

Powering the Plains:

Creating a Positive Energy Future for the Upper Midwest



Presentation to the
Western Regional Air Partnership Board of Directors
Phoenix, AZ



Geography, Participation, Funding



PTP Region

- IA, MN, ND, SD, WI and Manitoba
- Some IL, MT and WY participation

Participants

- Elected and government officials
- Energy and other industry executives
- Farm organization representatives and agricultural producers
- Environmental advocates

Broad Funding Base

- Foundations, utilities, farm organizations/producers, and NGOs.



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Premise and Vision



Premise of PTP

- Opportunity-oriented focus: adding economic value to region's energy and agricultural sectors

PTP Vision

- Participants have endorsed a 25-50 year transition to an energy system that relies on energy efficiency, renewable energy and carbon-neutral production of electricity, hydrogen and other fuels





Rationale



Untapped regional potential for climate-friendly energy development

- World class renewables potential: top in wind, significant biofuels/biomass and hydro
- Pioneering experience with climate-friendly coal technologies
- Substantial carbon sinks: prairie soils, wetlands and geologic formations
- Opportunity to become net exporter of renewable and carbon credits



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PTP Delegation to Europe



- **Netherlands, Denmark, Germany and Iceland**
- **Challenge assumptions about what's possible in our region**
- **Learn from leading countries' experience with:**
 - Renewable energy development
 - Climate change policy
 - Transition to hydrogen fuel
- **Apply lessons learned in our region**



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Lessons Learned from Europe



- Large increases in renewable energy are achievable.
- Reducing greenhouse gas emissions can drive innovation, job creation and growth.
- A 30 to 50-year vision, measurable targets, and clear policy incentives are critical.
- Comprehensive strategies yield maximum results.
- Leadership and public support matter more than resources or population base.



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Achieving the Transition Here: PTP Regional Strategies



- Develop 25-50 year regional energy transition roadmap
- Lay foundation for large-scale renewable energy development
- Establish leadership position in renewable and carbon-neutral hydrogen production



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Achieving the Transition Here: PTP Regional Strategies cont.



- Chart transition path to carbon-neutral coal
- V. Demonstrate new technologies and synergies among region's key energy resources
- VI. Engage policy-makers in support of policies and projects to achieve the transition





I. Regional Transition Roadmap



Resolution from Legislators Forum

- Unanimous, bipartisan statement from 32 MB, MN, ND and SD legislative leaders
- Endorses regional transition that **“relies on clean energy production and sequestration of carbon dioxide”**
- Charges PTP to develop:
 - scenarios, goals and measurable targets; and
 - Identify legislative and institutional measures to implement transition roadmap





I. Regional Transition Roadmap



PTP Response to Resolution

- Develop scenarios for 80% CO₂ reduction from 1990 levels by 2050 in Upper Midwest
 - Everything on table: Renewables, coal gasification, nuclear, carbon sequestration, and efficiency
 - U of MN research team will complete research and system dynamics model in June of 05
- Use scenarios to:
 - Build agreement on measurable goals and targets
 - Guide policy and project development





II. Large-Scale Renewables Development



Upper Midwest Renewable Energy Tracking System (M-RETS)

- Accounting system for renewable energy credit trading market
- Draft technical recommendations this month
- Endorsement of region's state/provincial regulators
 - Governing board of regulators to be formed in June
- Operational by end of 06
- ND legislative authority passed this year
 - SD in 06



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III. Renewable and Carbon-Neutral Hydrogen Production



- Establishment of public-private Upper Midwest Hydrogen Initiative (UMHI)
 - Consortium of regional companies, research institutions and other stakeholders
- Model Regional Hydrogen Transition Act
 - Elements passed in the Dakotas and pending in Minnesota (two bills and two resolutions)





IV. Transition to Carbon-Neutral Coal



PTP Regional Coal Gasification Work Group

- Foster incremental 25-50 year transition from combustion to gasification with CO₂/mercury capture and geologic sequestration of CO₂
- Convene coal and utility industry executives, NGO representatives, state officials/legislators and congressional staff in June or July of 05
 - Dakotas, IA, MN, WI plus MT and WY
- Develop framework of strategies, policies and demonstration projects:
 - New plants and repowering of existing facilities
 - Linkages to large-scale wind and hydrogen development





IV. Transition to Carbon-Neutral Coal



Why?

- Three fourths of region's power from coal
- Western states highest per capita incomes in coal counties
- Suitable geologic reservoirs
- Pioneering ND experience with gasification and CO2 sequestration

Benefits

- Near total capture of CO2 and mercury
- Greater acceptance of new transmission
- Better coal technology to partner with wind
- Avoidance of future carbon liability; opportunity to market CO2 credits
- Potential for carbon-neutral hydrogen production



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VI. Engaging Policy-Makers



Partnership with Legislators Forum (MB, MN, ND and SD)

- Model legislation recommended and passed in 05 sessions (hydrogen and credit tracking)

Utilities Commissioners

- Regional credit tracking system design and implementation

Congressional Delegation

- Federal policy recommendations

Governors/Premier and Staff

- Energy MOU among governors/premier proposed





Thank You

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