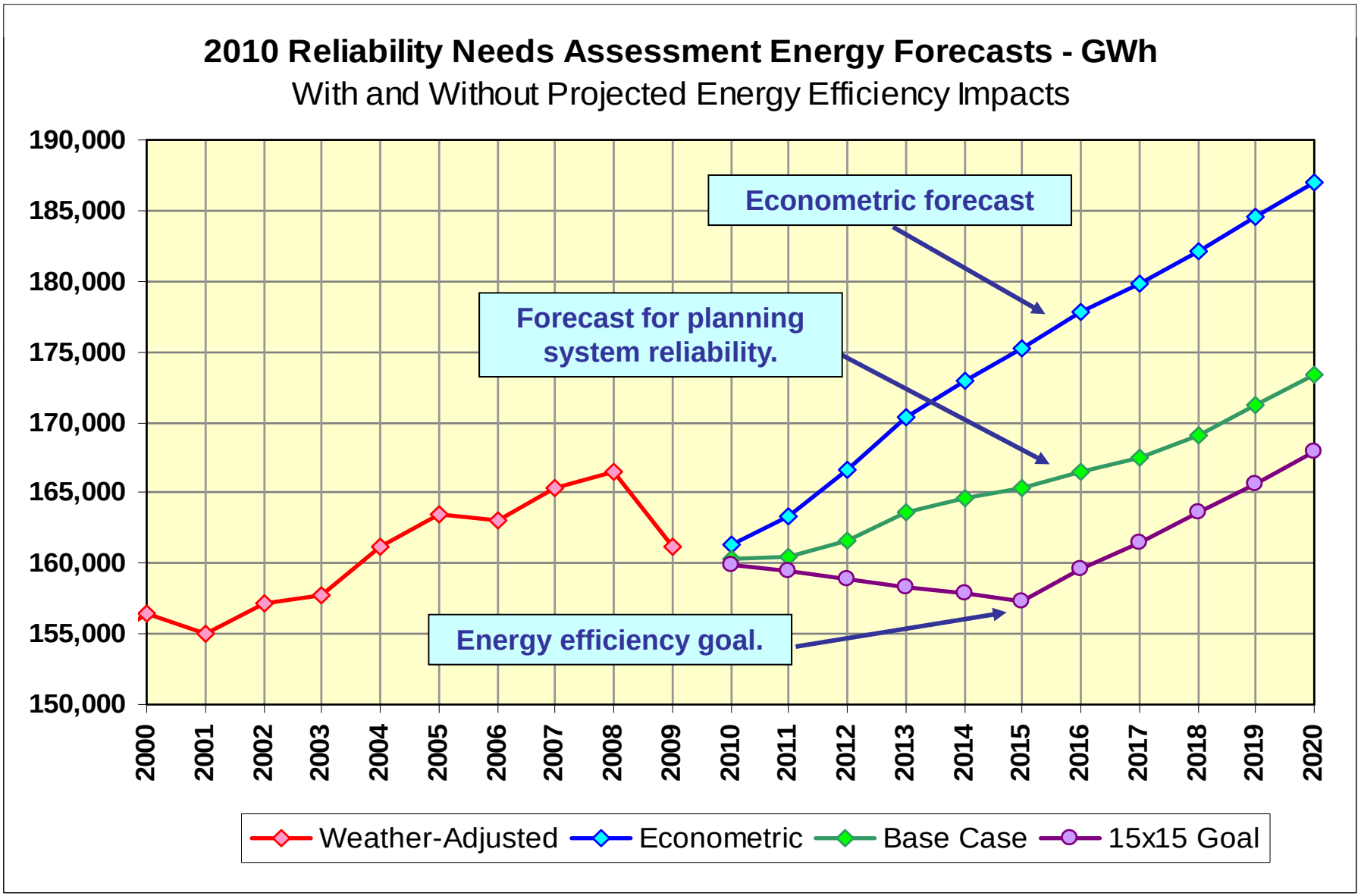
- Annual budget projections
  - *By region, program and program administrator*
  - *Program-specific projections require more data but may result in more realistic projections.*
  - *OK to group programs with similar costs & load factors*
  - *Must separate CFL & other lighting programs, for both cost and load factor reasons*
- Current percentage of funds spent to program budgets
  - *So as to determine the remaining budget available.*
- Current cumulative and cost per MWh for programs
  - *Both direct program costs as well as admin and overhead*
- The overall MWh goal for the program
- The summer and winter ratios of peak to energy

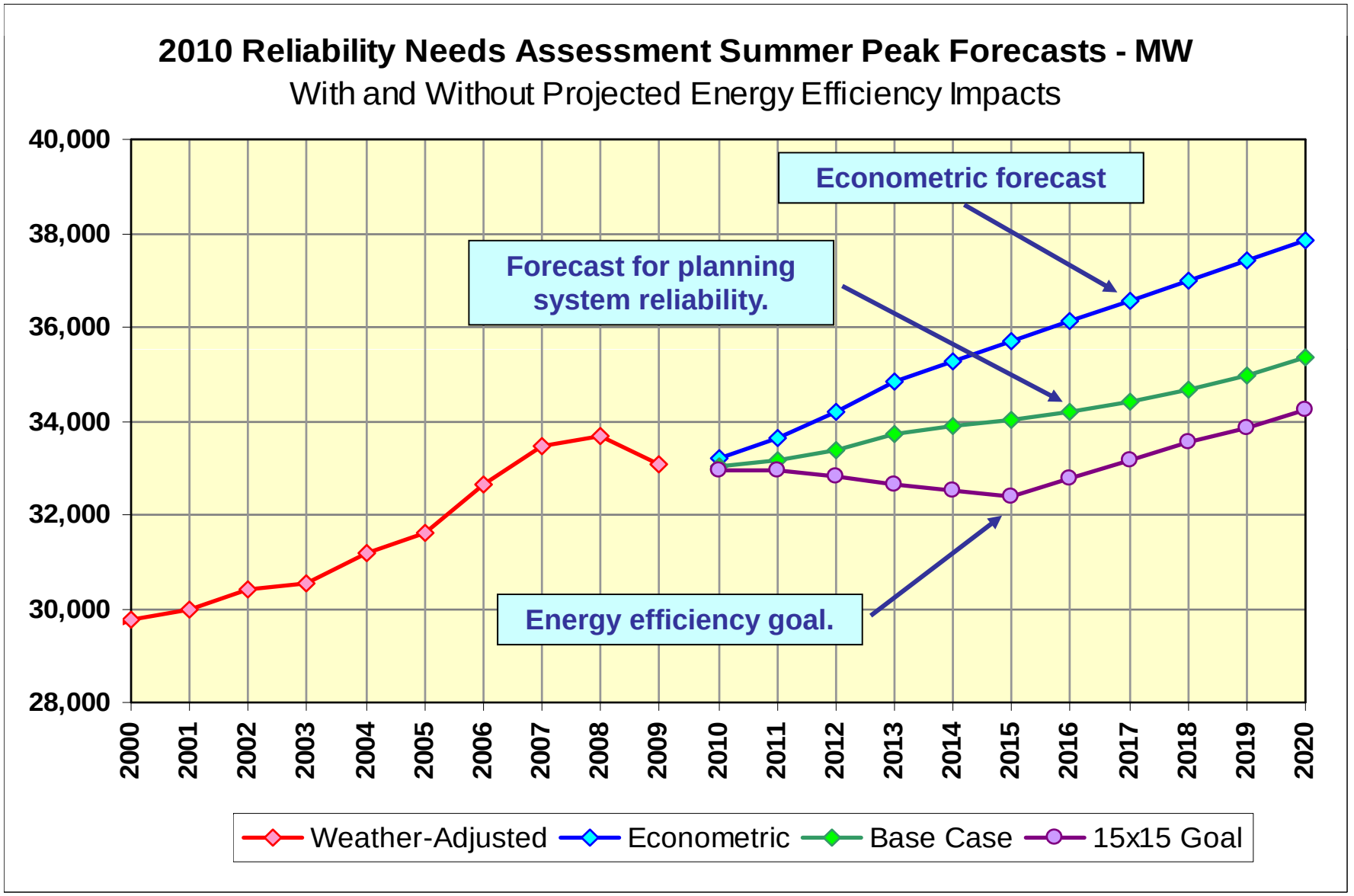


2010 Reliability Needs Assessment

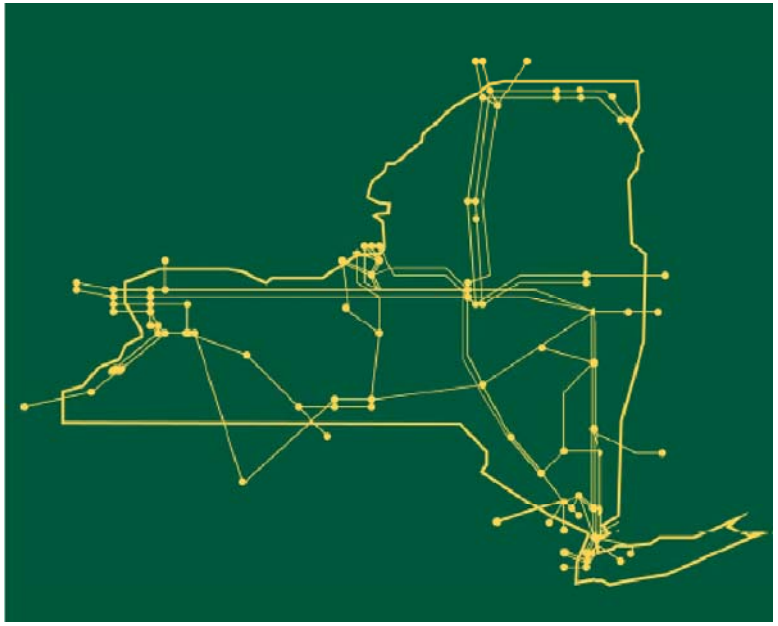
Projection of Cumulative EE Impacts on Summer Peak - MW







The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



www.nyiso.com