

# International Renewable Energy Partnerships



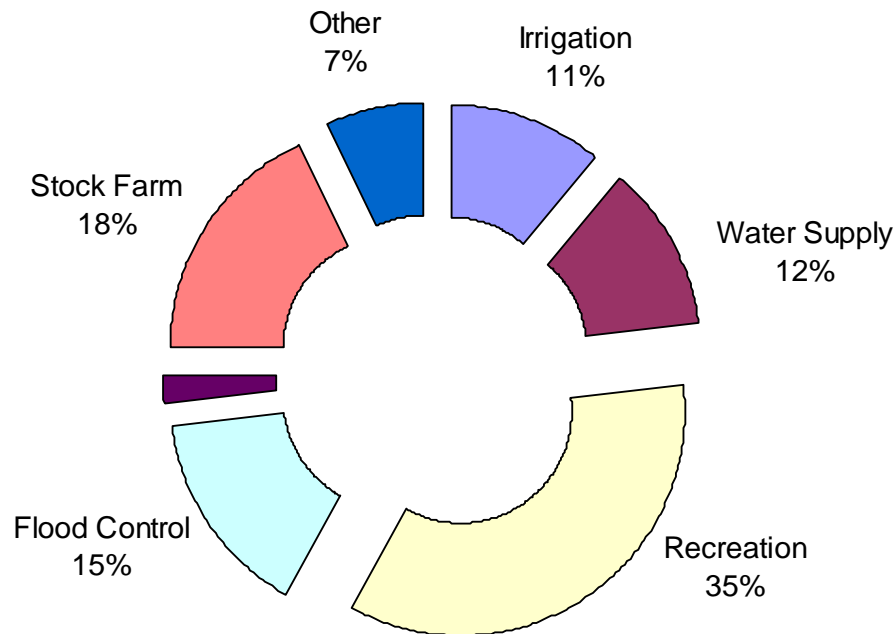
David J. McMillan  
Executive Vice President-Minnesota Power



# U.S. Hydropower Today

What is the primary purpose of U.S. Dams?  
(Hint: its not electricity production)

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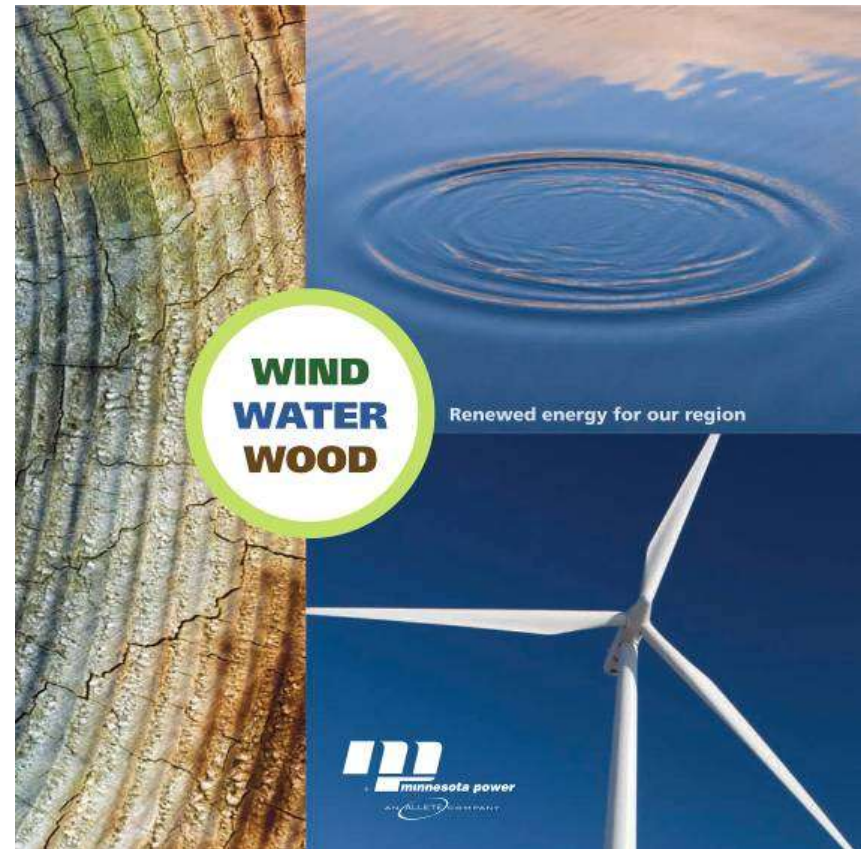


**Only two percent of the dams in the U.S. produce hydropower.**

# U.S. Hydropower Today

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- Approximately 2,400 facilities with 96,000 megawatts (MW) of generation capacity
  - 67 percent of U.S. renewable energy generation
  - 7 percent of total U.S. electricity generation capacity
- **Only one country has more new hydropower potential than the United States**





# ALLETE at a Glance

## Minnesota Power

- Regulated electric utility. 144,000 customers in NE MN and NW WI. Serves some of the largest electric customers in the U.S. Also serves 16 municipal systems.
- Significant new transmission and renewable investments.



## Superior Water, Light & Power

- Regulated electric, natural gas and water utility.
- Serves 15,000, 12,000 and 10,000 electric / natural gas water customers in northwest Wisconsin.



## BNI Coal

- Low cost lignite coal supplier. Mines about 4 million tons of coal a year, annually reclaims 200 acres of mine land.
- 600 million tons of lignite coal reserves



## ALLETE Clean Energy

- Develops or acquires clean energy capital projects for electric utilities, cooperatives, municipalities, independent power marketers and large end users.



## American Transmission Company Investment

- Stand alone electric transmission company with operations in WI, MI, MN and IL.
- ALLETE has 8% ownership of ATC—over \$90M invested to date

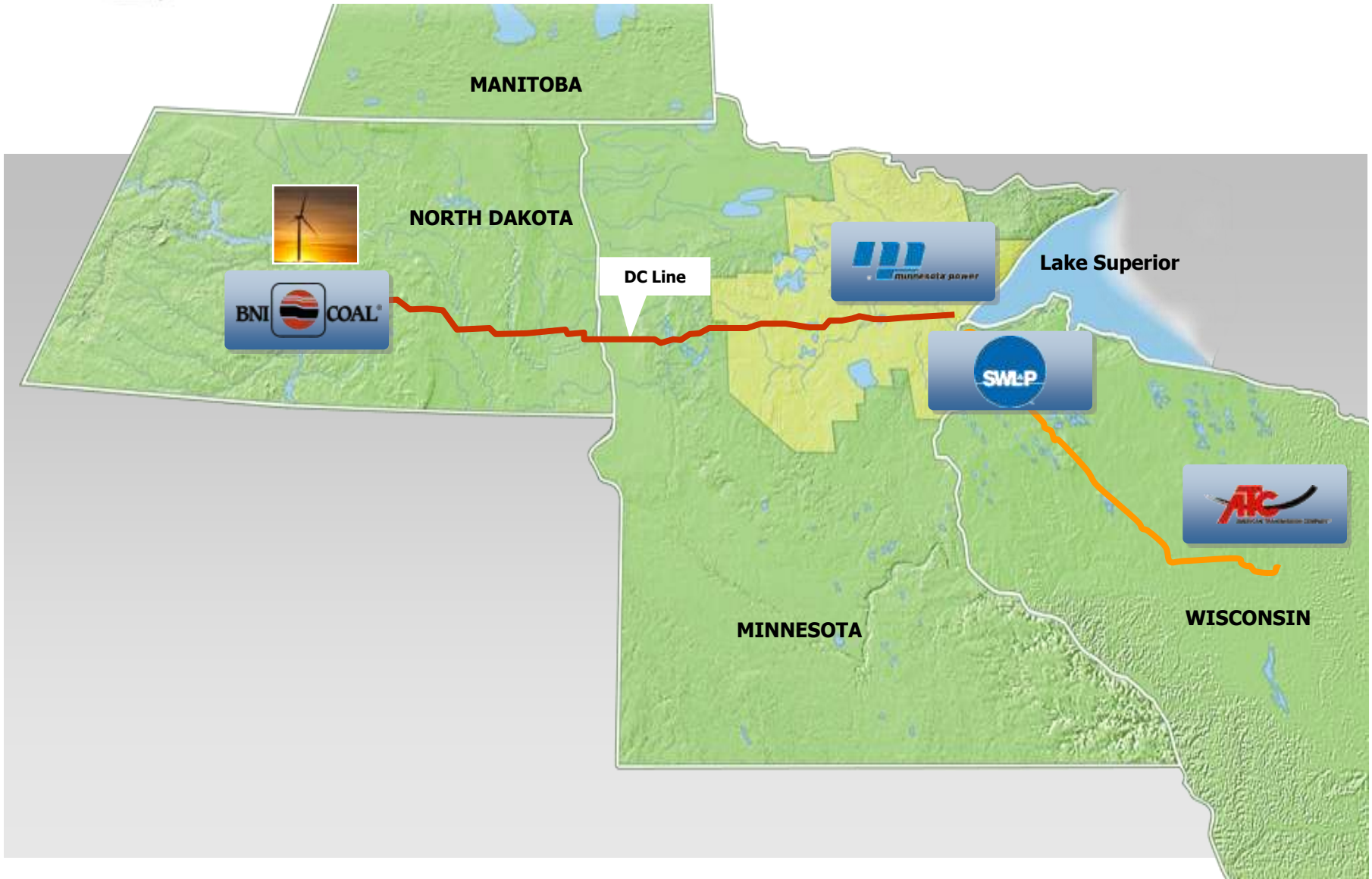


## CapX2020 Investment

- Joint initiative of 11 utilities to ensure upper Midwest electric transmission and distribution reliability
- ALLETE investing \$100-\$125M in three CAPX2020 projects.



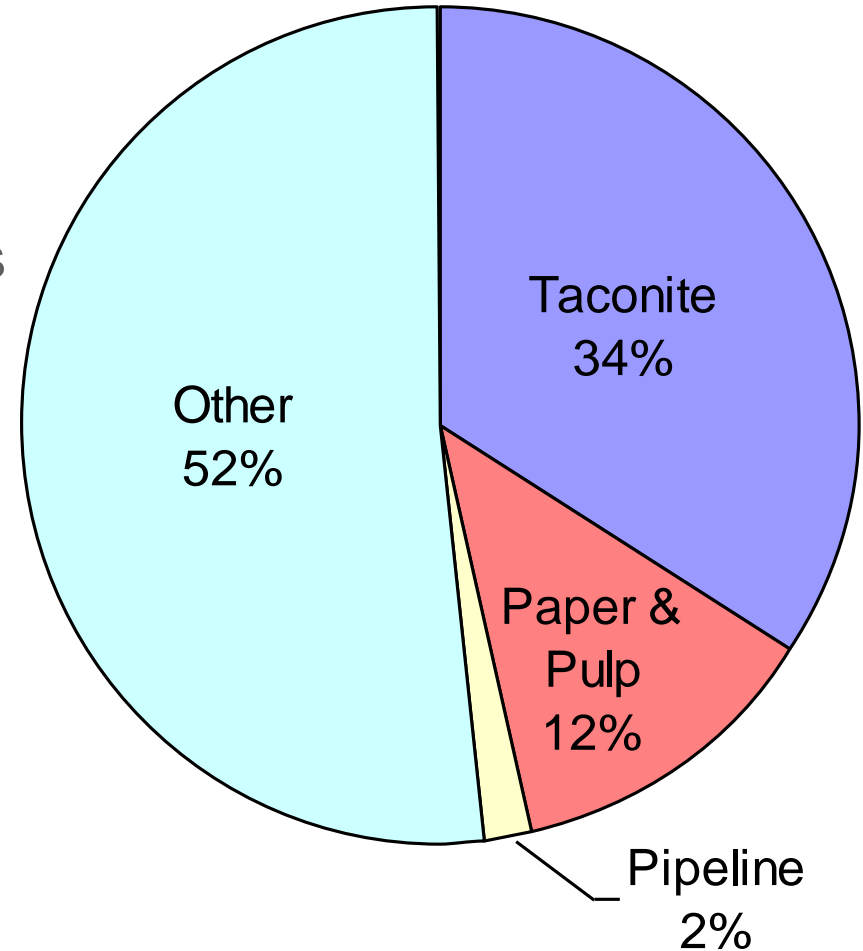
# ALLETE Energy Operations



# Minnesota Power at a Glance

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- Large Industrial Customers
- High Load Factor
- 16 Municipal Wholesale Customers
- 141,000 Electric Customers



- Only utility interconnected with Manitoba and Ontario

# Hydro Generation

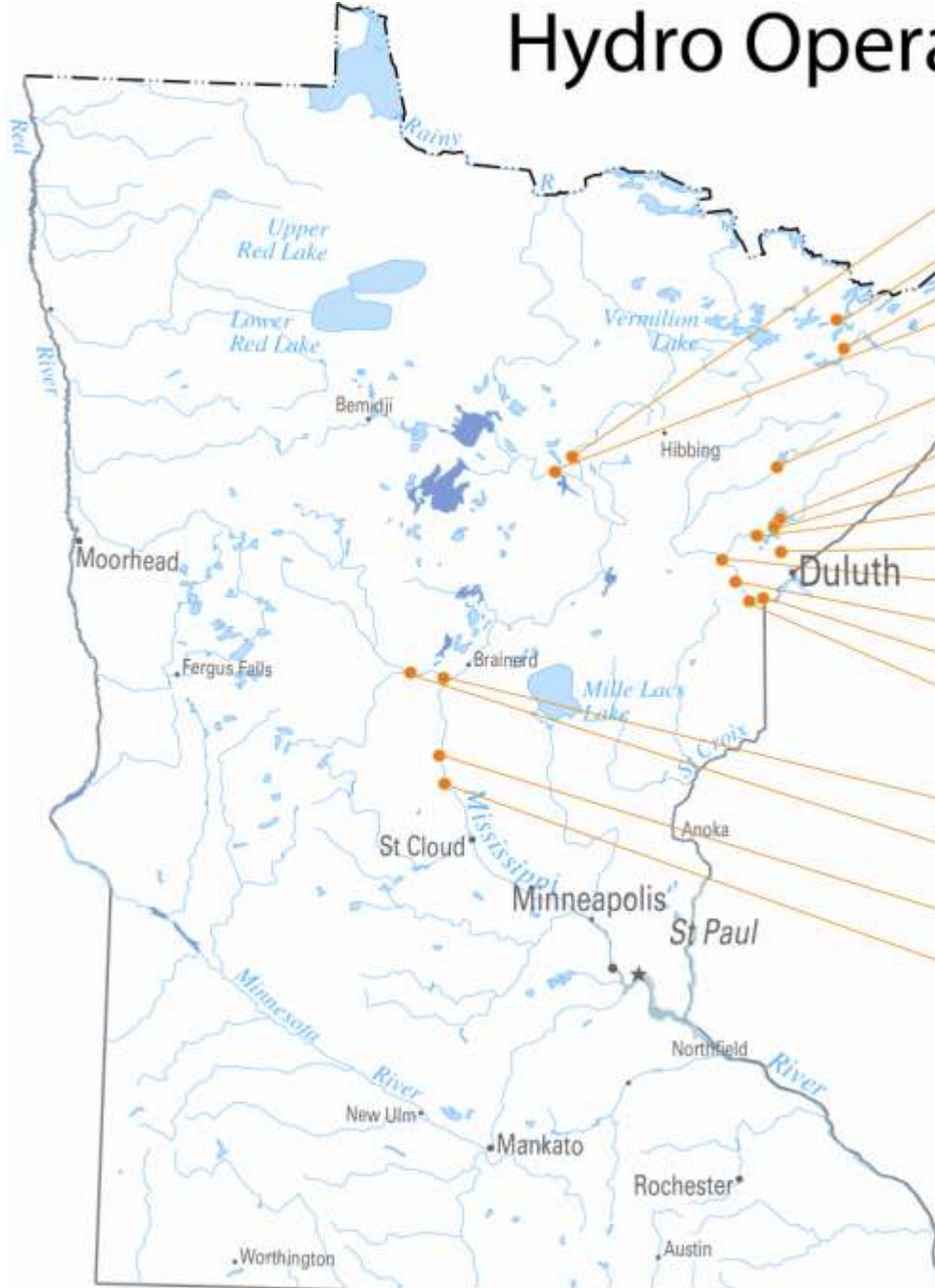
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- Minnesota Power was 100% hydroelectric until 1931
- Today, Minnesota Power operates the largest hydroelectric system in Minnesota with ~120MW, supplying approximately 5% of our annual sales



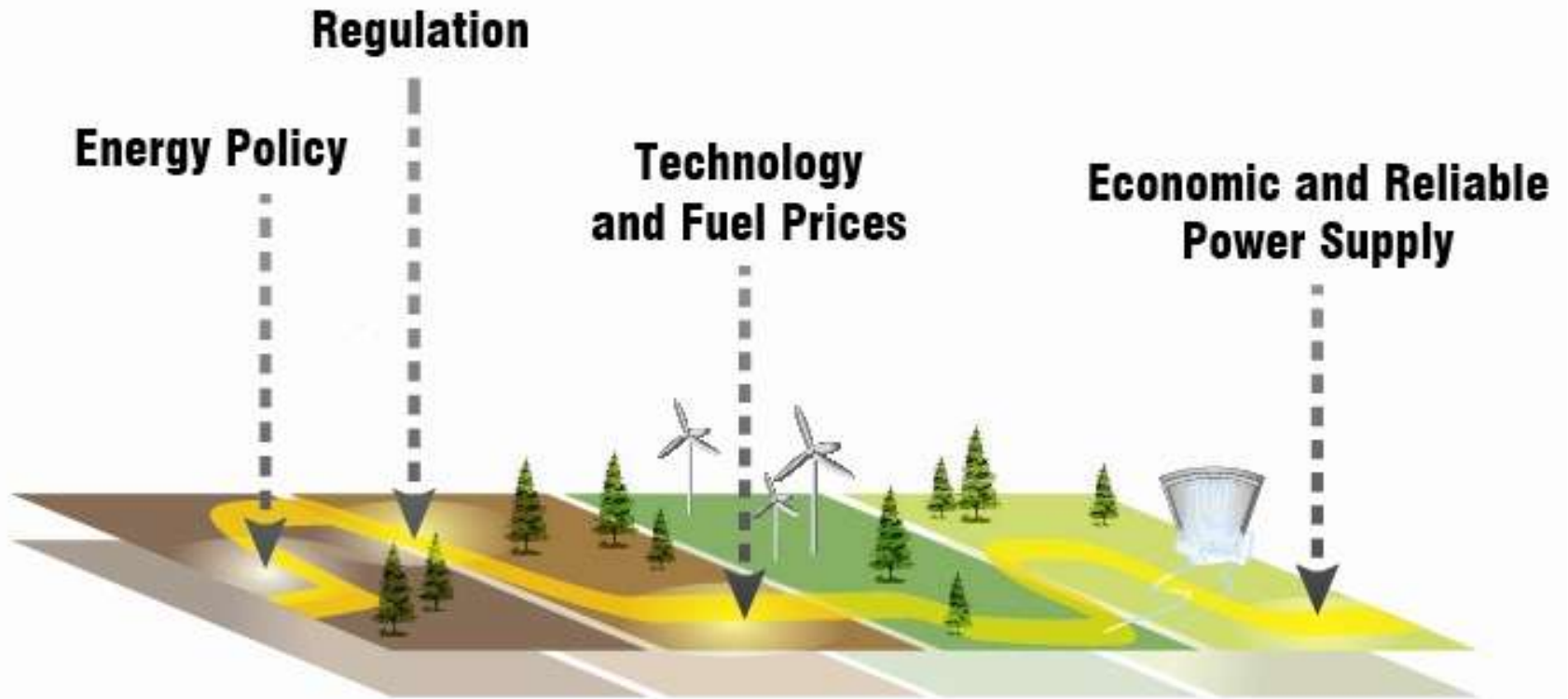
# Hydro Operations



- Prairie River Hydro
- Winton Hydro
- Birch Lake Reservoir
- Rapids Energy Center
- Whiteface Reservoir
- Boulder Lake Reservoir
- Island Lake Reservoir
- Fish Lake Reservoir
- Rice Lake Reservoir
- Knife Falls Hydro
- Scanlon Hydro
- Fond du Lac Hydro
- Thomson Hydro
- Sylvan Hydro
- Pillager Hydro
- Little Falls Hydro
- Blanchard Hydro

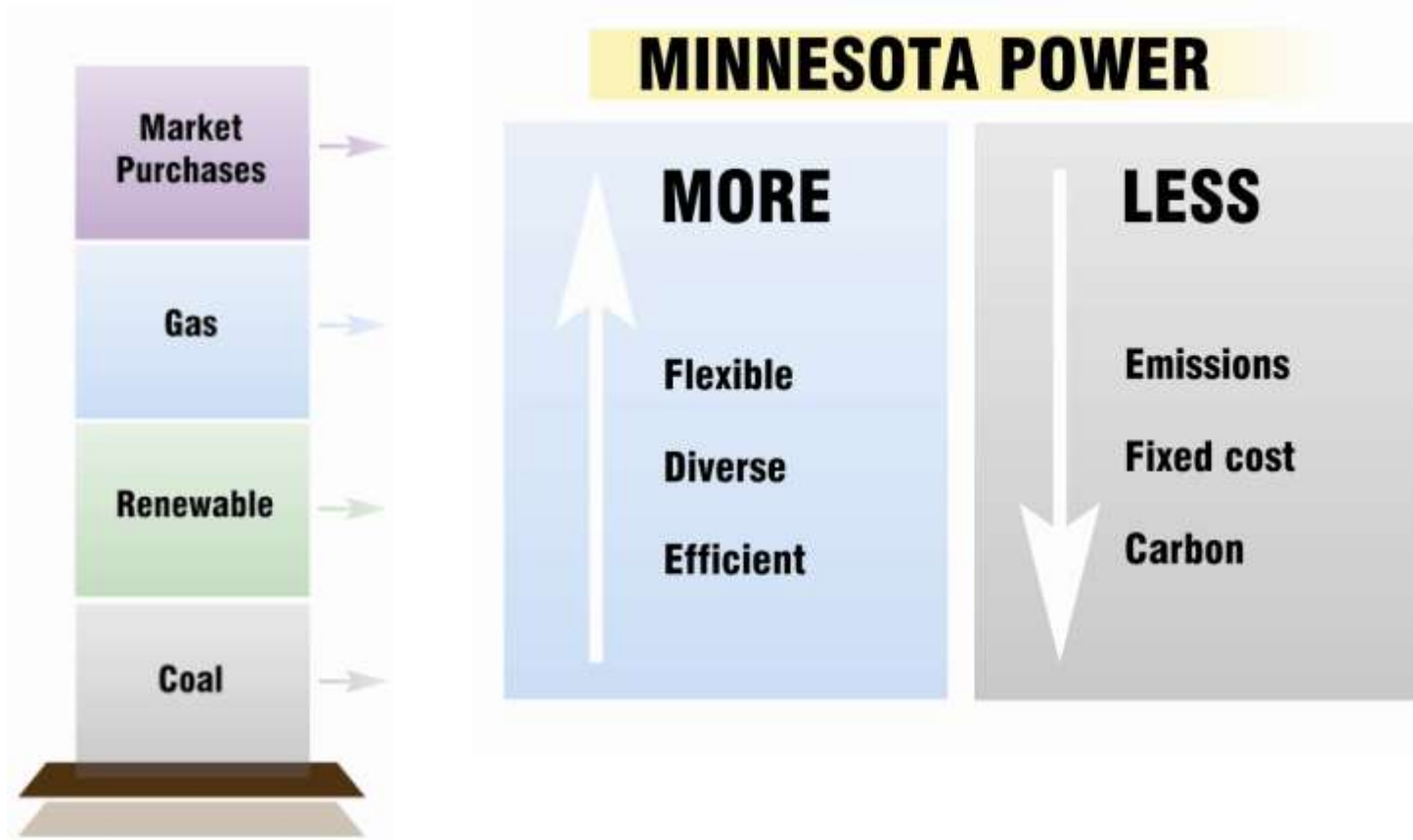
# Setting the Stage: Energy Industry Trends

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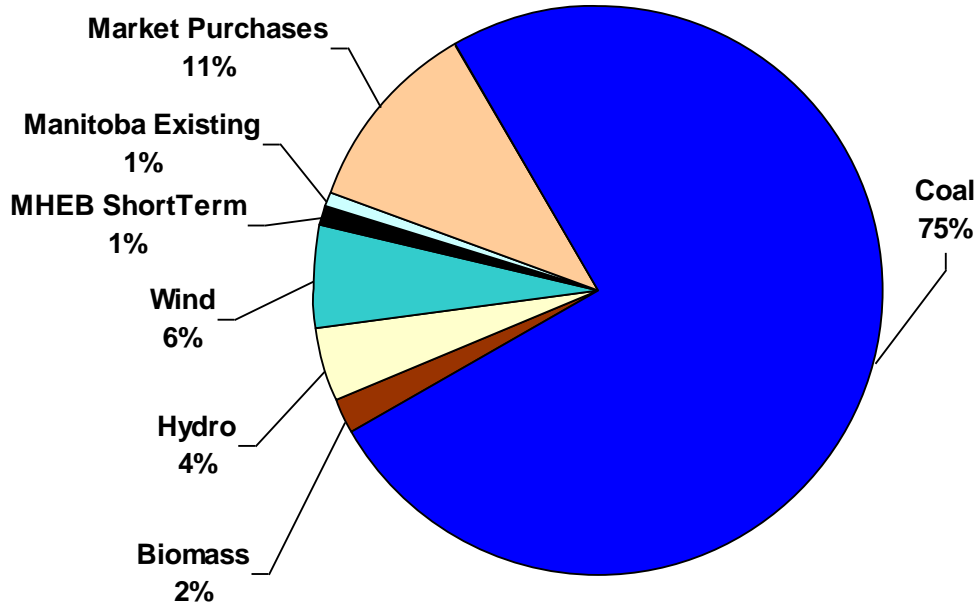
# Power Supply Principles



*Results in a competitive, compliant and socially responsible regional power supply*

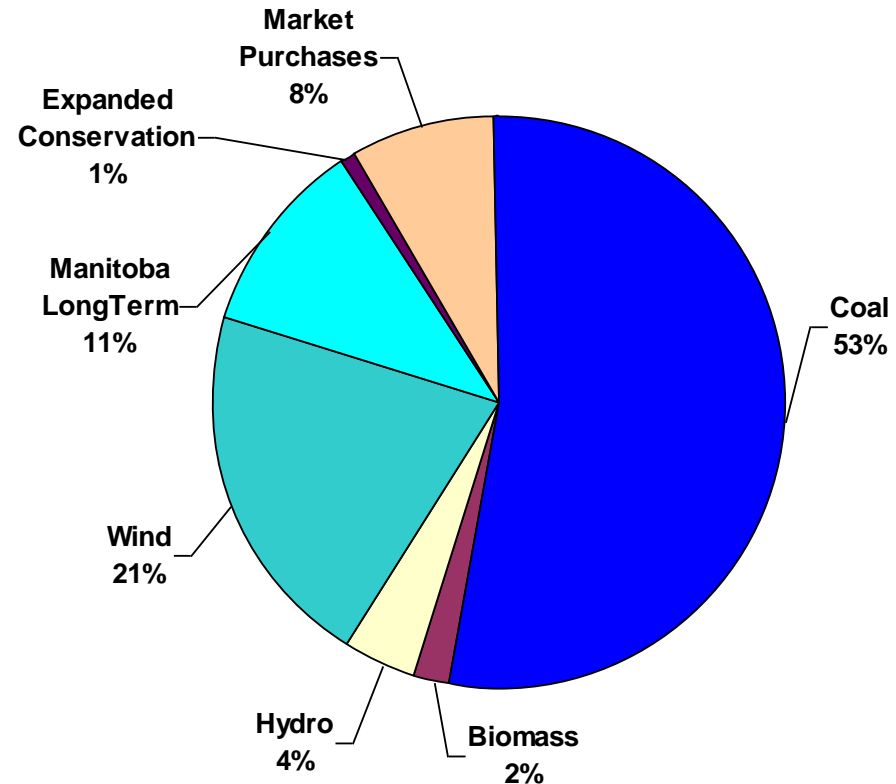
# Reshaping for Long-Term

**MP Energy Sources in 2012**



**MP Energy Sources in 2024**

*Latest Integrated Resource Plan*



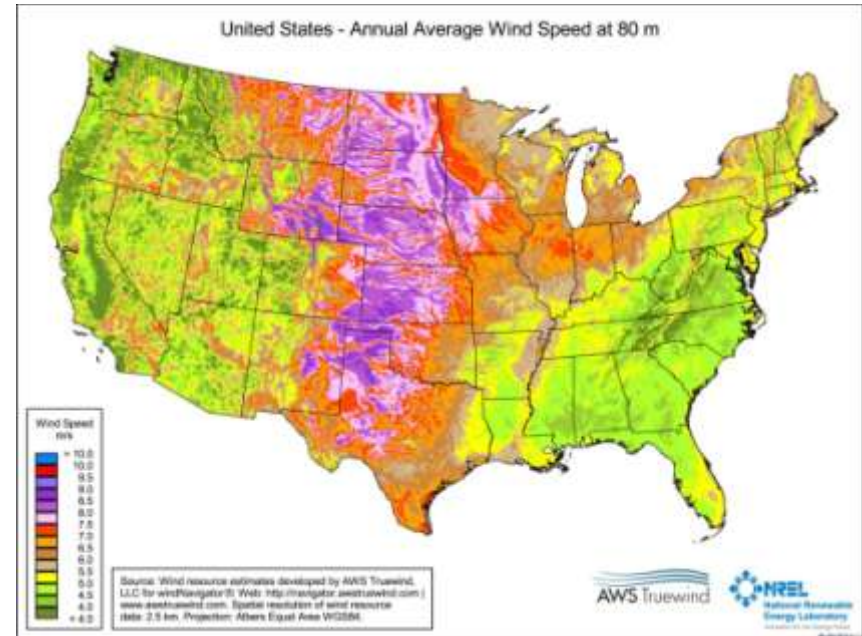
# Positioning for the Best Resources

## Access to Canadian Hydro Generation



- New 250 MW contract with Manitoba through 2035
- Power Purchase Agreement ~ Under MPUC Review

## Access to quality wind sites in U.S.



- Capacity factor 43-45%, double the U.S. average
- 60,000 acres
- Bison 1 ~ Phase I Implemented
- Bison 2 ~ Approved
- Bison 3 ~ Approved

# Manitoba Hydro Purchase



- Long term power purchase agreement with Manitoba Hydro for carbon free hydroelectric energy
- Leading the industry with a “wind storage provision”



# Manitoba Hydro Purchase & MP's Power Supply

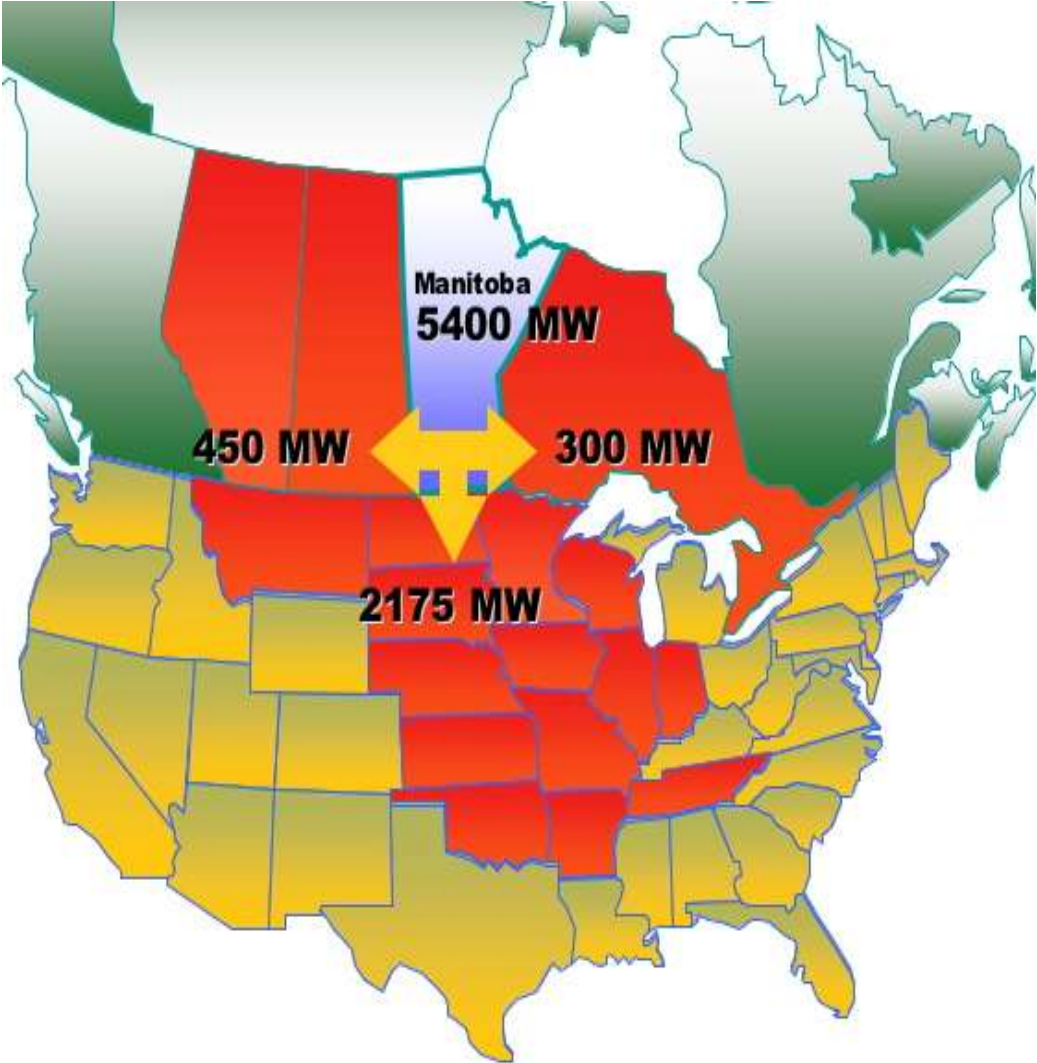
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- 1.5 Million MWhs of Energy and 250MW of capacity annually
- 15 year term: from 2020 - 2035
- Largest power purchase since 1974
- Manitoba Hydro Transaction Provides:
  - Low Cost
  - Block of on-peak renewable energy
  - Certainty for future power supply expense



# New Transmission from Manitoba Required

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# Questions

