

## **Appendix A.1**

### **Minnesota**

#### **Profile**

Minnesota is a state of just under five million inhabitants located in the Upper Midwest portion of the United States. Our Gross State Product in 2015 is \$326 billion, and Minnesota boasts one of the lowest unemployment rates in our region. We have a diverse economy with strong clusters in agriculture, medical device equipment and high tech, and are home to 17 Fortune 500 companies.

#### **Targets**

Minnesota has accomplished significant reductions in GHG emissions. This work has been accomplished through a number of strategies, involving the state legislature, Minnesota's Department of Commerce, Public Utilities Commission, the MPCA, and mighty efforts by Minnesota's electricity producers. In 2011, GHG emissions declined about 12 percent from 2003 emissions, Minnesota's peak GHG-emitting year. Minnesota's policies and programs that have been in place over the last two decades have acted to reduce GHG emissions from the electricity generating sector. We describe the policies and programs, goals and implementation dates below.

State legislation passed in 2007 (Next Generation Energy Act) set aggressive GHG reduction goals from all economic sectors:

- 15% below 2005 levels by 2015
- 30% below 2005 levels by 2025
- 80% below 2005 levels by 2050

In addition, Minnesota has goals to reduce high Global Warming Potential gases such as hydrofluorocarbons, and was the first U.S. state to adopt mercury emission targets from the power sector in advance of federal regulations. Current statewide GHG emissions total 154 million tons; this is down from 2005 levels by 7 percent due primarily to increased use of renewables in the electricity sector and coal to gas conversions.

#### **Tools**

Since 1982, Minnesota has administered a demand side management program called the Minnesota Conservation Improvement Program (CIP), which is administered by the Minnesota Department of Commerce. The demand-side management program was established by Minnesota statute and modified over time to establish investment requirements, energy savings goals, and CIP planning requirements. Minnesota's CIP program is a low cost energy resource in comparison to supply-side options.

With passage of Minnesota's Next Generation Energy Act in 2007, a 1.5 percent Energy Efficiency Resource Standard (EERS) for utility conservation improvement programs was established beginning in 2010, meaning that utilities were required to develop plans to achieve savings of 1.5 percent of average

annual retail sales annually\*. This standard remains one of the most aggressive standards in the country, especially considering that efficiency programs have been operating in Minnesota since the early 1980s. Minnesota utilities operate a wide array of residential, commercial, and industrial CIP programs targeted to both retrofits as well as new construction. CIP programs also help create and retain jobs in a variety of market sectors and customers spend less money on energy, freeing up dollars for other uses.

Minnesota enacted an emissions reduction statute in 2001 that allows special recovery rate consideration for air pollution control projects, with the goal being to improve the emissions profile of Minnesota's aging coal fired utility boilers. Authorized in 2002, and finished in 2009, Xcel Energy, the state's largest electric utility, completed a project called the "Metro Emissions Reduction Project". The project repowered a 520 megawatt (MW) coal-fired power plant, lowering its heat rate by 5 percent. The project also retired 642 MW of coal-fired generation, replacing it with 956 MW of intermediate load natural gas combined cycle generation. This emission reduction statute encouraged early action by Minnesota's utilities to seek multi-pollutant emission reductions that also resulted in reduced reliance upon coal-fired generation and reductions in GHG emissions.

In 2007, the Next Generation Energy Act established Minnesota's Renewable Energy Standards (RES) that mandates that electric utilities generate or procure a specified level of energy from renewable sources. The RES contains targets for 2012, 2016, 2020 and an ultimate target of 25 percent renewable energy generation by 2025. Xcel Energy received a separate RES schedule with an ultimate target of 30 percent renewable energy generation by 2025. Minnesota now has about 2,800 MW of renewable energy installed, and based on the utilities long-range resource plans, is on track to meet this renewable generation requirement by 2025.

## **Adaptation**

Since July 2009, Minnesota state agencies have been collaborating on climate adaptation efforts through the Interagency Climate Adaptation Team (ICAT). ICAT includes representatives from approximately 10 state agencies. These reports describe observed and projected climate impacts in Minnesota, outline Minnesota state agency activities to adapt to climate change, and identify opportunities for future action and interagency collaboration.

Notable agency adaptation activities include a climate vulnerability assessment pilot project by the Minnesota Department of Transportation focusing on two of the state's most flood prone areas; preparation of a comprehensive Minnesota Climate Change Vulnerability Assessment and Minnesota Climate and Health Profile by the Minnesota Department of Health; development of a climate change strategy by the Minnesota Pollution Control Agency; and integration of climate change considerations into the State Hazardous Mitigation Plan by the Minnesota Department of Public Safety. In addition, the State of Minnesota has funded a number of local climate adaptation projects in communities statewide which are supporting implementation of adaptation practices, planning, public outreach and education.

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