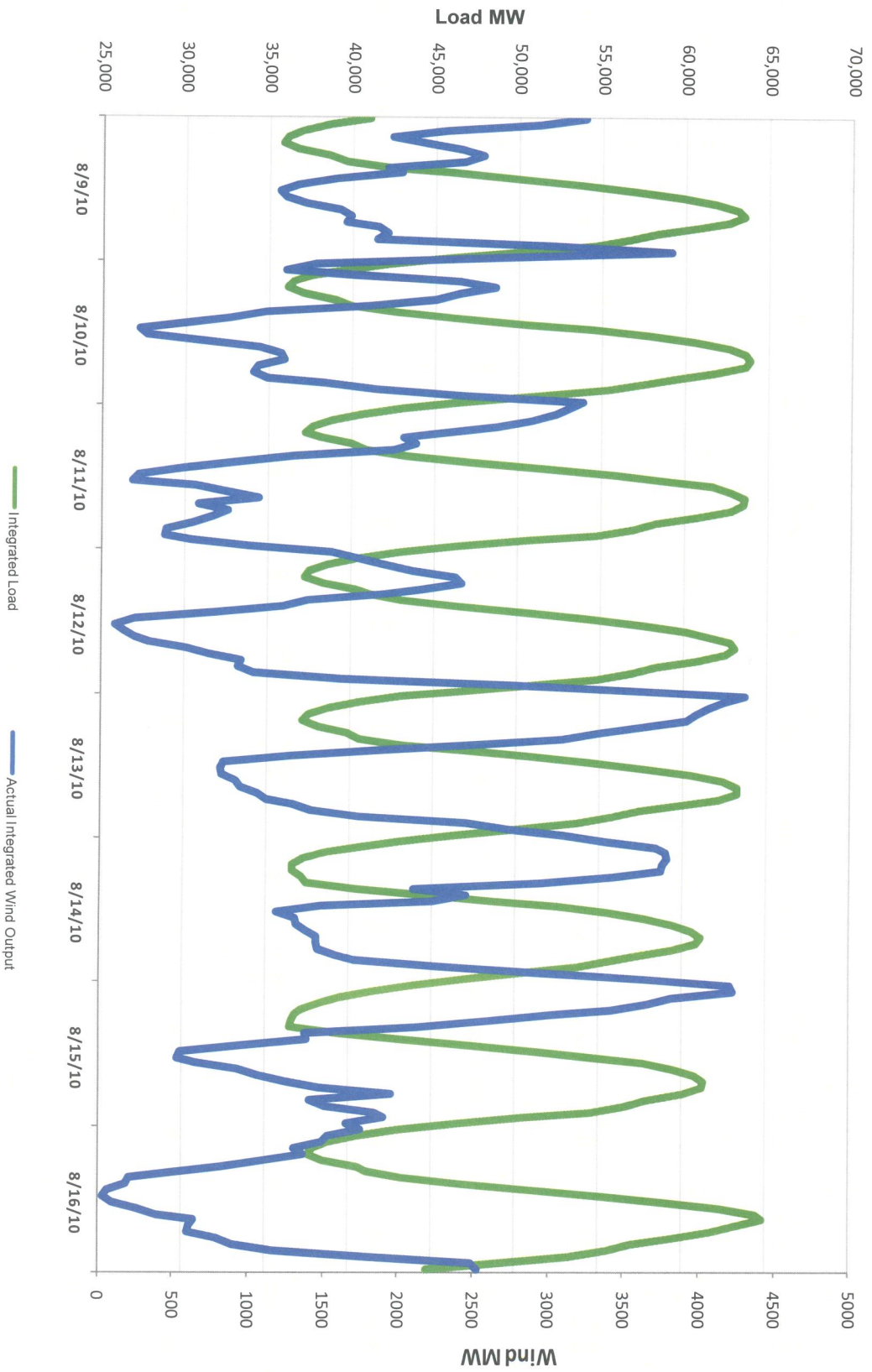
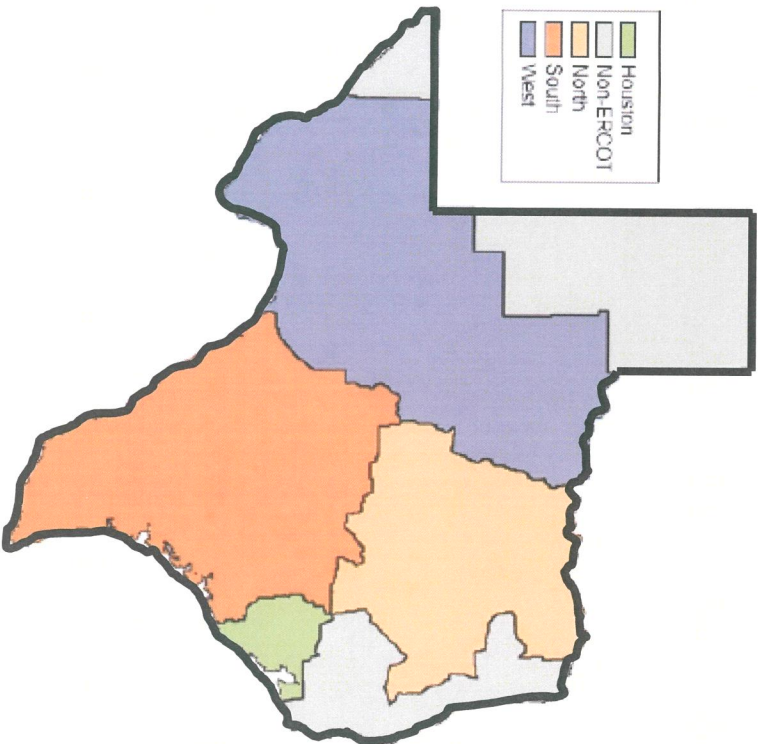


Challenge of Following Wind Variability

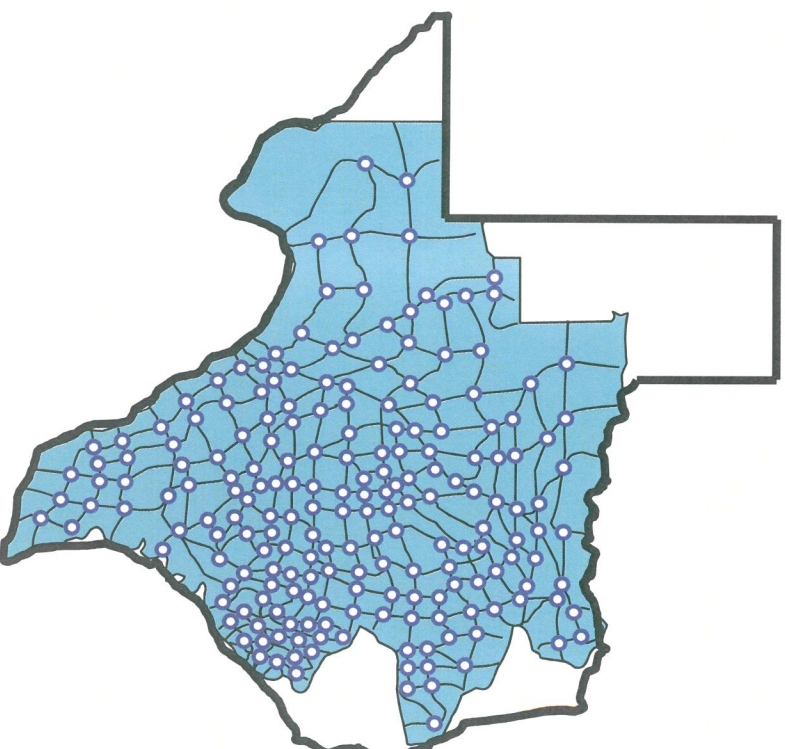


Transition to Nodal Market

ERGOT Zonal



ERGOT Nodal



Benefits of a Nodal market

- Precise market-based pricing of generation
- More granular price signals
- Encourage resource competition
 - *Nodal prices send proper price signals to encourage additional generation and/or transmission investment in proper locations.*
- More accurate management of congestion
 - *More accurate unit information. Market model and operations model are more consistent than current structure.*



Smart Grid, Plug-in Electric Vehicles and Energy Efficiency

Smart Grid from the ISO perspective

- **Smart Grid generally represents:**
 - An array of modern, primarily digital upgrades to the electric system
 - **Goals:**
 - Saving energy – “shaving the peak”
 - Reducing cost
 - Improving reliability, efficiency and transparency.
- **Smart Grid upgrades may be driven by policy initiatives or implemented by utilities, market participants and ISOs as part of their natural course of business**

Generation Output by Fuel - Summer Peak Day

July 13, 2009

- Wind
- Other
- Hydro
- Gas
- Coal
- Nuclear

