

Upper Midwest Transmission Development Initiative

Minnesota Public Utilities Commission

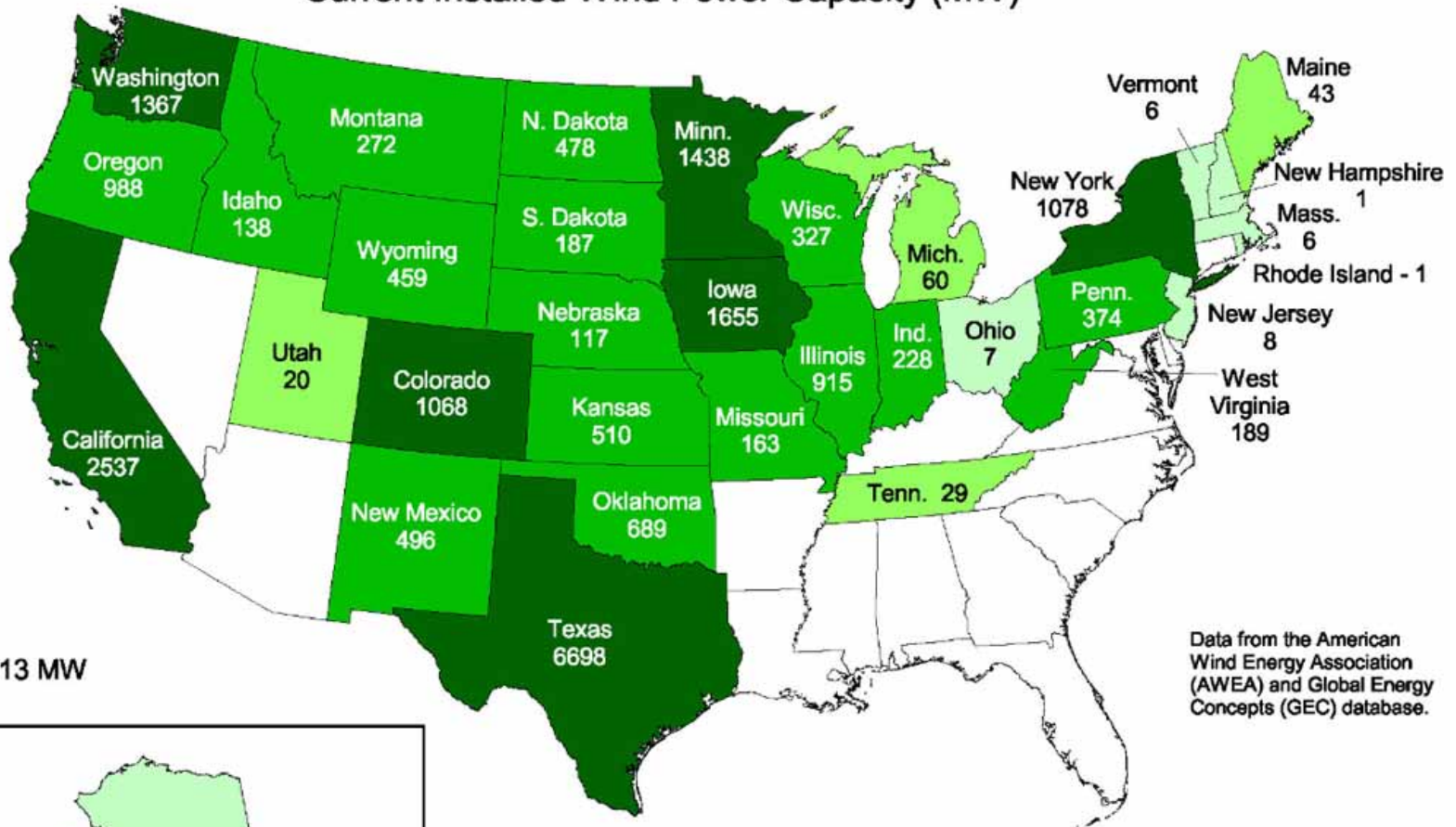
David Boyd, Chairman

NARUC Electricity Committee Meeting

February 16, 2009

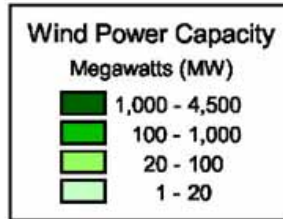
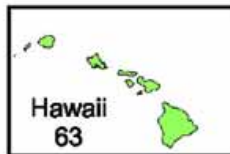


Current Installed Wind Power Capacity (MW)



Total: 22,613 MW
(As of 9/30/08)

Data from the American Wind Energy Association (AWEA) and Global Energy Concepts (GEC) database.



U.S. Department of Energy
National Renewable Energy Laboratory



15-OCT-2008 1.1.23

UMTDI

- ▶ Sub-regional transmission effort announced by Governors of Iowa, Minnesota, North Dakota, South Dakota and Wisconsin
- ▶ Goal is to prioritize renewable generation zones sufficient to meet the needs of five states, identify transmission needed to deliver energy to load, and address cost allocation

UMTDI RPS/Goals (~15k MW)

- ▶ Iowa: 105 MW; goal of 1,000 MW by 2010; plus IPL goals
- ▶ Minnesota: 25% by 2025 (Xcel 30% by 2020)
- ▶ North Dakota: goal of 10% by 2015
- ▶ South Dakota: goal of 10% by 2015
- ▶ Wisconsin: 10% by 2015*

Stages of UMTDI

- ▶ Regionalization
- ▶ Generation zone selection
- ▶ Develop macro plan/cost estimate
- ▶ Cost allocation
- ▶ Wires in the air

Organization of UMTDI

- ▶ Leadership and management
- ▶ Formation of Executive Committee
Regulators and Governor's representatives
- ▶ Executive Committee organized two work groups
(transmission planning and cost allocation)
- ▶ Work groups self-populated by stakeholders

Charge to Work Groups

- ▶ Establish a plan that will guide and encourage the construction of interstate transmission to serve the states' commitment to cost-effective renewable generation while maintaining reliability
- ▶ Develop an equitable cost-sharing methodology

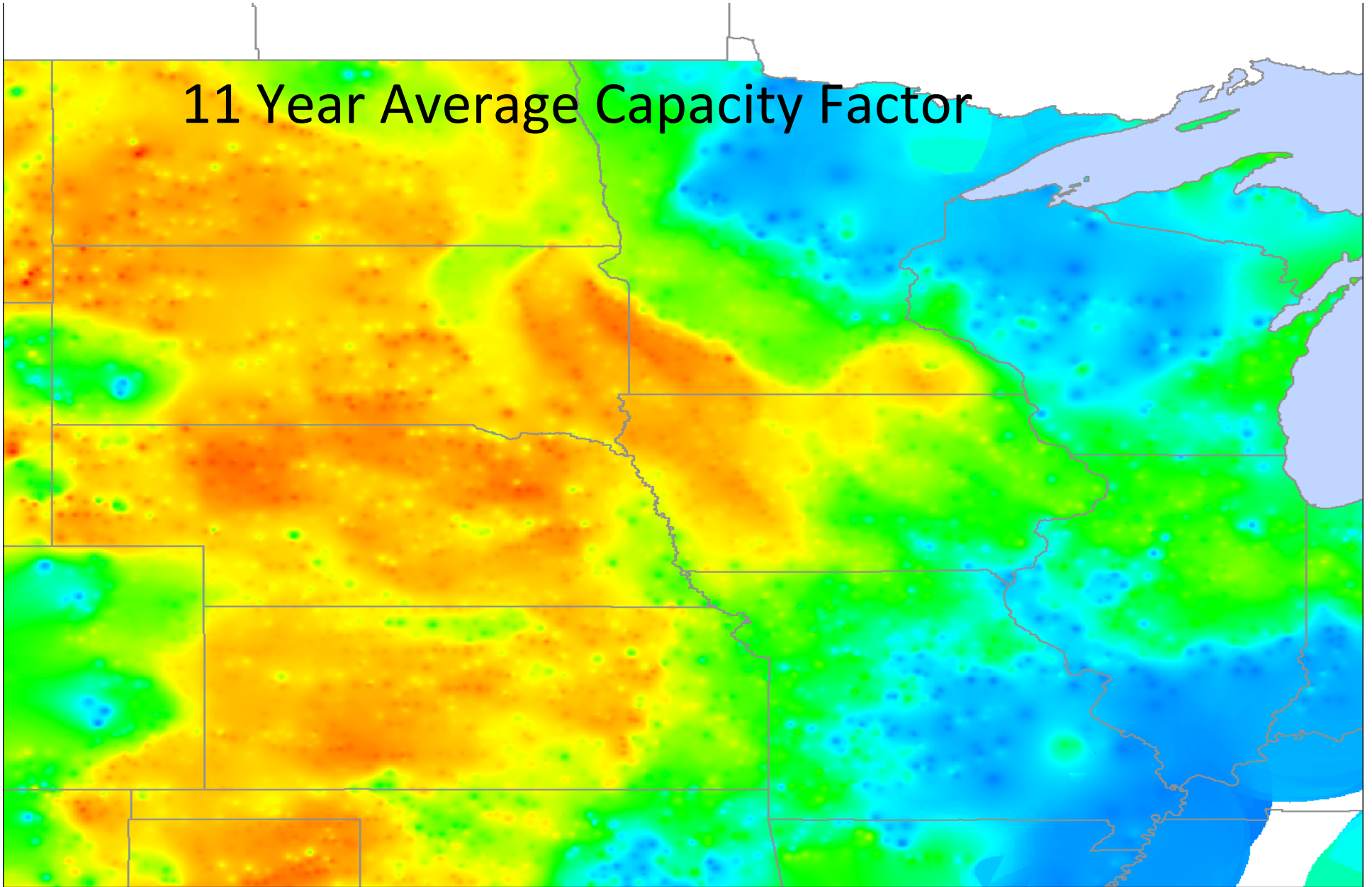
Transmission Work Group Inputs

- ▶ MISO RGOS study
- ▶ Input from regional transmission owners
UMTDI is not intended to replicate or replace work that has occurred or is in progress
- ▶ Input from state meetings to the Executive Committee

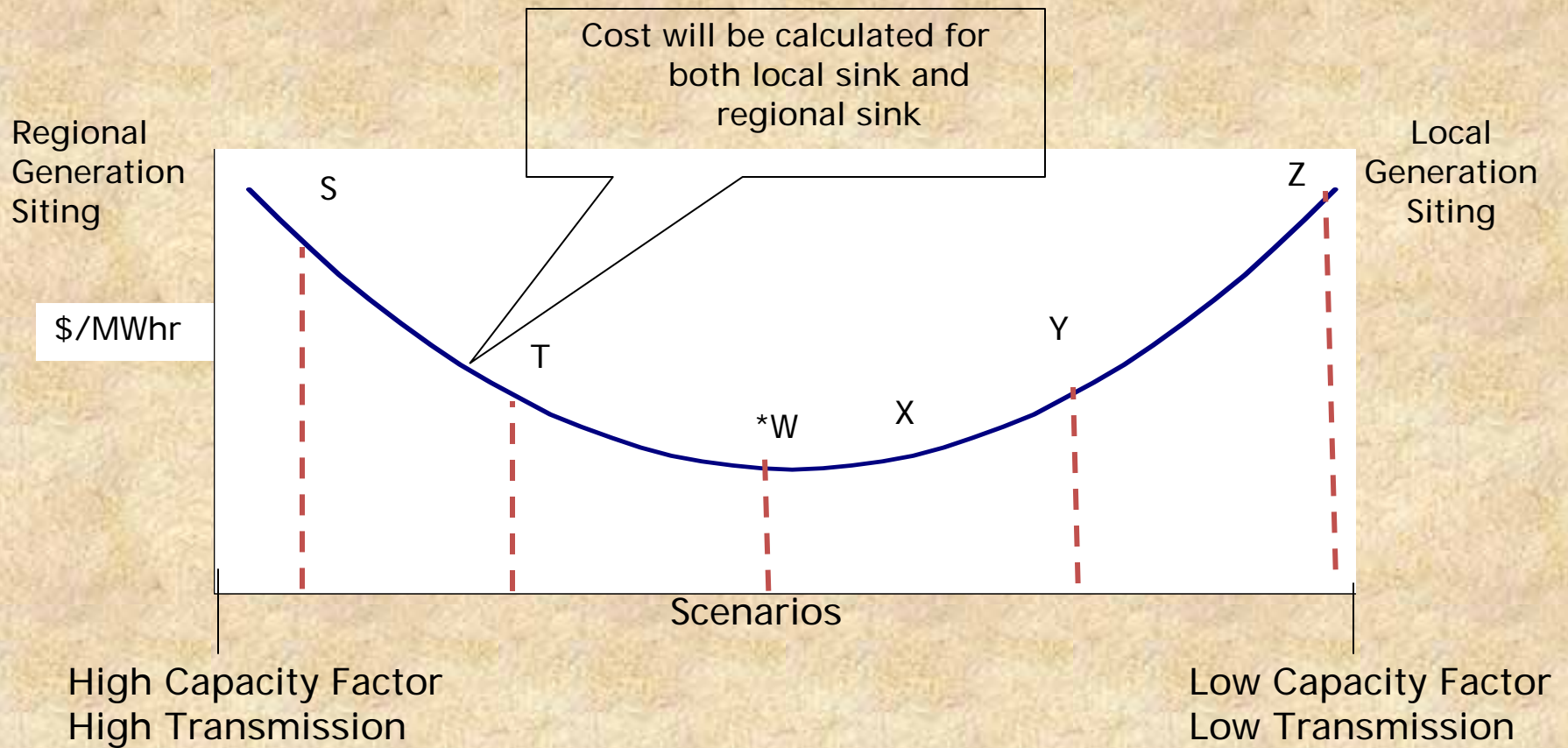
MISO Regional Generator Outlet Study

- ▶ Transmission expansion study for western half of MISO including MN, IA, WI and IL (states that have RPS as of date of scope development, Apr 08). ND and SD added for UMTDI.
- ▶ Mid-term look out 5-15 years
- ▶ Many stakeholders involved in the Technical Review Group (TRG)
- ▶ Perform wind siting studies based on DOE NREL 11 year average capacity factor wind data and additional inputs to identify the optimal renewable energy zones

11 Year Average Capacity Factor

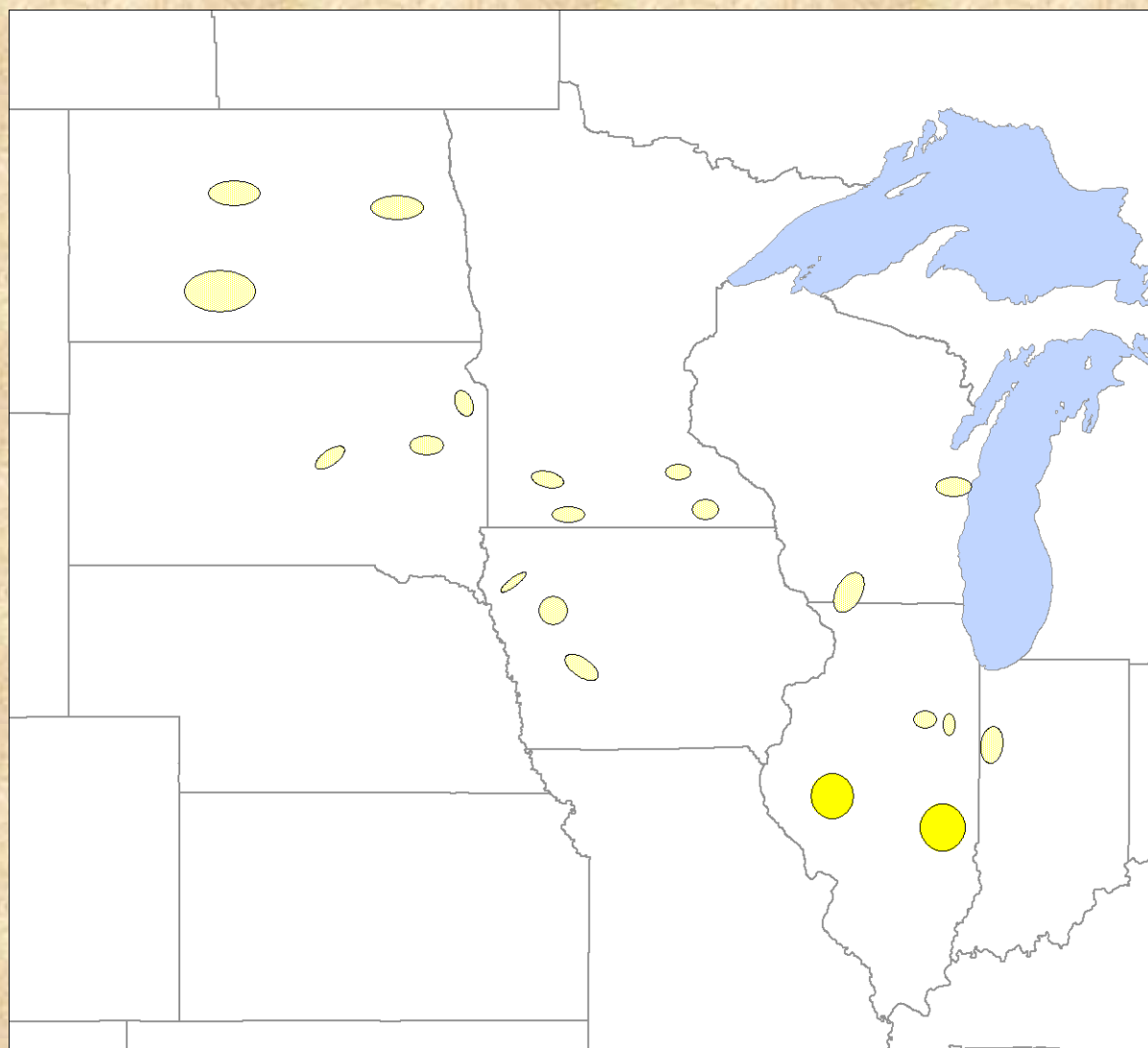


Balancing Generation and Transmission Investment



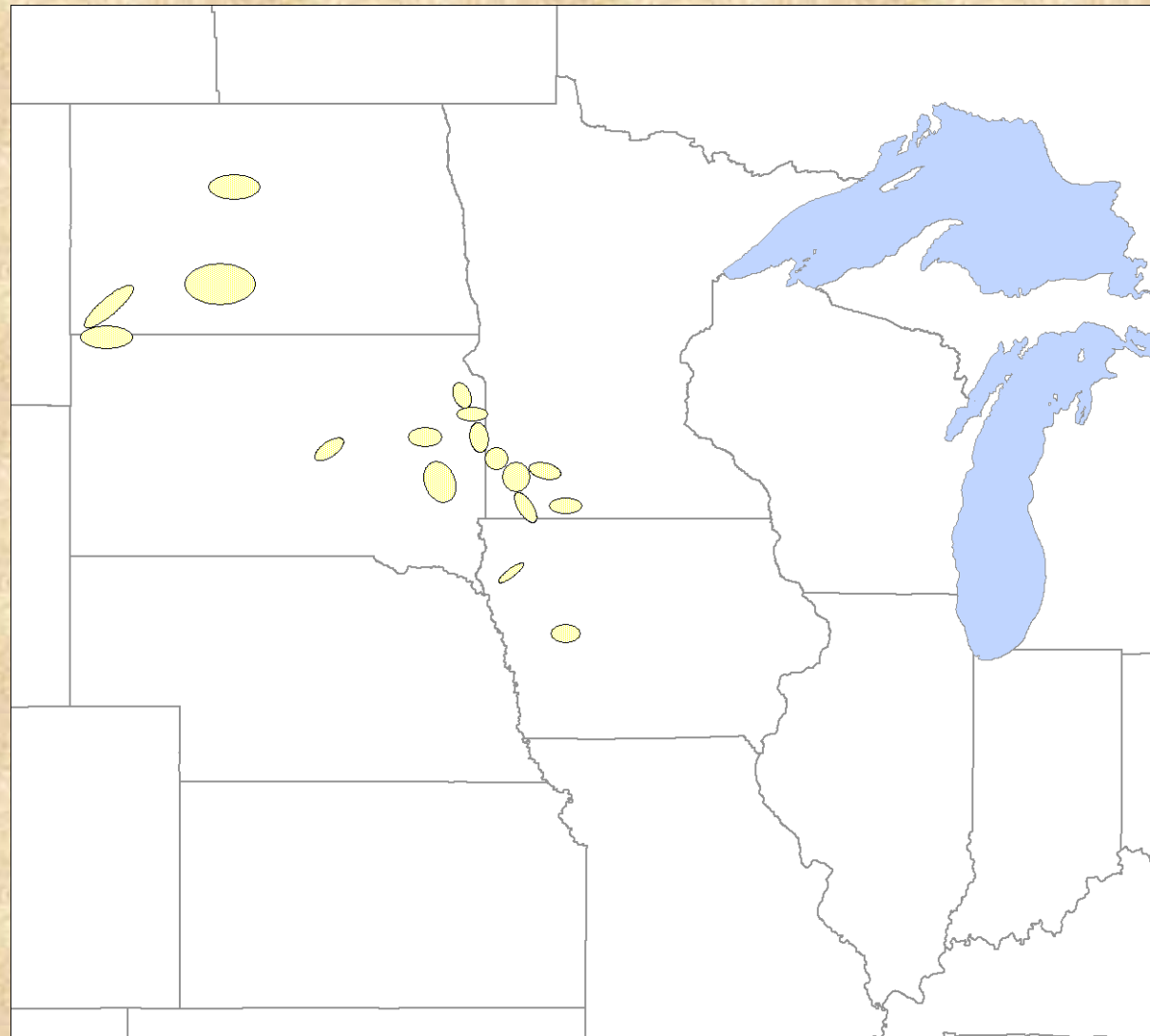
Map of Zones by Scenario

S Zones

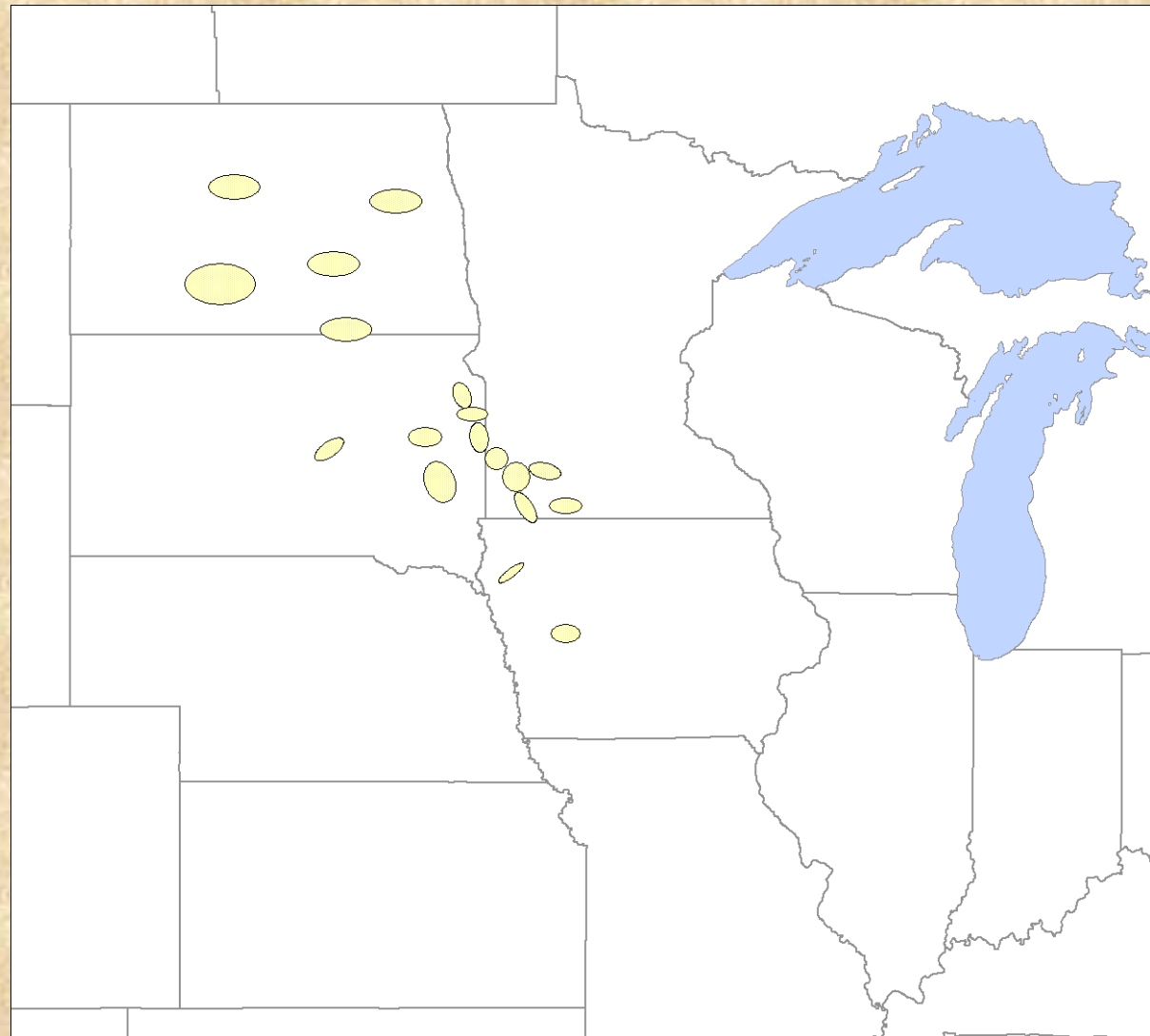


Wisconsin has requested a scenario (S.1) with a zone in Lake Michigan. Work has not been completed to include with this presentation

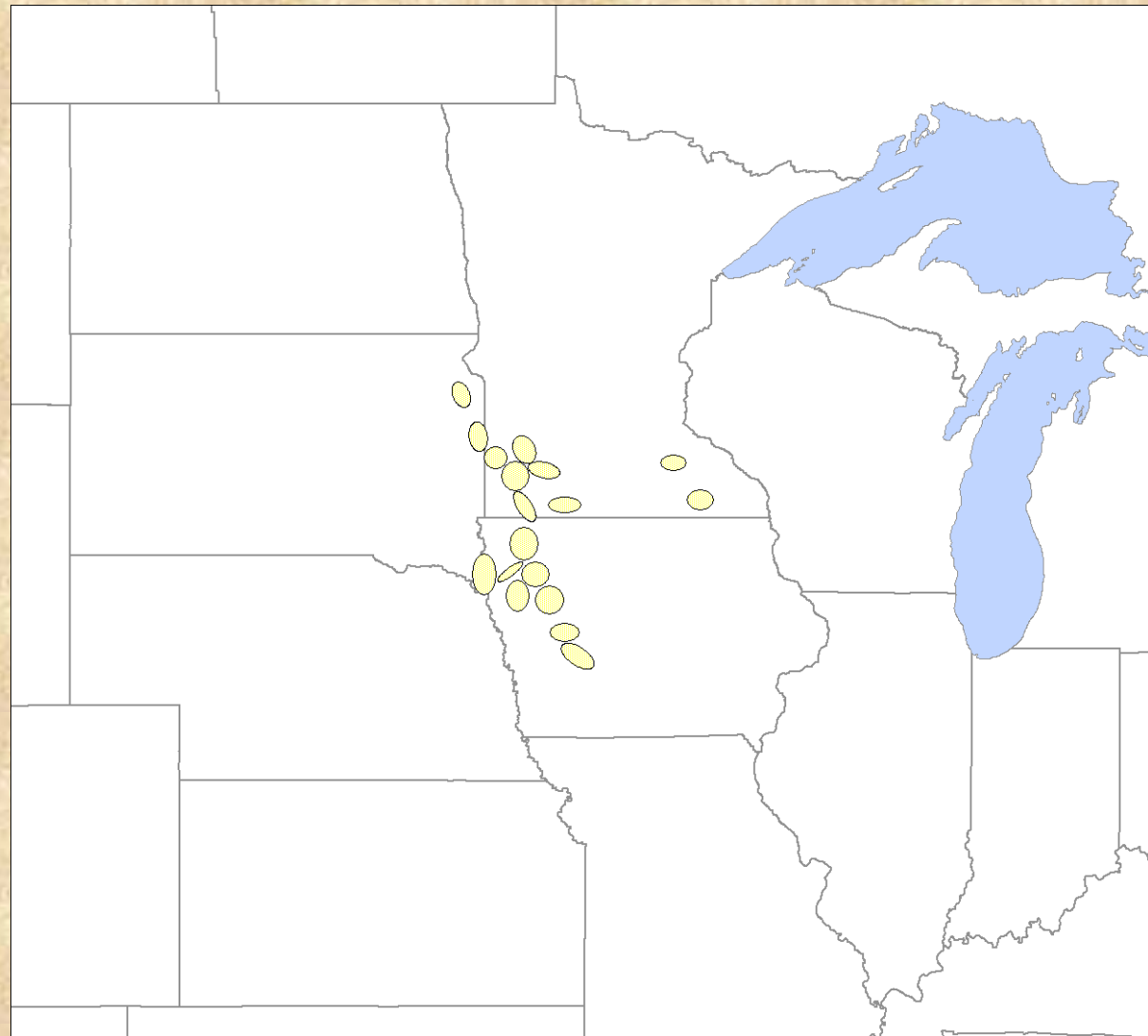
T Zones



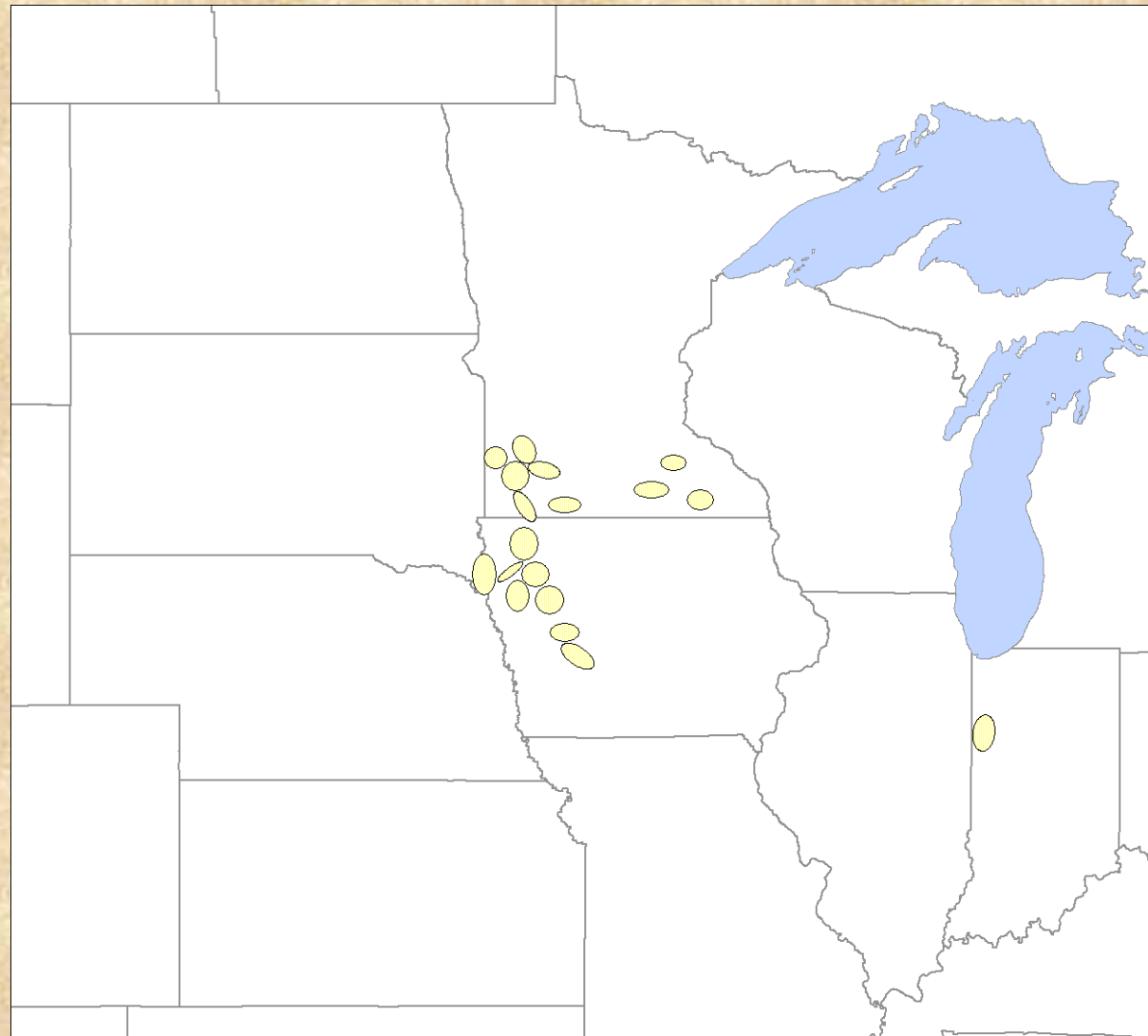
T.1 Zones



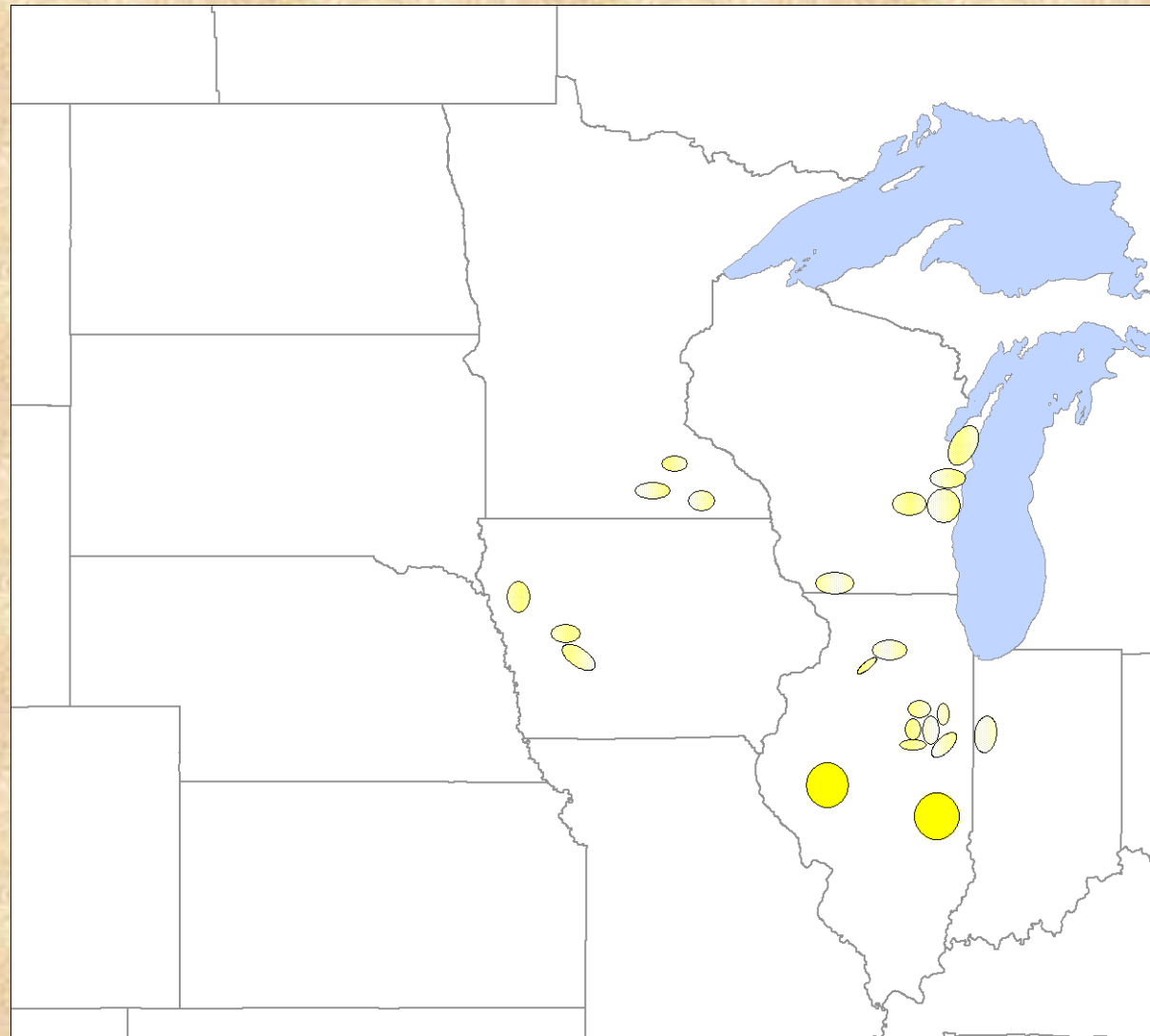
W Zones



X Zones



Z Zones



Transmission Work Group Phases

- ▶ First phase: select generation zones for design studies of transmission projects that will move energy to load centers within the five states
- ▶ Second phase: use generation zones to create slate of candidate transmission projects
- ▶ Governors will assess progress and adjust the work of the UMTDI as necessary at the end of each phase
- ▶ UMTDI proposes to complete its work in Fall 2009

Cost Allocation Work Group

(Eric Callisto, Chair, Wisconsin PSC)

- ▶ **Principles Study Group** – develop cost allocation principles as primary deliverable for the Work Group by April 2009
- ▶ **Benefits Measurement Study Group** – develop appropriate metrics for assessing benefits of transmission investment that support renewable energy.
- ▶ **Survey Study Group** – review existing cost allocation concepts and practices and broadly assess their applicability to the UMTDI states. The Survey Study Group’s cost allocation review should collaborate, to the extent possible, with the current OMS cost allocation review process
- ▶ **Legal Framework Study Group** – state, regional, and federal legal analysis to assess legal and statutory barriers and needs relevant to a UMTDI cost sharing agreement
- ▶ **Longer term deliverable:** design 2-3 tariff proposals for Governors to consider (Fall 2009)

Thank You

Questions or Comments?

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