Unveiling the Energy Roadmap

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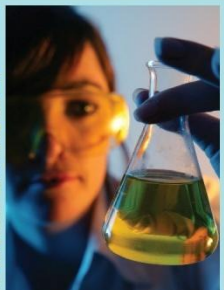


Roadmap Background

- Comprehensive package of policies, strategies and initiatives with accompanying analysis and modeling.

- Recommends what states and provinces should do to meet measurable goals, objectives and specific resolution deliverables established by Midwestern governors and the premier of Manitoba in 2007 MGA Energy Security and Climate Stewardship Platform.

- Identifies and recommends important complementary federal responsibilities and policies.

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Roadmap Background cont.

- Consensus of stakeholders appointed by governors and the premier from business and industry, labor, agriculture, NGOs, academia and government
- Three advisory groups met multiple times in person and by conference call over the past 16 months:
  - Energy Efficiency
  - Bioeconomy and Transportation
  - Renewable Electricity and Advanced Coal w/CCS
- Staffing by MGA and technical partners with oversight by steering committee of governors staff.

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Renewable Electricity and Transmission

(Subgroup of the Renewable Electricity & Advanced Coal with CCS Advisory Group)

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MGA Renewable Electricity Platform

- 10% of electricity consumed in the region would be from renewables by 2015, increasing to 30% by 2030
  - 10% by 2015 (equivalent to about 35,000 MW of wind)
  - 30% by 2030 (equivalent to about 90,000+ MW of wind)

- Regional Electricity Transmission Adequacy (RETA) Initiative
  - Four key elements
    - State by state evaluation of new wind power development through 2020
      - Completed May 2009
    - Midwest ISO interconnection queue reform
      - FERC approved August 2008
    - Identification of renewable energy zones & regional transmission plan
    - Cost allocation for transmission investment

Priority Rec's for Renewable Energy

Rec. #1: Enact or enhance state renewable energy standards or objectives (RES/REO)

Rec. #2: Support the Midwest ISO's Phase I and II Regional Generator Outlet Studies (RGOS)

Rec. #3 Support efforts to deliver an equitable cost allocation formula by 2010 for financing regional transmission

Rec. #4: Work with Midwest ISO/others on developing add'l grid integration capacity for increasing wind penetration in the Midwest

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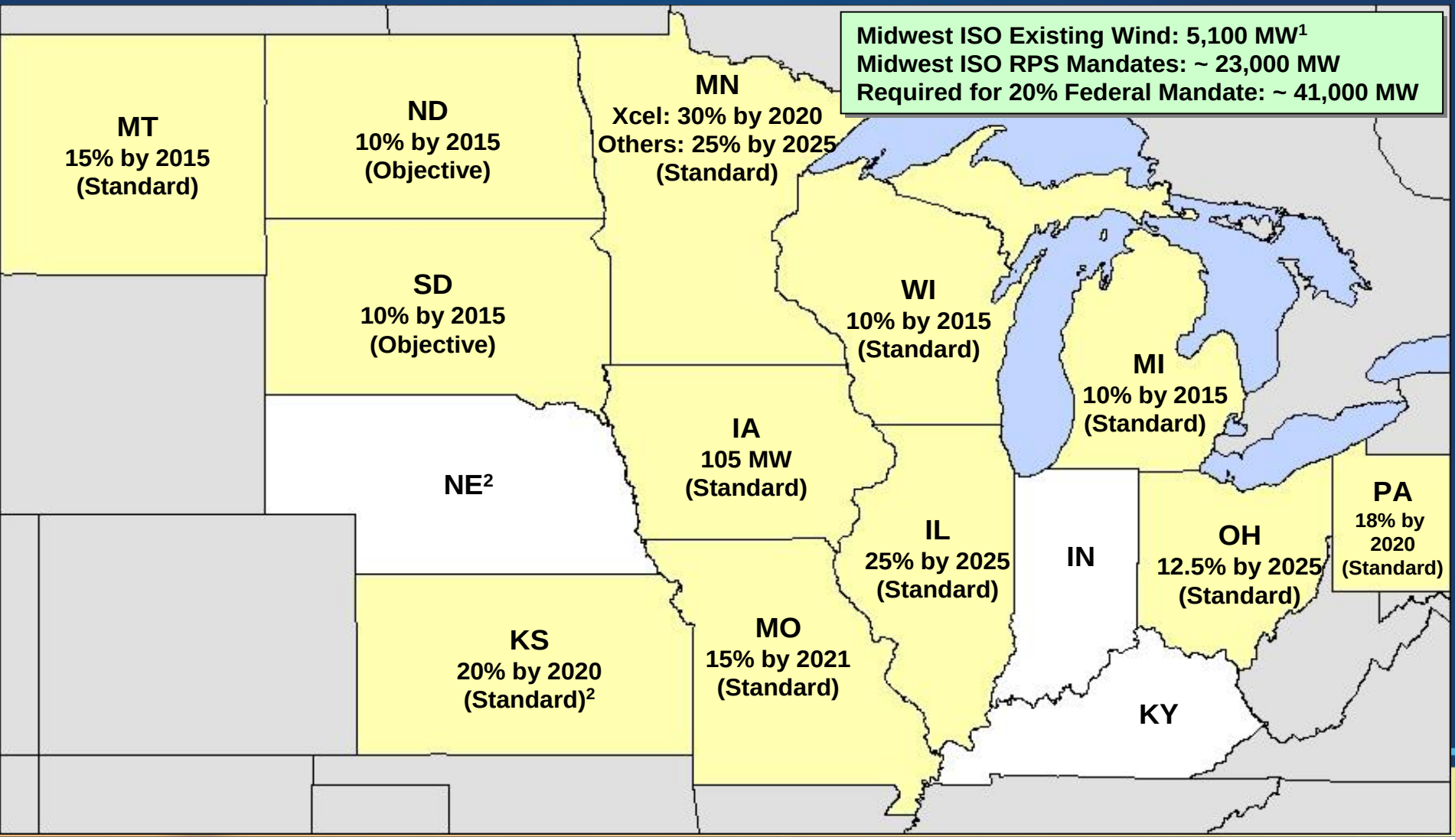
Rec. #1: Enact or Enhance RES/REO



1 – As of 6/09. Over 6,600 MW expected by 12/09.

2 – Kansas and Nebraska are part of the Southwest Power Pool

3 – Montana, Nebraska, Kentucky and Pennsylvania not part of MGA

Rec. #2: Support RGOS I and II

- RETA Initiative:
  - Identification of Renewable Energy Zones
  - Development of Regional Transmission Plan

- Step 1: Renewable Energy Zone identification
  - Midwest ISO RGOS Phase I – UMTDI states (ND, SD, MN, IA, WI)
    - Zones agreed upon in April, 2009
  - Midwest ISO RGOS Phase II – IL, IN, MI, MO, OH
    - Zones selected in July, 2009 and currently undergoing state review

Rec. #2: Support RGOS I and II, cont.

- Step 2: Develop Regional Transmission Plan to support Zone development
  - RGOS Phase I results for UMTDI states published 9/09, with final report expected in October
  - RGOS Phase II published first level study results 9/09, with next level expected by year end
  - Results to be integrated & compared with Eastern Region studies
    - Joint Coordinated System Plan published in 1/09 and
    - Eastern Wind Integration Transmission Study to be published in 12/ 2009

Rec. #3: Cost Allocation

- Critical issues for regulators, utilities, developers, customers
  - How regional transmission infrastructure investments will be allocated, paid for, and costs recovered

- Three Key Forums:
  - UMTDI proposal for RGOS Phase I expected end of 2009
  - Organization of MISO States (OMS) Cost Allocation Regional Plan (CARP) work group recommendations by end of 2009
  - Midwest ISO Regional Expansion and Criteria Benefit (RECB) task force to complete recommendations by end of 2010

Rec. #4: Grid Integration

- Wind generation is a very reliable but variable energy resource
- Adequate transmission capacity and robust access to dispatchable resources necessary for short & mid-term goals
- To manage system variability at higher levels of wind penetration, supporting technologies will need to be deployed
  - advanced grid management
  - enhanced wind forecasting
  - electricity storage (battery, flywheel, compressed air, etc.)