

# Joint Coordinated System Plan Overview / Update

IPSAC06

June 27, 2008



# JCSP 2008 – Background

- The Joint Coordinated System Plan (JCSP 2008) participants
  - Midwest ISO
  - SPP
  - PJM
  - NYISO
  - ISO-NE
  - TVA
  - MAPP
- Involves most of the Eastern Interconnection

# JCSP 2008 – Scope

- JCSP 2008 will study horizon years 2018 and 2024
  - Data coordination
  - Transmission reliability analysis
  - Market efficiency analysis and conceptual transmission development
- Two scenarios to satisfy Renewable Portfolio Standards
  - 5% penetration of wind resources
  - 20% penetration of wind resources
- Impact of environmental regulations, fuel price sensitivities, demand response sensitivities and integration of other renewable resources are outside the scope of the study
- Other than conceptual transmission development, additional wind integration issues not addressed

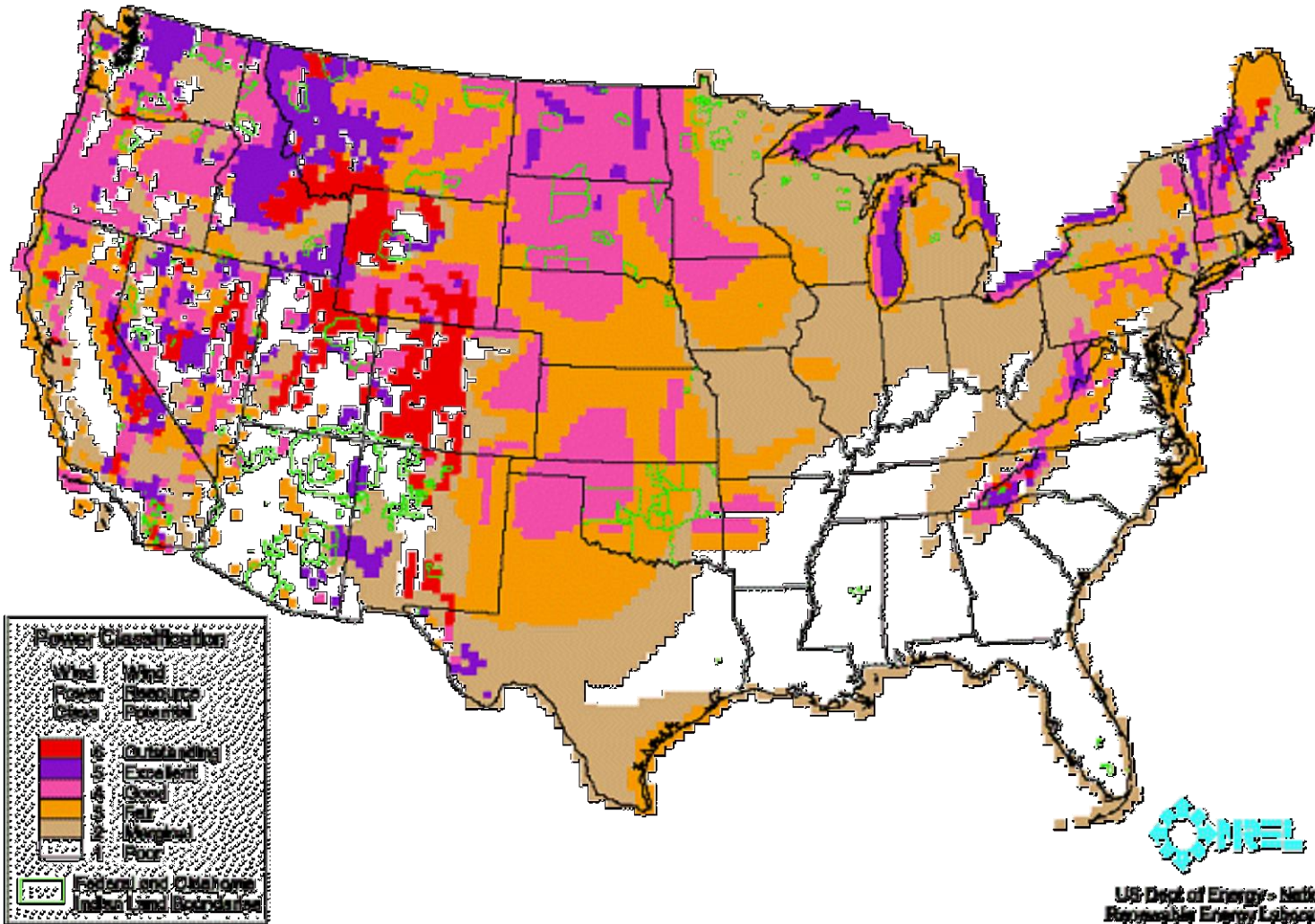
# JCSP 2008 – Scope (cont.)

- Data Coordination
  - Power flow base case and contingencies
  - Wind model of the Eastern Interconnection
  - PROMOD production cost model
- Reliability Analysis
  - Study of 2018 (approximately 5% wind energy)
  - Analysis of the transmission systems from North Dakota to East Coast
    - 2007 series ERAG/MMWG model used as base case
  - Monitoring above 200 kV facilities
  - Studying NERC category B and select category C contingencies
  - Will account for contingencies having an interregional impact

# JCSP 2008 – Scope (cont.)

- Market Efficiency Analysis
  - Being done in coordination with the DOE Eastern Wind Integration Study
    - DOE estimates for Wind Potential
  - Long-range analysis of the system in 2024
  - 20% of energy from wind resources
    - Based primarily on interconnection queue information
  - Study is developing conceptual transmission overlays that may be required to deliver the wind resources
    - Provides insights to the long-term development of the network
    - Shows potential need for new voltage classes to be introduced to systems
      - Example: If the upgrade of the Plattsburgh-Vermont tie (PV-20) is feasible, should it be built to 345 kV standards but energized initially at 230 kV?

# Wind Potential



# Pre-Conceptual Transmission Projects

- Transmission enhancements from area with the greatest potential for wind energy to major load centers
  - Extending existing 765 kV loops from Indiana and Illinois west to North Dakota and east across northern Pennsylvania and into New Jersey
  - HVDC from northwestern Wisconsin to New Jersey
  - 345 kV from NYC into Northern New York
  - 345 kV tie from the Niagara region to Albany, then to Agawam
  - 345 kV tie from Pleasant Valley to Long Mountain
  - 345 kV from Long Mountain to Pleasantville
  - HVDC into Southern Connecticut at Norwalk and East Shore
  - 230 kV or 345 kV tie between Plattsburgh and Vermont

# JCSP 2008 – Schedule

- Study was kicked off in the fall of 2007
- Reliability Analysis case development complete and analysis is ongoing
- Economic Analysis
  - Regional resource modeling completed earlier in 2007
  - Design of conceptual transmission overlay is ongoing
  - Transmission system overlay testing expected later this year
  - Consolidated conceptual transmission overlay expected by the end of the year
  - <http://www.midwestiso.org/page/Regulatory+and+Economic+Standards>