

# Midwest ISO Planning Process & Models

FERC Technical Conference

June 9-10, 2010

John Lawhorn, Director  
Regulatory & Economic Planning

# Midwest ISO 7 Step Planning Process

- Midwest ISO Transmission Expansion Plan - 7 step process - in use since 2006 (MTEP 2006, MTEP07, MTEP08, MTEP09 and 2010)
- Joint Coordinated System Plan (JCSP 2008)
  - Reference and 20% Wind Future
- DOE Eastern Wind Integration Transmission Study
  - 20% wind requirement (3 Futures)
  - 30% wind requirement (1 Future)
- JOA – Cross Border studies



# Steps 1thru 3 - Models

*Step 1 – Multi-Future Regional Resource Forecasting*

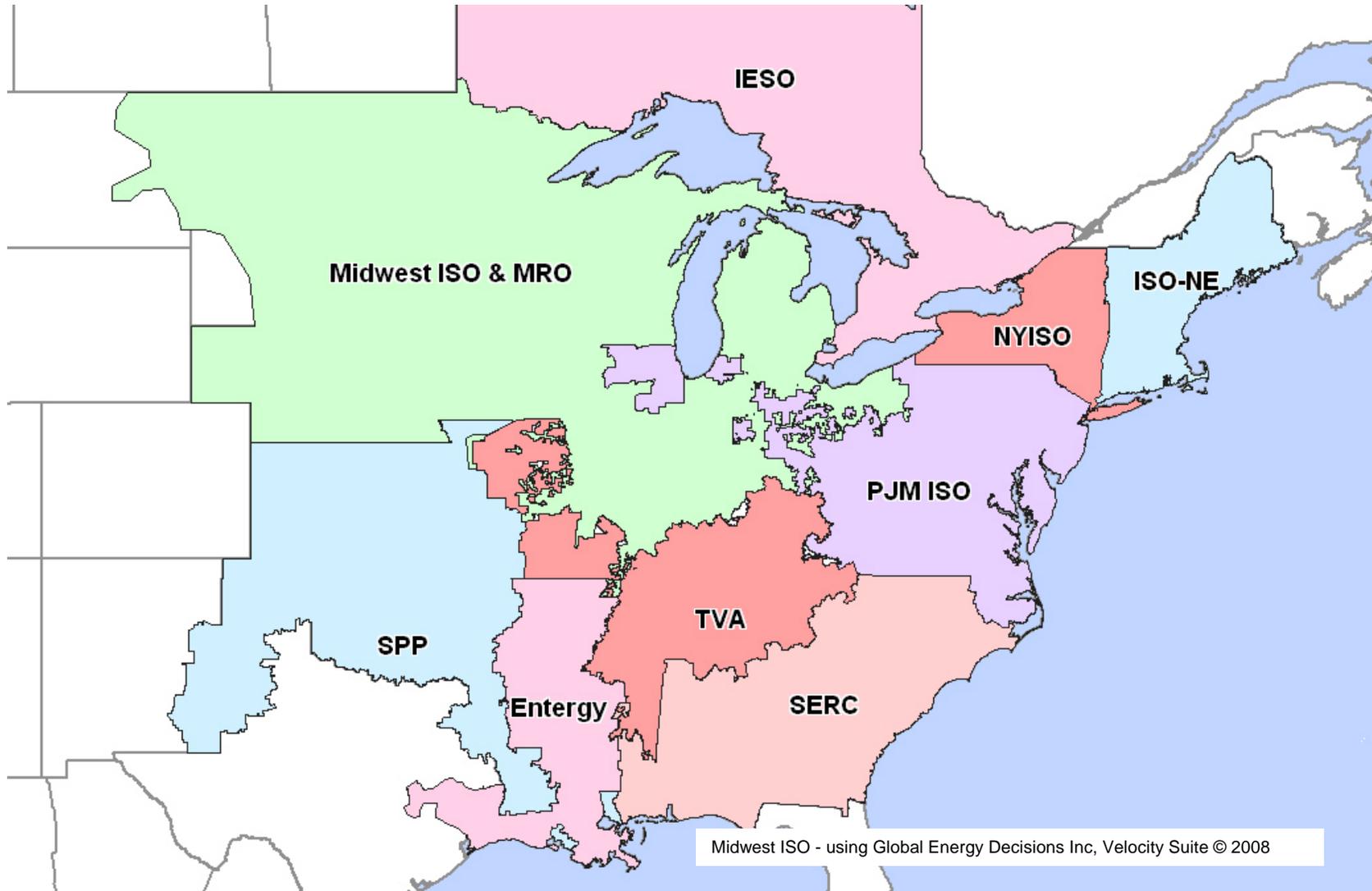
- GE - MARS, Loss of Load Expectation (LOLE) to set reserve margins
- EPRI – EGEAS for capacity expansion in all regions (includes supply and demand resources)

*Step 2 – Site Generation and Place in Powerflow and Production Cost Models*

- Midwest ISO – defined rule sets
- Ventyx – Velocity Suites
- Pitney Bowes – MapInfo Professional

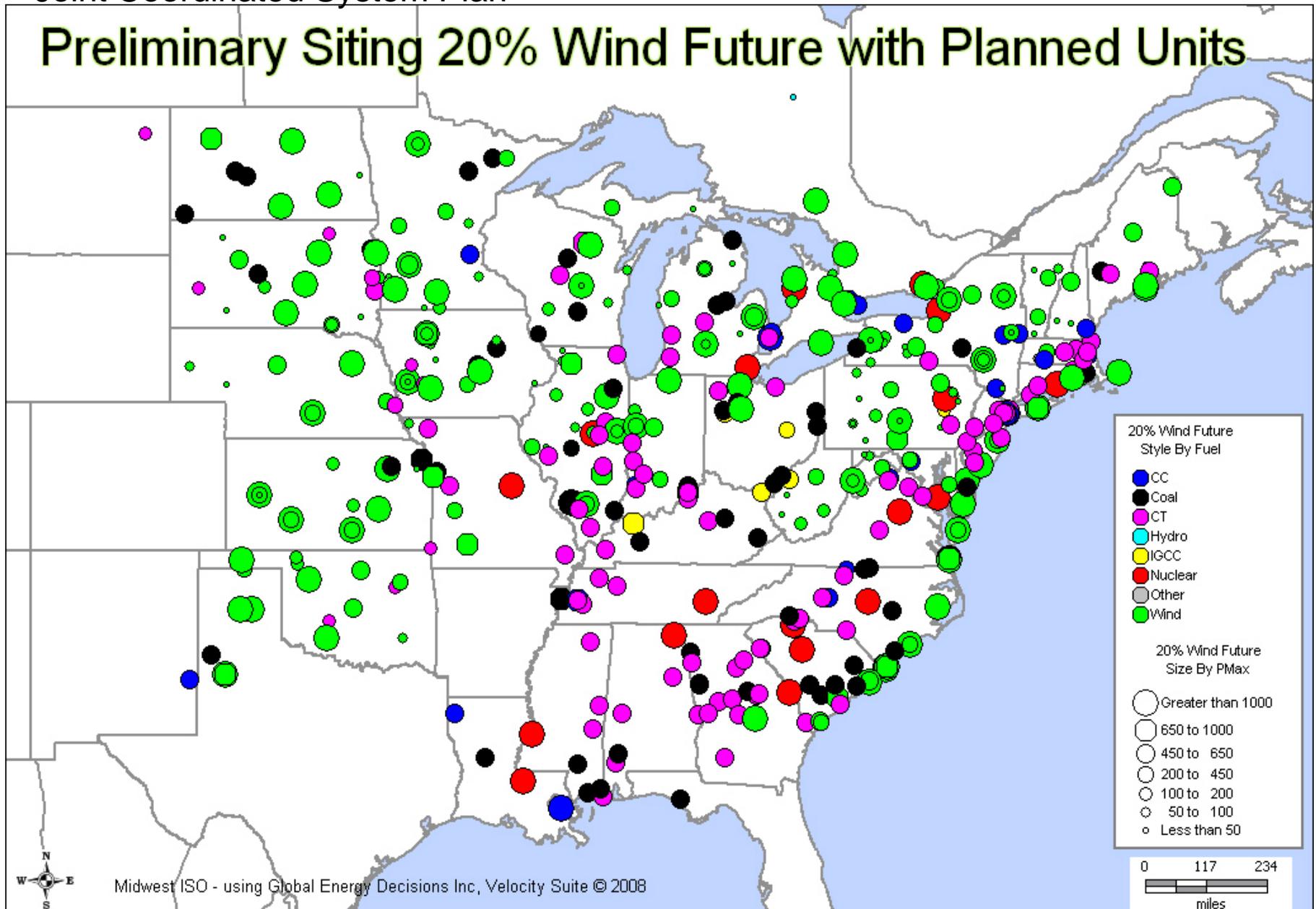
*Step 3 – Design Prelim. Trans. Plans for each Future*

- Ventyx – PROMOD, production cost
- Dr. Robert Burchett – Powerflow Analysis Tool (PAT) for constraint identification



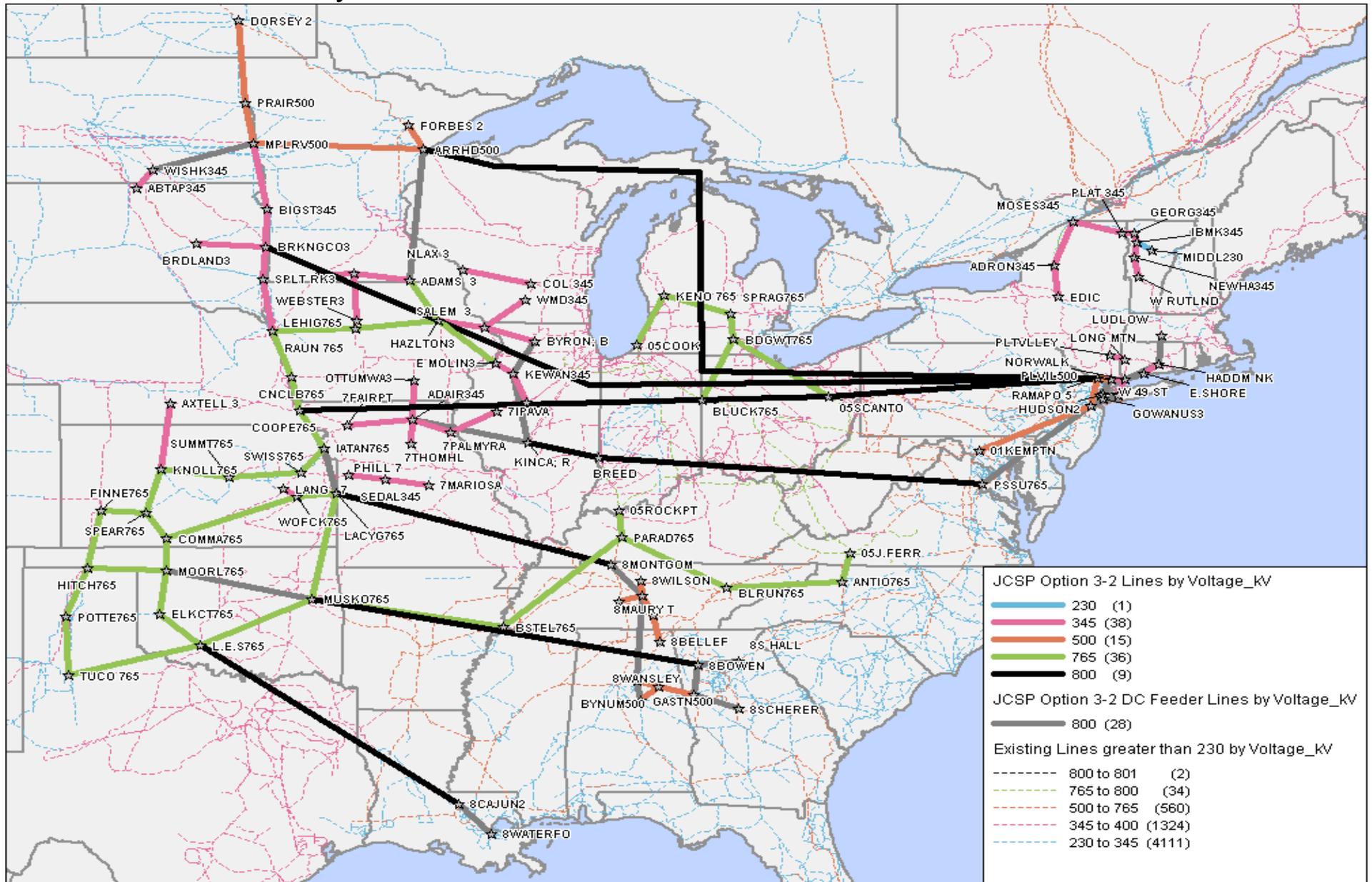
Joint Coordinated System Plan

# Preliminary Siting 20% Wind Future with Planned Units

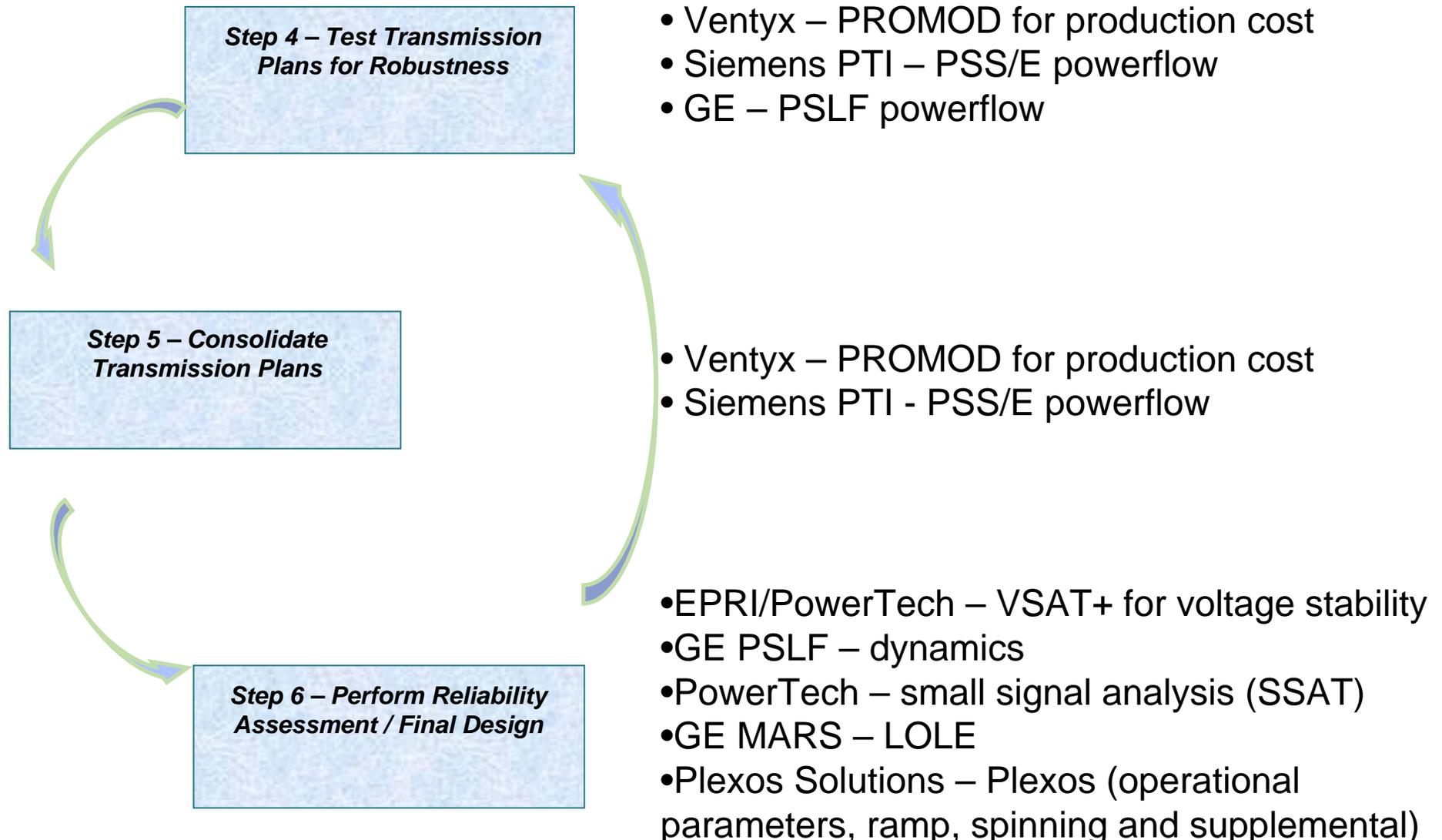


Midwest ISO - using Global Energy Decisions Inc, Velocity Suite © 2008

# Transmission Overlay from JCSP 20% Wind Future



## Steps 4 thru 6 - Models



# Step 7- Models

***Step 7 – Cost Allocation***

- Ventyx – PROMOD for production cost
- Siemens PTI – PSS/E powerflow

***Business Case Development***

- All Models