

# Environmental Assumptions for 2009 IRM Base Case

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Northeast Power Coordinating Council  
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# Agenda

- ◆ ABB *Grid View* Model
- ◆ NYISO Data and Forecasts
- ◆ Fuel Forecasts
- ◆ Unit Performance Data
- ◆ Results and Conclusions
- ◆ Scenario Analysis

# *GridView* Fundamentals

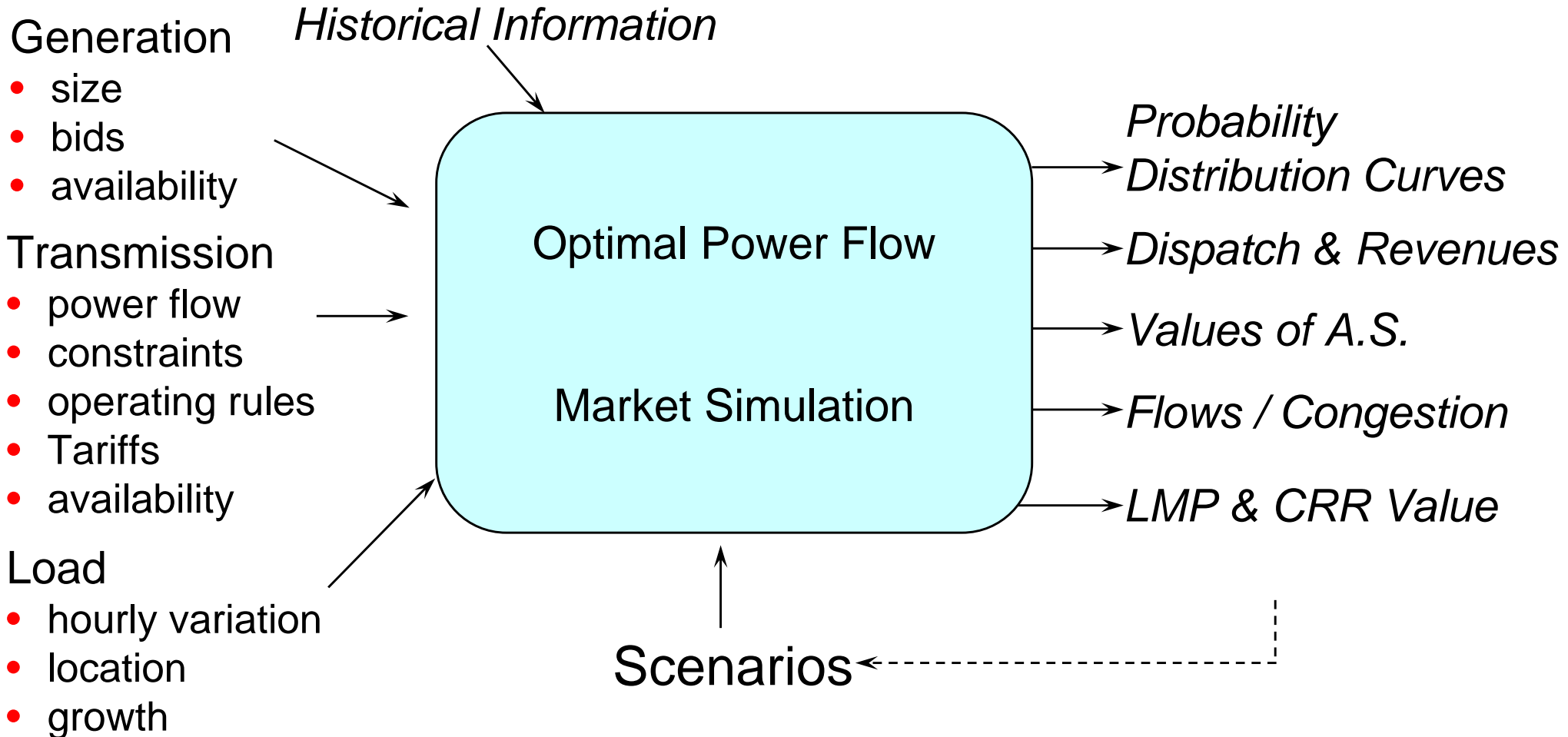
## ABB MATERIALS

*GridView* is a Least-Cost, Security-Constrained Unit Commitment and Dispatch Program

- ✓ Dispatches generators to minimize the production cost given unit characteristics (cost, as well as physical) and chronological load
- ✓ Performs a dispatch such that transmission line limits are not violated under normal or contingency conditions
- ✓ Calculates spot prices at buses and shadow prices on lines as a part of the process

# ABB GridView

## ABB MATERIALS



*Goal: Combine Power Systems Analysis with Accurate Economic Models*

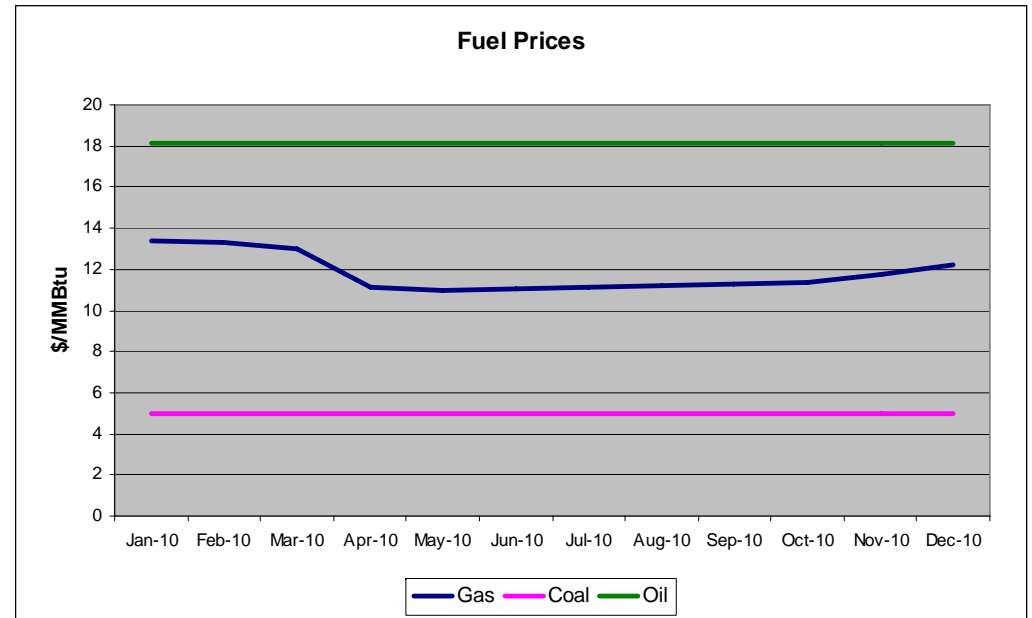
# NYISO Data and Forecasts

- ◆ 2010 Year of Study, Poletti retirement
- ◆ 2008 “Gold Book” Load Forecast
  - *Base Load of 170,649 GWh*
- ◆ Neptune full capacity (660 MW)
- ◆ Imports fixed at 2006 levels plus Neptune
  - *Net Import: 25,000 GWh*
- ◆ Wind Penetration
  - *Capacity: 867 MW,*
  - *Energy: 2.5 million MWh*
- ◆ NERC Model of the 2010 Eastern Interconnection Transmission System

# External Data

- ◆ Fuel Prices

NYMEX July 23, 2008



- ◆ Heat Rate & Emission Rates

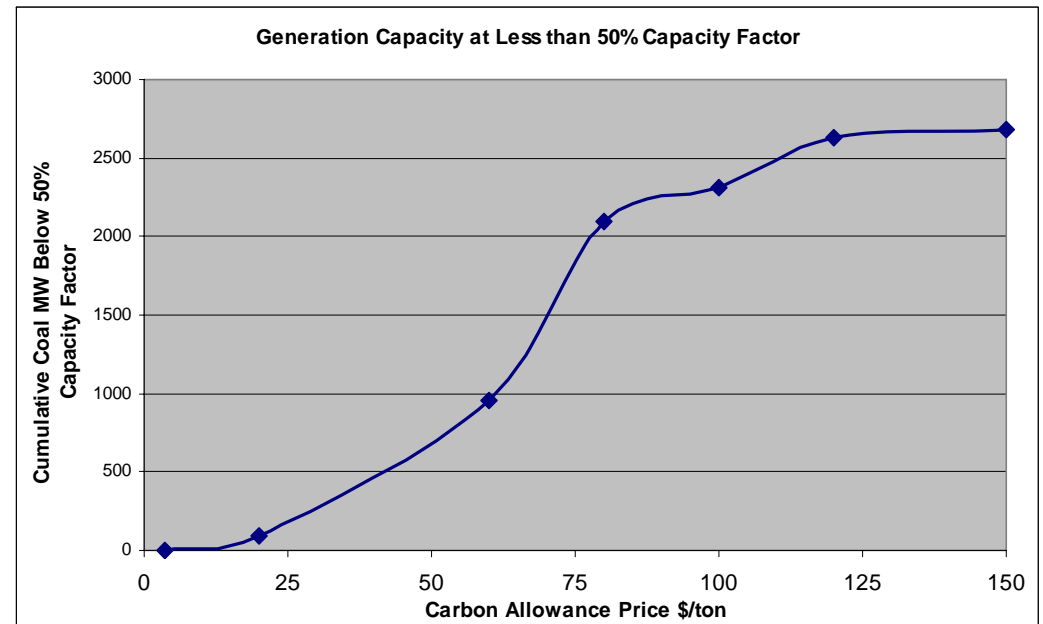
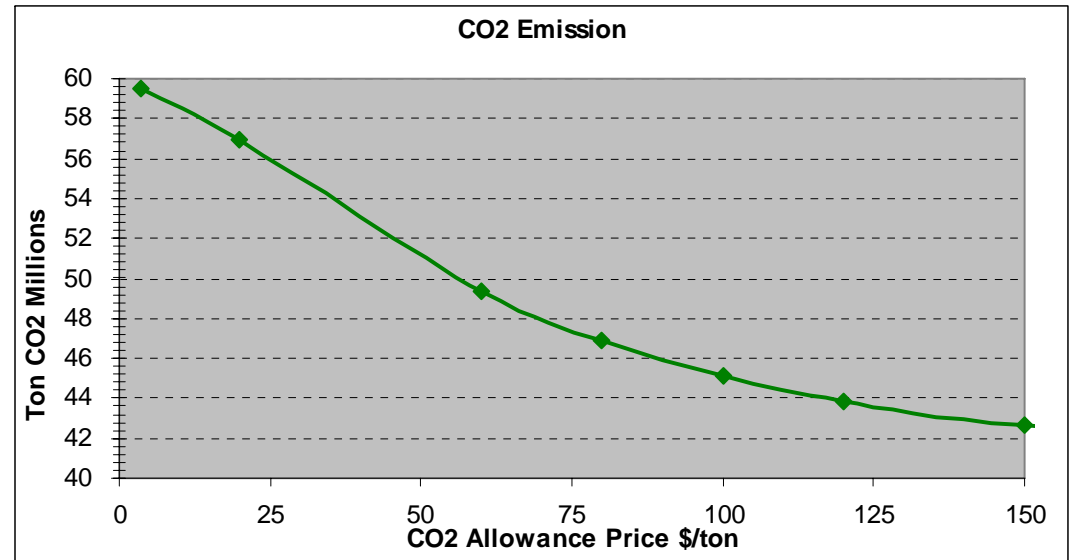
Platts 2007

- Publicly available Heat Rate information utilized to develop production cost for individual generating units



# Results

- ◆ The results of the *GridView* analysis are used to produce a demand curve for CO2 allowances
  - *NYCA Emission Budget is 64m ton CO2*
  
- ◆ The analysis also estimates the amount of capacity that falls below a 50% Capacity Factor at a given Allowance Price

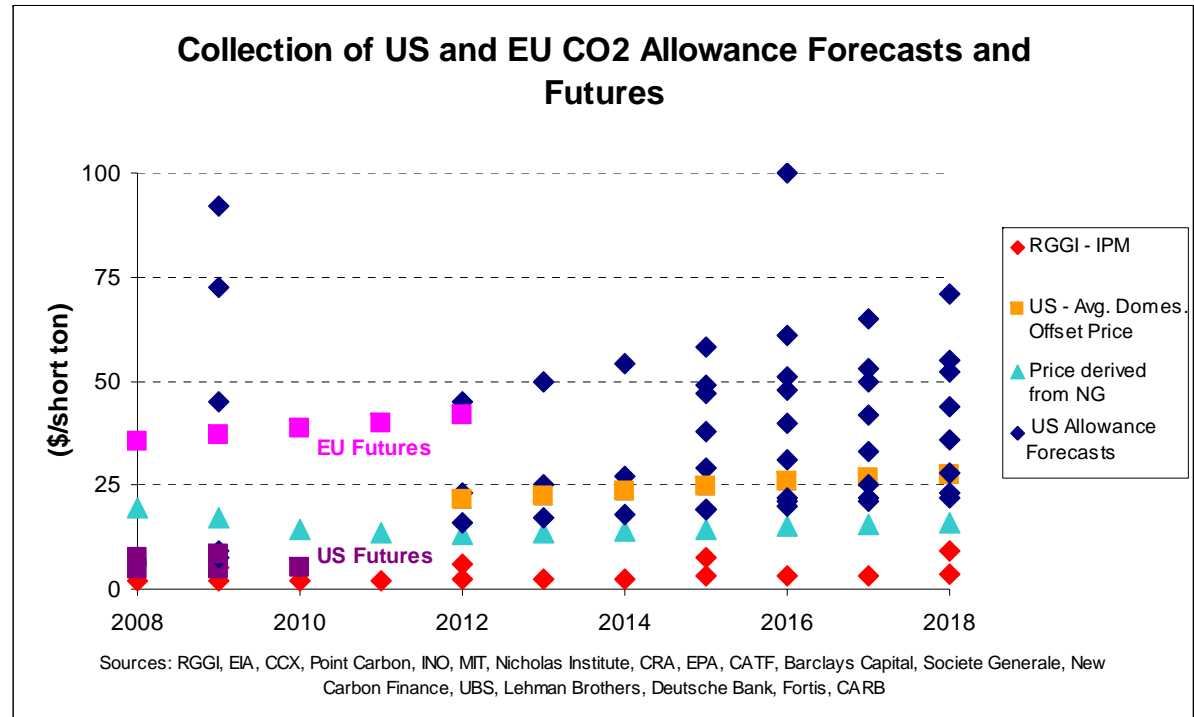


# Conclusions

## ◆ Given

- *the range of forecasts for CO<sub>2</sub> allowance costs*
- *estimates that allowance supply and demand will be somewhat in balance*
- *the three year compliance period*
- *the GridView analysis that less than 100MW of Capacity will be forced below 50 % Capacity Factor at prices below \$20/ton...*

- ◆ **It is reasonable to forecast no negative impact on reliability in 2009**





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# Sensitivity Analysis

- ◆ Allowance Market disruption
- ◆ Renewable Portfolio Standard
- ◆ Extended loss of a nuclear plant
- ◆ NOx reduction



The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and performs comprehensive reliability and resource planning for the state's bulk electricity system.

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