

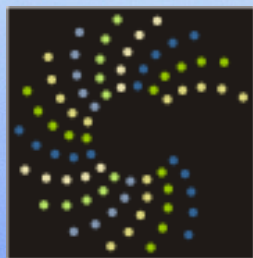
# Metropolitan Council Strategic Energy Collaborations:

- Metropolitan Counties Energy Task Force
- University of Minnesota

**February 28, 2007**

**Jason Willett**  
MCES Finance Director

# **Metropolitan Council and the Metropolitan Counties Energy Task Force (MCETF)**



**Members:** Anoka County  
Dakota County  
Hennepin County  
Ramsey County  
Scott County  
Sherburne County  
Washington County



**Partner:** Metropolitan Council  
Council Representative: Peggy Lippik

- **Established 1999**

- **Key Issue: Deregulation**
- **Allowed member counties to address issues related to energy policy by identifying key issues to County government.**

- **Met monthly**

- **Not organized as Joint Power, but shared administrative cost group.**

**Ongoing: Education/coordination of County initiatives on energy**

- 2007: Working Groups:**
- 1. Legislative**
  - 2. Conservation**
  - 3. Wind**

# MCETF Objectives

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*MCETF Counties will become better stewards of the energy they consume by:*

- **Developing better measures of energy consumed,**
- **Improving understanding about why the energy is consumed, and**
- **Creating opportunities to consume: 1) less total energy, 2) more alternative fuels, and 3) more efficient technologies.**

# MCETF Objectives

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*The Task Force will:*

- **Promote energy conservation measures and thereby reduce costs to taxpayers, and**
- **Utilize new energy technologies and renewable energy to achieve greater energy security, contribute toward greater energy independence, and decrease the environmental impact of our energy production and consumption.**

## *MCETF shall:*

- **Build strong partnerships with all entities that share its goals and objectives, and**
- **Work with local government jurisdictions to establish a strong voice to develop energy policies that work for local government.**



- 1. Partnership w/Rural MN Energy Board  
(17 SW Minnesota Counties)**
  - Governance study**
  - County wind initiative**
- 2. Groundwork for \$2 million conservation initiative**
- 3. Website: [www.mncounties3.org/mcETF](http://www.mncounties3.org/mcETF)**
- 4. Included county buildings in Building, Benchmarking and Beyond (B3) energy initiative**
- 5. Participated in Xcel rate case**
- 6. Tracking state energy funding and legislation**

**A. Conservation Initiative**

- County building energy use
- \$s from “Alternative CIP” (Xcel)

**B. Wind Energy Initiative**

- Establish governance structure
  - “Renewable Energy Agency” recommended 2/1/07
- Pursue LCCMR funding for business plan
- Develop financial/technical detail of business concept

## **C. Policy Activities**

- Track legislative and regulatory proceedings**
- Identify and prioritize future energy projects**

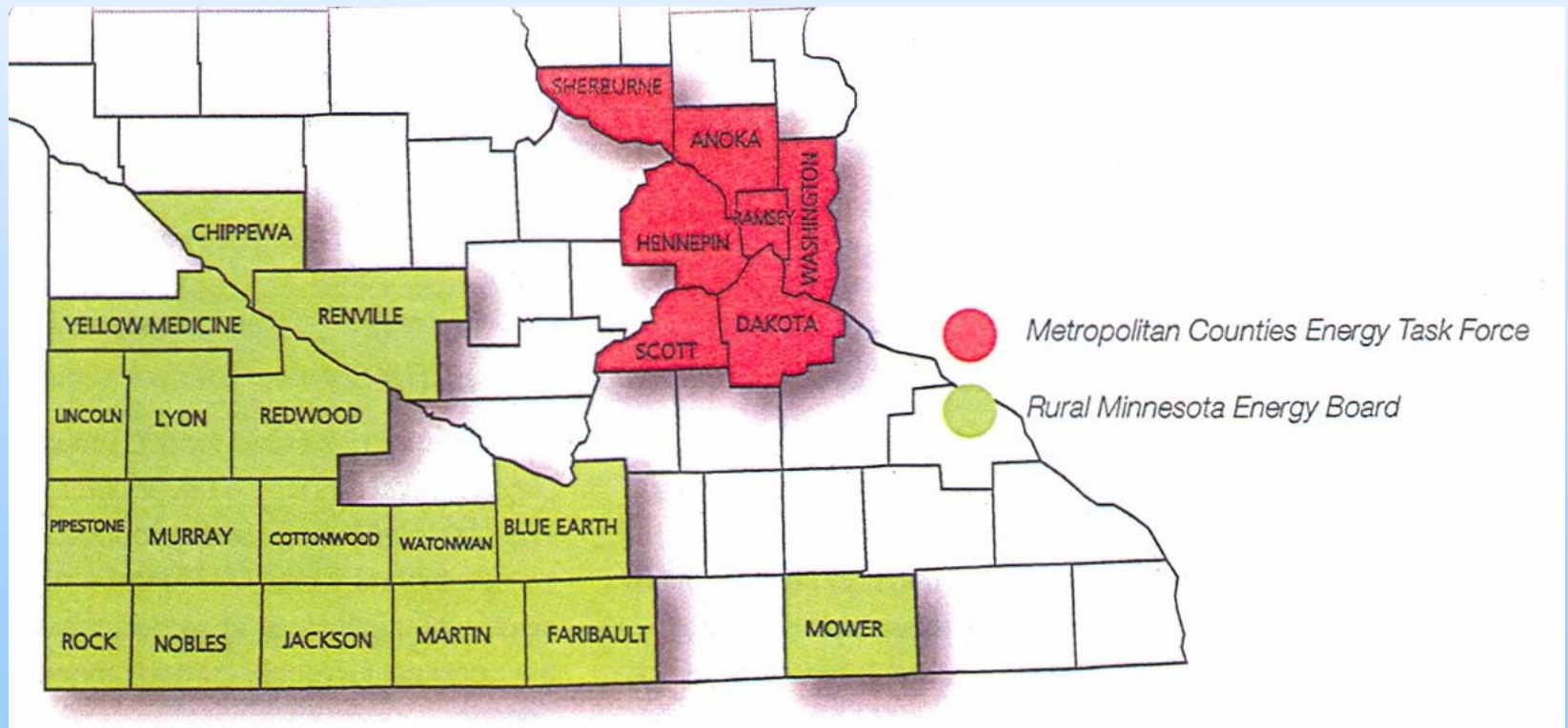
## **D. Administration**

- Update mission, by-laws and goals**
- Evaluate legal structure of task force**
- Improve website**
- Outreach**

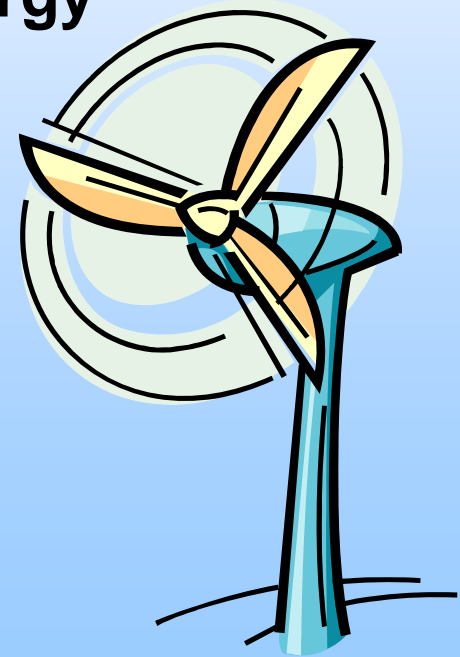
# MCETF

## Counties Wind Project (CWP)

- Joint effort of Rural Minnesota Energy Board (RMEB) and MCETF



- **Goal: Develop wind energy projects that will produce 100 to 150 megawatts of electricity to supplement electricity needs of the members**
  - **Minnesota goal of 25% renewable energy by 2025**
  - **Community-based wind development is a priority**



## *Expected outcomes*

- **Assist in stabilizing long-term electricity costs**
- **Acquire clean, affordable, and reliable renewable energy**
- **Assist local wind energy development**
- **Spread benefits of renewable energy development to communities across the state**
- **Contribute to statewide energy independence**
- **Keep investment revenues in Minnesota**
- **Promote job creation**

## *Milestones*

### ■ **Spring – Summer 2007**

- Pursue REA legislation
- Evaluate business model
- Conduct additional financial analysis
- Begin analysis of wind resource overlay with distribution system capacity

### ■ **Fall 2007**

- Create a business plan
- Analyze locations for siting wind turbines

### ■ **Late 2007**

- Form CWP governing entity with interested members from MCETF and RMEB



# Metropolitan Council and the



# University of Minnesota (U of M)





- **Peter Bell and Dean Elde initiative**
- **Focus: Identification and development of energy research beneficial to Council operations**

- **3 “Leadership” group meetings**
  - **Next meeting: April 18**
  
- **Tour of Seneca wastewater plant and brainstorming**
  - **Pending: 1) Tour of Metro in April, and  
2) Transit Facility**
  
- **Council staff meetings with U of M researchers**
  - **Ongoing**

## **A. Priority Projects**

- 1. Clean Green Bus Initiative**
- 2. Effluent-to-Algae-to-Fuel Research**
- 3. Economic Analysis Tools**
- 4. Student Internship**

## **B. Brainstorming list of other ideas**

## 1. Clean Green Bus Initiative

- **Biofuels**
- **Emissions Testing**
- **Superbus**
  - **Support increased electrical loads**
  - **Redesign inefficient support systems**
  - **Reduce/eliminate long idle times**
  - **Utilize renewable fuels**
  - **Transition to fuel cell technology**

## 2. Effluent-to-Algae-to Fuel-Research

**Effluent . . . Nitrogen, phosphorus in water  
– can be taken up by algae growth**

**Flue Gas . . . Reduction of carbon and odor**

 **Algae mass**

 **Bio-oil fuel**

## 2. Effluent-to-Algae-to Fuel-Research

### Issues . . .

- 1) Algal species (oil content, growth rate)
- 2) Efficiency of oil extraction for biodiesel
- 3) Value of residual cell mass (bio-oils)
- 4) Field conditions
- 5) Reactor type
- 6) Flue gas handling
- 7) Algal harvesting and dewatering
- 8) Patent status on technologies

## 2. Effluent-to-Algae-to Fuel-Research

**Seed money: \$20,000 from MCES, and  
possibility of U of M funds**



**Grant/RFP proposal for pilot/  
demonstration project  
(probably at Blue Lake Plant)**

## 3. Economic Analysis Tools

**Externalities = Costs/impacts beyond those borne by Council**

- **Energy and environmental impacts**
- **Jobs, taxes**
- **Local business closures**



**Use U of M expertise to develop tools that our engineering community can use to better identify externalities on MCES capital projects, in facility planning stage.**



## 4. Student Internship

- **Graduate students, probably in summer**
- **Focus on specific technical issues**
  - **MCES – aeration energy use**
    - energy database compilation
    - green house gas baseline analysis
  - **Metro Transit**
    - Model bus load cycles, idle time by route
    - Economic analysis of technology alternatives
    - Energy use analysis Rail, Bus & Facilities



**MCES: Heat traps; an opportunity to reduce energy loss.**

- **Develop cost detail in phases**
- **Pursue funding:**
  - **State research \$s (Governor's proposal)**
  - **Xcel's Renewable Development Fund**
  - **Private partners**
  - **LCCMR**
  - **Federal grants (EPA)**
  - **Council?**
  - **Other?**
- **Institutionalize collaboration, identify more ideas**