



**Minnesota**

**Department of Natural Resources**

# **Five Year Plan for Sustainable Fleet, Facilities and Purchasing Operations**

September 1, 2011

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## Commissioner's Message

The Minnesota Department of Natural Resources is pursuing a comprehensive approach to energy and climate change. Adaptation strategies will boost the capacity of natural and working lands to produce goods and services in the face of unavoidable climate change. Sequestration strategies will include tracking carbon storage and absorption in forests, grasslands and wetlands. Climate change mitigation strategies will reduce emissions of greenhouse gases including conservation-based energy sources on public lands and using more renewable and all energy more efficiently in our fleet and facilities.

Minnesota has set aggressive goals for securing a more sustainable future that incorporates greater use of clean energy and reduces the state's greenhouse gas emissions, including the goals of reducing greenhouse gas emissions by 80% by 2050 and the goal of having 25% of our energy come from renewable energy resources by the year 2025.

DNR will lead by example in adopting renewable fuel practices that further national fuel diversity and long-term energy, security, environmental, and economic goals. DNR will provide a model for business and private citizens in promoting practices and policies that increase efficiencies and enhance environmental and health protection and job creation.

Responsibility and accountability are essential to making the DNR more sustainable. The decisions we each make every day will affect the sustainability of our air, forests, grasslands, waters, parks and trails. We ask every DNR employee to take responsibility for their own sustainable behaviors and we should hold each other accountable for accomplishing the goals and objectives set out in this plan. Together we can help provide future generations with the environmental, economic and social resources that meet their needs and enhance their quality of life.

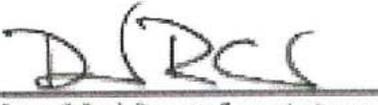
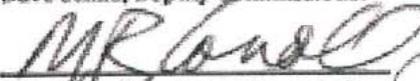
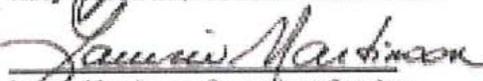
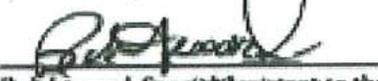
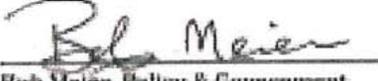
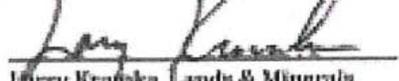
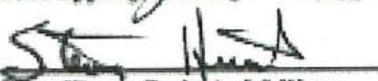
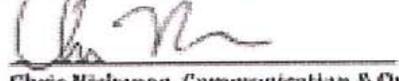
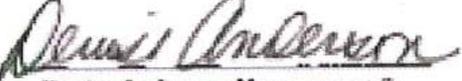
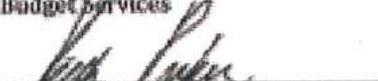
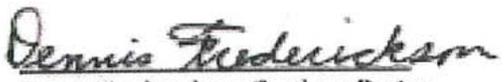
I support this plan, and ask you to join me in launching its implementation and ongoing measurement.



Tom Landwehr  
DNR Commissioner

### Sustainability Commitment

We have committed to the implementation of the DNR Five Year Plan for Sustainability.

 Tom Landwehr, Commissioner	 Dave Schad, Deputy Commissioner	 Mary McConnell, Assistant Commissioner
 Erika Rivers, Assistant Commissioner	 Mike Carroll, Assistant Commissioner	 Laurie Martinson, Operations Services
 Bob Lessard, Special Assistant to the Commissioner	 Bob Meier, Policy & Government Relations	 Larry Krahnke, Lands & Minerals
 Dave Epperly, Forestry	 Courtland Nelson, Parks & Trails	 Jim Conrad, Enforcement
 Steve Hirsch, Ecological & Water Resources	 Ed Duggess, Fish & Wildlife	 Chris Niskanen, Communication & Outreach
 Kent Lokkesmoe, Management Resources	 Denise Anderson, Management & Budget Services	 Denise Legato, Human Resources
 Robert Maki, Office of Information Technology	 Keith Parker, Central Region	 Craig Engwall, Northeast Region
 Lori Dowling, Northwest Region	 Dennis Frederickson, Southern Region	

## Introduction

Concerns about energy security, fuel prices, and climate change have led to new national and state standards for energy efficiency and increased interest in renewable energy sources. State and federal policies support renewable energy development through incentives and mandates to enhance energy price stability and security and reduce the addition of greenhouse gases to the atmosphere. For example, in 2007 Minnesota passed the *Next Generation Energy Act* requiring the state to:

- generate 25 percent of power from utilities using renewable sources by 2025
- reduce statewide greenhouse gas emissions from 2005 base levels by 15 percent by 2015 and 80 percent by 2050
- achieve annual energy savings equal to 1.5 percent of annual retail energy sales of electricity and natural gas.

On April 8, 2011 Governor Dayton issued two new Executive Orders related to energy and environmental sustainability. Executive Order 11-12 calls for all state agencies to:

- reduce facilities energy usage by 20% from 2010 to 2015
- establish site-specific goals by September 1, 2011 for reducing facilities energy use through energy efficiency improvements and renewable energy installations
- assess the potential for entering Guaranteed Energy Savings Contracts through Energy Service Companies.

Executive Order 11-13 consolidates several past executive orders addressing a range of sustainability issues. It reaffirms past commitment to environmental performance in state operations. EO 11-13 most importantly ties these efforts together under a direction to develop a Sustainability Plan by June 30, 2011 to modify practices regarding resource consumption, vehicle usage, purchase of goods and services, and facility construction, operation and maintenance.

The Department of Natural Resources is in a unique position to demonstrate the environmental benefits of energy conservation and sustainability. This 2011 Sustainability Plan meets or exceeds the requirements of Executive Order 11-12 and 11-13, guiding DNR practices regarding resource consumption, vehicle usage, purchase of goods and services, and facility construction, operation and maintenance. Implementation of this plan supports DNR's comprehensive approach to better understand, mitigate and adapt to climate change and energy use challenges as described in the DNR report *Climate Change and Renewable Energy: Management Foundations* (2011). This climate change foundations report provides a broad overview of natural resource-related mitigation and adaptation strategies as well as the energy conservation strategies that are provided in greater detail in this document.

The work of creating and implementing a Sustainability Plan reinforces the DNR mission to conserve and manage the state's natural resources in a way that creates a sustainable quality of life. Implementing this plan will reduce DNR's annual energy

spending and allow us to lead by example in mitigating climate change and enhancing the sustainability of our buildings and operations.

This plan focuses on achieving three main goals:

- 1. Reduce DNR total energy use by 20% from 2010 to 2015.**
  - a. 20% target from Executive Order 11-12 and MN Statute 16C.137
  - b. Reduce facility energy use by 4% per year through energy efficiency initiatives in new and existing buildings.
  - c. Reduce fleet energy use by 4% per year through behavioral changes and more fuel efficient vehicles.
- 2. Reduce DNR greenhouse gas (GHG) emissions 25% from 2010 to 2015 to mitigate climate change.**
  - a. 25% goal based on DNR commitment to lead by example and mitigate climate change
  - b. Derive 8% of the total energy used by DNR facilities from on-site renewable energy systems by the year 2015.
  - c. Reduce fleet GHG emissions through use of biofuels and electric/alternative fuel vehicles.
- 3. Conserve natural resources through environmentally friendly purchasing, waste reduction, water conservation, and recycling.**
  - a. Based on Executive Order 11-13 obligation to strengthen State Agency sustainability

Six key strategies will drive the execution of the plan:

- 1. Achieve building energy performance standards defined by the State's Sustainable Buildings 2030 program.** Integrate renewable energy systems and sustainable site design to optimize energy usage, carbon emissions and life cycle costs.
- 2. Improve the energy efficiency of the Top 50 energy usage buildings.** Track energy use per square foot and reduce monthly energy consumption at least 10% following implementation of significant building energy audit recommendations.

3. **Improve the environmental sustainability of all DNR buildings and sites, striving for “net-zero” energy consumption and significantly reduced fresh water usage.** Enable and encourage locally-developed Site Sustainability Plans and actions by DNR employees that will reduce carbon emissions, energy costs, solid waste and fresh water consumption.
4. **Broadly implement on-site renewable energy systems at DNR locations.** Ultimately every Top 100 DNR site (e.g. Itasca State Park, Soudan Mine State Park) will have some form of on-site renewable energy system installed.
5. **Increase fleet fuel efficiency through technology improvements and behavioral changes.** Increase fleet MPG by increasing use of fuel efficient vehicles and enrolling all DNR drivers in Eco-Drive training. Reduce miles driven by investing in tools for trip planning, vehicle sharing and desktop conferencing. Reduce fleet GHG emissions through use of biofuels and electric/alternative fuel vehicles. Utilize Green Star-certified repair shops to improve the environmental sustainability of maintenance operations.
6. **Expand sustainable purchasing efforts by encouraging a broader set of purchasing considerations;** including purchase cost, renewability, recycle-ability and total lifecycle costs. Increase recovery of recyclable materials for repurposing or reuse through auctions, surplus services or cannibalization. Reduce the type and amount of toxic products used.

Implementation of this plan will be guided by DNR’s Climate and Renewable Energy Steering Team (CREST) established by Senior Managers and Operations Managers in 2010 to provide agency-wide coordination on climate change and renewable energy strategies. CREST will charge an Implementation Team and monitor their work in implementing this Sustainability Plan. DNR staff will also actively participate on Interagency Teams to share best practices and help shape policy.

## DNR Energy Profile

The Minnesota DNR manages a large portfolio of buildings, equipment, and energy transactions:

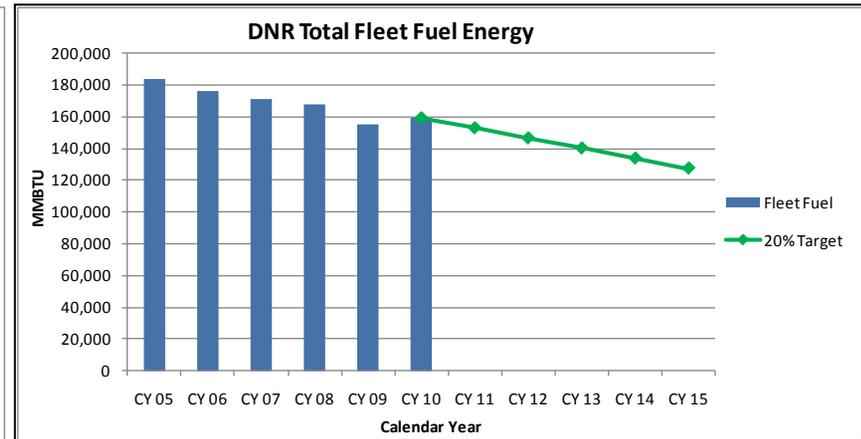
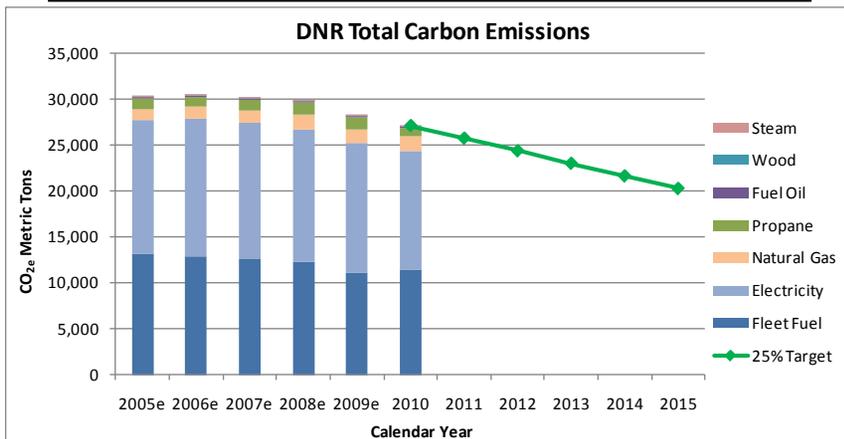
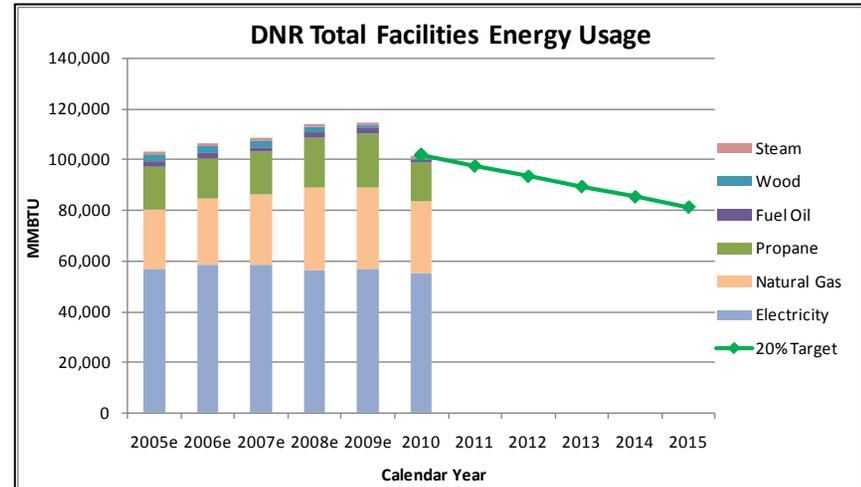
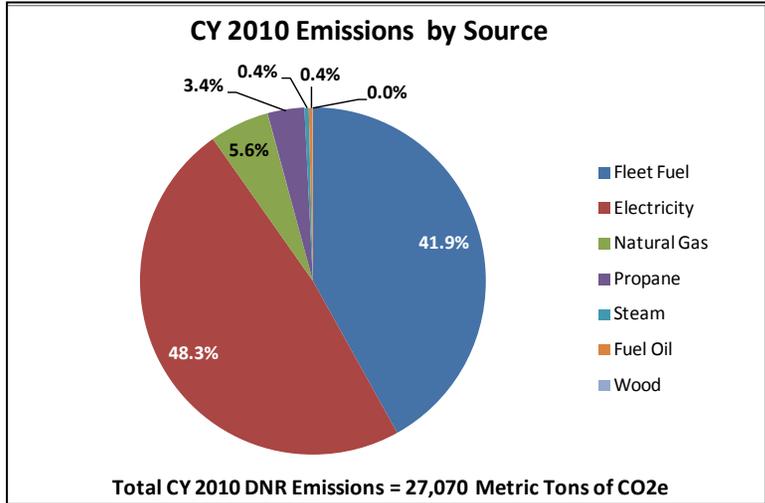
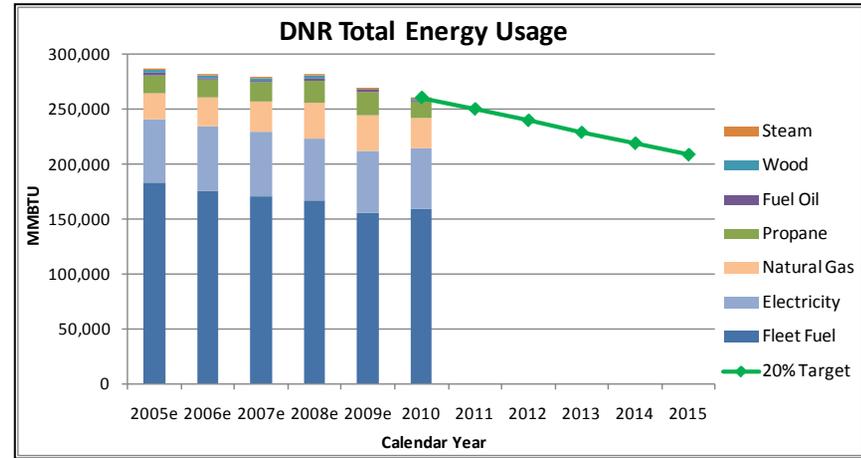
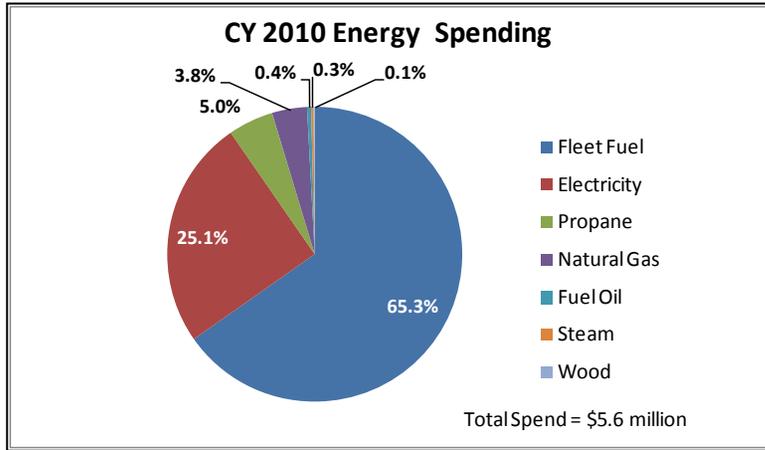
- Over 3.5 million square feet of space in 2,800 buildings ranging in size from 120,000 sq ft to 12 sq ft.
- Over 2,600 vehicles and thousands of other fuel consuming devices like outboard motors, chainsaws, generators, etc.
- Hundreds of points of energy consumption not associated with buildings like remote security lights and dike pumps.
- Over 67,000 fleet fuel card transactions and 12,000 utility energy bills per year.

DNR has made a major commitment to accurately measuring, managing and reporting its energy consumption. In 2009 DNR joined The Climate Registry and began to publicly report its greenhouse gas emissions. The Climate Registry establishes consistent, transparent standards throughout North America for businesses and governments to calculate, verify and publicly report their carbon footprints in a single, unified registry. In 2010 DNR completed a two-year project to select and implement an online database and reporting system for energy usage and greenhouse gas reporting. The result was the “Minnesota B3 Energy Benchmarking System” that allows facility managers to track their energy consumption and compare it to similar buildings in the DNR. The B3 System is fed by energy invoice scans sent from Regional Business Offices to a data entry outsourcing company in northern Minnesota. DNR’s 2010 submission to The Climate Registry will come from reports generated by the B3 System.

The charts on the following page show DNR’s energy use since 2005. Total energy spending in CY 2010 was \$5.6 million, with two thirds of that being spent on fleet fuel. While electricity is 25% of spending it accounts for about 50% of DNR’s carbon emissions due to the coal fired generating plants that supply most of Minnesota’s electricity. Total carbon emissions have been falling since 2008 and should continue to fall if the DNR can reduce its appetite for energy. The DNR’s total energy usage has been falling since 2008 and will have to decrease about 4% per year through 2015 to hit our Executive Order 11-12 targets. This will be the most challenging target to hit and will require moving all the levers available to the DNR:

- Reductions in fleet fuel consumption from higher mileage/alternative fuel vehicles and technology improvements
- Energy efficiency improvements in existing buildings
- Highly energy efficient new buildings that approach net-zero energy consumption
- Installation of 125 KW of on-site renewable energy generation each year
- Site Sustainability Teams that provide increased awareness and focus on energy efficient behaviors.

# DNR Energy and Sustainability Plan



Strategy 1	Objective	Metric	Action
<p><b>Achieve building energy performance standards per Sustainable Buildings 2030.</b></p>	<p>Aggressively achieve energy performance standards per Minnesota Sustainable Building 2030</p> <p>Integrate renewable energy systems into new DNR building and site designs</p> <p>Ensure environmental sustainability of new DNR building and site designs per State guidelines</p>	<p>Energy Standard - Total energy use (kBtu per square foot per year) in new and substantially renovated buildings</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Decrease energy use by 2% per year between 2010 and 2030</li> <li>• <u>Target</u>: 100% of new buildings will meet or exceed predicted and benchmarked energy consumption</li> </ul> <p>Carbon Footprint - Total GHG emissions (lbs per square foot per year) in new and substantially renovated buildings</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Decrease GHG emissions by 2% per year between 2010 and 2030</li> </ul> <p>Cost - Total energy costs (\$ per square foot per year) in new and substantially renovated buildings versus existing stock of similar buildings</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Increase average cost performance differential between new and similar existing DNR buildings to 50% by 2015.</li> </ul>	<p>Require design professionals to incorporate energy standards in all new designs and major retrofits such that maximum energy performance can be reached</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Peter Paulson, Principal Architect</li> <li>• <u>Measurement and Accountability</u>: Key Metric Report for new/substantially renovated buildings issued in July and January showing original projections and actual energy use per square foot over the last six months</li> <li>• <u>Key Resource Requirements</u>: \$20,000 for analytic tools and training for Architecture Team</li> </ul>

**Background and Context**

Sustainable Buildings 2030 ( 216B.241 Subdivision 9) is a progressive energy conservation program required on all Minnesota State bonded projects to significantly reduce the energy and carbon in Minnesota commercial, institutional and industrial buildings. Beginning on July 1, 2010 all Minnesota State bonded projects — new and substantially renovated — that have not already started the Schematic Design Phase on August 1, 2009 will be required to meet the Minnesota Sustainable Building 2030 (SB 2030) energy standards.

Strategy 2	Objective	Metric	Action
<p><b>Improve energy efficiency of Top 50 energy usage buildings</b></p>	<p>Reduce monthly energy consumption</p>	<p>Total energy use per square foot in targeted “energy intense” buildings</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: One time 10% reduction in first 12 months following implementation<sup>1</sup></li> </ul>	<p>Conduct building energy audits at Top 50 energy usage buildings and implement high-payback recommendations. Seek assistance and funding through energy savings contracts or Minnesota’s Public Building Enhanced Energy Efficiency Program (PBEEEEP) for high-payback energy efficiency improvements.</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Rob Bergh, Energy Coordinator</li> <li>• <u>Measurement and Accountability</u>: Key Metric Report issued in July and January showing progress to date and projection for next six months</li> <li>• <u>Key Resource Requirements</u>: \$50,000 per year in funding for energy audits and project definition, with majority of implementation to be funded via energy savings contracts.</li> </ul>

**Background and Context**

In general, Guaranteed Energy Savings Contracts are contracts for the evaluation, recommendation or implementation of energy conservation measures. Building owners make payments over time and their energy savings are guaranteed to exceed costs. The State Of Minnesota PBEEEEP is a program offered through the Department Of Administration, Real Estate & Construction Services. PBEEEEP addresses energy efficiency in public buildings across Minnesota through a targeted recommissioning and retrofit focus. Energy affecting and energy consuming equipment, systems, and operations practices are evaluated to identify energy conservation opportunities that result in cost savings for the project site. Projects participating in PBEEEEP follow a 4-phase project process: screening, investigation, implementation, and verification. A key component of PBEEEEP is that the program provides State Agencies the opportunity to utilize co-funding through a combination of stimulus funding and lease-purchase financing without the need to have budgeted for this work in advance.

Note 1: DNR proposed improvement target

Strategy 3	Objective	Metric	Action
<p><b>Improve environmental sustainability of all DNR buildings and sites</b></p>	<p>Enable and encourage locally-developed Site Sustainability Plans and actions by DNR employees that will reduce carbon emissions, energy costs, solid waste and fresh water consumption</p>	<p>Total energy use in buildings</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Each year reduce annual building energy consumption by 4%<sup>2</sup></li> </ul> <p>Total GHG emissions per site</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Each year reduce site GHG emissions 5%<sup>1</sup></li> </ul> <p>Waste reduction</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Reduce site waste disposed 60% below 2005 base levels by 6/30/2014<sup>2</sup></li> <li>• <u>Target</u>: 100% compliance with county solid waste management plans<sup>2</sup></li> </ul>	<p>Develop local infrastructure (e.g. Site Sustainability Captains, Consolidated Site Energy Report, intranet site), and training to enable site-led sustainability efforts</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Rob Bergh, Energy Coordinator</li> <li>• <u>Measurement and Accountability</u>: Role descriptions, energy reports and training complete by July 1, 2011</li> <li>• <u>Key Resource Requirements</u>: \$15,000 for development of role descriptions, training materials and intranet site</li> </ul> <p>Drive organizational adoption, engagement and learning through communications, intranet content, recognition, sharing of best practices, etc.</p> <ul style="list-style-type: none"> <li>• <u>Sponsors</u>: Regional Directors</li> <li>• <u>Leads</u>: Regional MR Managers</li> <li>• <u>Measurement and Accountability</u>: Regional Progress reports in June and January</li> <li>• <u>Key Resource Requirements</u>: \$25,000 per Region for small project funding and recognition</li> </ul>

**Background and Context**

Examples of local efforts could include:

- an Energy Team at a Regional Office identifying and implementing many small behavioral changes to reduce energy use
- a Central Office Information Systems Energy Team working to reduce data center energy use
- a Site Energy Team at a State Park working to reduce energy use by both Park staff and visitors

Note 1: DNR proposed improvement target

Note 2: Executive Order 11-12, 11-13

Strategy 4	Objective	Metric	Action
<p><b>Broadly implement renewable energy technology at DNR sites</b></p>	<p>Ultimately every Top 100 DNR site (e.g. Itasca SP, Soudan Mine SP) will have some form of on-site renewable energy system installed</p>	<p>Total facilities MMBTU from renewable energy generation</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: 8% renewable energy by 2015<sup>1</sup></li> </ul> <p>Percent of Top 100 sites (which total 95% of DNR GHG emissions) having some form of renewable energy</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: 35% of Top 100 sites by 2012<sup>1</sup> and 75% of Top 100 sites by 2015<sup>1</sup></li> </ul>	<p>Install 125 KW of Photovoltaic/Wind energy capacity annually through CY 2015.</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Rob Bergh, Energy Coordinator</li> <li>• <u>Measurement and Accountability</u>: Key Metric Report issued in July and January showing progress to date and projection for next six months</li> <li>• <u>Key Resource Requirements</u>: Capital budget request</li> </ul>

**Background and Context**

- In February 2007, Minnesota adopted a renewable portfolio standard that requires one-fourth of Minnesota’s power to come from renewable sources by 2025. The mandate also requires Xcel Energy, the provider of about one-half of the State’s electricity, to have one-third of its total power come from renewable sources by 2020.
- Minnesota has more annual solar energy potential than Houston, Texas and nearly as much as Miami, Florida.
- Four states – South Dakota, Iowa, North Dakota and Minnesota – now get over 10% of their electricity needs from wind. South Dakota ranks first in this list (23.2%), followed by Iowa (16.9%), North Dakota (13.5%) and Minnesota (12.3%).
- The site selection process for DNR renewable energy systems includes consideration of multiple factors including building energy usage, solar access, interpretive opportunities, viewscape impacts, cultural heritage considerations, etc.

Note 1: DNR proposed improvement target

Strategy 5	Objective	Metric	Action
<p><b>Increase fleet fuel efficiency through technology improvements and behavioral changes</b></p>	<p>Reduce fleet energy use 20% below 2010 base levels by 2015<sup>3</sup></p> <p>Utilize Green Star-certified repair shops</p>	<p>Fleet energy use, measured in MMBTU</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: reduce 20% below 2010 base levels by end of 2015<sup>3</sup></li> </ul> <p>Fuel-efficient equipment use</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: increase use of fuel efficient vehicles to 35% by end of 2011 and 45% by end of 2015<sup>1</sup></li> </ul> <p>Use of Green Star-certified repair shops</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: increase use to 25% by end of 2015<sup>1</sup></li> </ul>	<p>Invest in technology for trip planning and vehicle sharing</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Dave Schiller, Fleet, Safety &amp; Materials Manager</li> <li>• <u>Measurement and Accountability</u>: Pilot complete by December 31, 2011</li> </ul> <p>Invest in technology to expand use of desktop videoconferencing</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Robert Maki, CIO</li> <li>• <u>Measurement and Accountability</u>: Pilot complete by June 31, 2012</li> <li>• <u>Key Resource Requirements</u>: Desktop Videoconferencing solution</li> </ul> <p>Enroll all DNR drivers in Eco-Drive training</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Dave Schiller, Fleet, Safety &amp; Materials Manager</li> <li>• <u>Measurement and Accountability</u>: All new DNR drivers trained within 90 days of starting work.</li> </ul> <p>Include fleet fuel usage in Consolidated Site Energy Report</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Dave Schiller, Fleet, Safety &amp; Materials Manager</li> <li>• <u>Measurement and Accountability</u>: Complete by July 1, 2011</li> <li>• <u>Key Resource Requirements</u>: staff time to accomplish</li> </ul> <p>Increase use of Green Star-certified repair shops</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Dave Schiller, Fleet, Safety &amp; Materials Manager</li> <li>• <u>Measurement and Accountability</u>: DNR repair shops Green Star-certified by July 1, 2011. Key Metric Report issued in July and January showing progress to date and projection for next six months. DNR to orient to using only Green Star-certified shops by July 1, 2012.</li> </ul>

Note 1: DNR proposed improvement target

Note 3: Derived from MN Statute 16C.137

Strategy 6	Objective	Metric	Action
<p><b>Expand sustainable purchasing efforts</b></p>	<p>Encourage a broader set of purchasing considerations including purchase cost, renewability, recycle-ability and total lifecycle costs</p> <p>Increase recovery of recyclable materials for repurposing or reuse through auctions, surplus services or internal reuse</p> <p>Reduce the type and amount of toxic products used</p>	<p>Number of sustainable product choices</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Materials Management website promotes alternatives with explanations of quality, quantity, value and relationship to the DNR Conservation Agenda</li> </ul> <p>Percentage of purchasing categories with green purchasing requirements</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: 25% of purchasing categories have green purchasing requirements by end of CY11 and 50% by end of CY15<sup>1</sup></li> </ul> <p>Amount of toxic products used in fleet maintenance, laboratories, building and grounds maintenance and operations</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: 10% reduction over the next five years, based on the average of the preceding five years<sup>2</sup></li> </ul> <p>Volume of fixed assets recycled, reused, resold</p> <ul style="list-style-type: none"> <li>• <u>Target</u>: Increased at HQ by 50% by end of CY15. Increased at Regions by 25% by end of CY15<sup>1</sup></li> </ul>	<p>MM will increase the number of available sustainable product options and market them based on their sustainability profile.</p> <p>Train buyers on green purchasing and DNR’s sustainable purchasing policy and guidelines.</p> <p>Broaden number of categories evaluated on life-cycle environmental impacts.</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Dave Schiller; Fleet, Safety &amp; Materials Manager</li> <li>• <u>Measurement and Accountability</u>: Key Metric Report issued in July and January showing progress to date and projection for next six months</li> <li>• <u>Key Resource Requirements</u>: tbd</li> </ul> <p>Notify staff on days with high-risk air pollution so they can reduce their impact on air pollution.</p> <ul style="list-style-type: none"> <li>• <u>Lead</u>: Ron Winkel; Central Office Building Manager</li> </ul> <p>Encourage employees to consider alternatives to single-occupancy vehicle commuting on or about May 1 and October 1 of each year.</p>

Note 1: MR proposed improvement targets  
 Note 2: Executive Order 11-12, 11-13

## Appendix A. DNR Climate Change Approach and Management Foundations



In 2010, DNR Senior Managers and Operations Managers established the Climate Change and Renewable Energy Steering Team (CREST) to provide agency-wide coordination on climate change and energy strategies. CREST developed a decision framework to help guide and improve climate-change and renewable energy decisions over time. The framework (above) uses an adaptive approach that integrates assessments, planning and decision support, management response, and monitoring. The goal is effective **Management Responses** that help address climate change and energy challenges in ways that maintain or restore resilient ecosystems and/or encourage a transition to renewable energy. **Assessments** provide the necessary information to set priorities for management actions. **Planning and Decision Support** helps staff make day-to-day and long-term decisions on management actions, monitoring activities, and assessment activities. **Monitoring** tracks trends in climate and energy use, climate impacts on natural resources, and effectiveness of management actions aimed at addressing those impacts. Results from monitoring feed back into future assessments and management decisions so course corrections can be made if conditions change or if management actions are not effective.

## Appendix B. Summary of Minnesota Next Generation Energy Act of 2007

This law passed by the Minnesota Legislature in aims to bolster investments in renewable power, increase energy conservation and decrease Minnesota's contribution to global warming. Among its provisions, it established two overall energy policy goals for the state of Minnesota that:

- (1) the per capita use of fossil fuel as an energy input be reduced by 15 percent by the year 2015, through increased reliance on energy efficiency and renewable energy alternatives; and
- (2) 25 percent of the total energy used in the state be derived from renewable energy resources by the year 2025.

It set an energy conservation goal that it is the energy policy of the state of Minnesota to achieve annual energy savings equal to 1.5 percent of annual retail energy sales of electricity and natural gas.

It also sets a global warming mitigation target of cutting the state's greenhouse gas emissions to 15 percent below 2005 base levels by 2015, 30 percent by 2025 and 80 percent by 2050.

The law requires several state agencies and a wide array of stakeholders to work together to come up with a "climate change action plan" that will identify and evaluate a broad range of greenhouse gas reduction strategies, assess the potential costs and benefits of the various options, including the potential cost to consumers, and recommend a course of action to the Legislature by Feb. 1, 2008.

The plan must also make recommendations on a proposed cap-and-trade system, whereby a cap would be placed on overall greenhouse gas emissions and power companies assigned "allowances" of emissions that they could trade with one another. In addition, the law prohibits the construction of any power plants that would produce a net increase in carbon emissions after Aug. 1, 2009. The law states that unless "a comprehensive state law or rule ... that directly limits and substantially reduces greenhouse gas emissions" is enacted and is in effect by that date:

- no large fossil fuel-fired power plant can be built in Minnesota;
- no utility can import electricity from a large fossil fuel-fired power plant built in another state that was not operating on Jan. 1, 2007; and
- no Minnesota utility can purchase electricity from an outstate utility under a contract that exceeds 50 megawatts for a term of five years.

Exceptions for this prohibition include facilities that offset any CO<sub>2</sub> emissions they emit; a new Iron Range steel or iron nugget production facility; and the Mesaba and Big Stone II plants.

The conservation portion of the law aims to save Minnesotans money while reducing the environmental impacts of energy consumption. The law contains a five-part conservation and efficiency strategy:

- establishing a statewide energy conservation goal of 1.5 percent of annual retail electric and gas sales;

## DNR Sustainability Plan

- expanding and improving the state's conservation improvement program;
- providing research and development and technical assistance to utility companies through the Department of Commerce;
- increasing energy efficiency in state buildings; and
- removing financial disincentives for utility companies to promote energy conservation by "decoupling" a utility's revenue from its changes in energy sales.

The law also overhauls the state's Community-Based Energy Development statutes by making a number of changes, including:

- expanding the types of projects that qualify for the program from wind only to include all renewable energy technologies, effective July 1, 2007;
- increasing the financial benefits for communities that invest in renewable power by stipulating that at least 51 percent of the gross revenues from any power purchase agreement flow to owners and qualifying local entities;
- encouraging utilities to make use of C-BED projects in meeting the state's renewable energy standard; and
- removing a 2.7 cents per kilowatt hour cap on the price utilities pay for energy from C-BED projects.

Other changes made include a statewide study of dispersed generation potential, a study of wind development property agreements and the establishment of a C-BED Advisory Task Force to be appointed by the Legislative Electric Energy Task Force. These provisions are all effective May 26, 2007.

### Appendix C. Summary of Executive Order 11-12 and 11-13

**Executive Order 11-12:** Providing for Job Creation through Energy Efficiency and Renewable Energy Programs for Minnesota’s Public Buildings

Obligation	Tasks	Status
<b>20% Reduction in Energy Use</b>	Maintain energy consumption data	CY 10 data is complete CY 11 data is current through February
	Establish goals for reducing energy usage in state-owned buildings	Agency goal of 10% reduction is facility costs is a part of reducing energy use. Goals more specific to energy will be required
	Establish site specific energy savings goals	Site score cards are proposed in the draft sustainability plan required in EO 11-13
	Implement best management practices regarding “Guaranteed Energy Saving Contracts.”	
	During design assess applications for renewable energy generation equipment for buildings	This is now a standard practice
	Assess automation of building monitoring and management	

**Executive Order 11-13:** Strengthening State Agency Environmental, Energy and Transportation Sustainability

Obligation	Tasks	Status
<b>Sustainability Goals</b>	Cooperate and participate with interagency teams to plan to meet assigned objectives	
<b>Sustainability Plan</b>	Prepare an annual sustainability plan	Draft plan has been developed in the context of the DNR Strategic Conservation Agenda, Part I, Climate, Renewable Energy and Energy Efficiency. The plan is currently under review.
<b>Cooperate and Participate on Specific Teams</b>	Interagency Pollution Prevention Advisory Team	DNR is a participant (Ron Winkel & Rob Bergh)
	Smart Fleet Team	DNR is a participant (Dave Schiller)
	Enterprise Real Property Governance Team	DNR is a participant (Kath Ouska)
	Procurement Coordinators Team	DNR is a Participant (Mary Golike)

## Appendix D. Summary of Minnesota Statute 16C.137

Using 2005 as a baseline, the state of Minnesota shall reduce the use of gasoline by on-road vehicles owned by state departments by 25 percent by 2010 and by 50 percent by 2015, and the use of petroleum-based diesel fuel in diesel-fueled vehicles by ten percent by 2010 and 25 percent by 2015. Each state department must, whenever legally, technically, and economically feasible, subject to the specific needs of the department and responsible management of agency finances:

1. ensure that all new on-road vehicles purchased, excluding emergency and law enforcement vehicles:
  - use "cleaner fuels"
  - have fuel efficiency ratings that exceed 30 miles per gallon for city usage or 35 miles per gallon for highway usage, or
  - are powered solely by electricity;
2. increase use of renewable fuels, including ethanol, biodiesel, and hydrogen from agricultural products; and
3. increase its use of Web-based Internet applications and other electronic information technologies to enhance the access to and delivery of government information and services to the public, and reduce the reliance on the department's fleet for the delivery of such information and services.

### SmartFleet Committee.

The commissioner of administration, or the commissioner's designee, shall chair a SmartFleet Committee consisting of representatives designated by the commissioners of the Pollution Control Agency, the Departments of Agriculture and Commerce, and other state departments that wish to participate. To ensure effective and efficient state participation, the SmartFleet Committee must assist state departments in implementing the requirements of this section, including providing information, guidance, sample policies and procedures, and technical and planning assistance.

## DNR Top 100 Sites - Total Energy Usage in CY 2010

Rank	Organization Name	\$ in 2010	Facility		
			MMBTU	Fleet	Total
			MMBTU	MMBTU	MMBTU
1	R0 St. Paul HQ	\$ 22,002	10,845	6,446	17,291
2	R2 R2 HQ Grand Rapids	\$ 72,082	6,457	8,380	14,837
3	R3 R3 HQ St. Paul	\$ 63,886	4,060	9,781	13,841
4	R2 Brainerd	\$ 61,444	4,006	3,957	7,963
5	R1 R1 HQ Bemidji	\$ 24,222	1,355	5,576	6,931
6	R1 Itasca State Park	\$ 117,582	3,866	2,646	6,512
7	R2 Soudan Underground Mine State Park	\$ 110,444	5,457	240	5,696
8	R1 Fergus Falls	\$ 33,606	2,112	2,137	4,249
9	R1 Warroad	\$ 27,105	2,005	1,334	3,339
10	R2 Two Harbors	\$ 15,228	741	2,484	3,225
11	R4 R4 HQ New Ulm	\$ 13,306	515	2,696	3,211
12	R2 Tower	\$ 20,446	847	2,012	2,860
13	R1 Detroit Lakes	\$ 17,382	832	2,018	2,850
14	R2 Hibbing Minerals	\$ 40,705	1,846	859	2,705
15	R3 Rochester	\$ 24,521	794	1,868	2,663
16	R4 Lac Qui Parle WMA	\$ 13,589	463	2,151	2,614
17	R3 Fort Snelling State Park	\$ 32,741	2,010	586	2,596
18	R2 Minnesota Interagency Fire Center	\$ 33,603	1,112	1,263	2,376
19	R4 Windom	\$ 11,895	875	1,426	2,301
20	R2 St. Croix State Park	\$ 33,607	1,001	1,146	2,147
21	R2 General Andrews State Forest	\$ 31,840	1,463	664	2,128
22	R1 Glenwood	\$ 10,336	719	1,335	2,055
23	R1 Bemidji Area Forestry	\$ 4,856	327	1,727	2,054
24	R3 Carlos Avery WMA	\$ 16,476	785	1,261	2,047
25	R3 William O'Brien State Park	\$ 19,196	1,108	741	1,849
26	R2 Aitkin	\$ 9,402	601	1,175	1,776
27	R3 Whitewater State Park	\$ 33,116	1,335	439	1,775
28	R3 Cambridge	\$ 10,385	598	1,084	1,682
29	R2 Moose Lake	\$ 3,395	261	1,375	1,636
30	R3 Little Falls	\$ 52	-	1,515	1,515
31	R3 Lake City	\$ 7,396	387	1,077	1,465
32	R2 Tettegouche State Park	\$ 18,083	614	816	1,430
33	R1 Bemidji Area Wildlife Research	\$ 3,534	220	1,200	1,420
34	R1 Bemidji Area Fish & Wildlife	\$ 3,236	182	1,200	1,382
35	R4 Hutchinson	\$ 13,099	559	804	1,363
36	R3 Wild River State Park	\$ 18,931	732	594	1,326
37	R3 Sauk Rapids	\$ 225	4	1,295	1,299
38	R4 Sibley State Park	\$ 26,321	798	465	1,263
39	R4 Sakatah Lake State Park	\$ 7,297	293	945	1,238
40	R1 Thief River Falls	\$ 8,554	602	578	1,181
41	R4 Waterville	\$ 13,124	585	572	1,157
42	R2 Duluth French River	\$ 28,868	1,092	46	1,138
43	R1 Badoura State Forest	\$ 16,496	518	579	1,097
44	R3 Forestville-Mystery Cave State Park	\$ 21,276	731	354	1,085
45	R1 Lake Bronson State Park	\$ 19,161	665	416	1,082
46	R4 New London Hatchery	\$ 6,971	463	592	1,055
47	R4 Spicer	\$ 5,583	274	766	1,041
48	R2 Cloquet	\$ 4,895	320	684	1,004
49	R2 Gooseberry Falls State Park	\$ 25,144	938	42	980
50	R1 Lake Carlos State Park	\$ 22,702	851	126	977

Green = On-Site Renewable Energy Installed

Yellow = On-Site Renewable Energy Planned

Rank	Organization Name	\$ in 2010	Facility		
			MMBTU	Fleet	Total
			MMBTU	MMBTU	MMBTU
51	R2 Orr	\$ 6,075	235	725	960
52	R2 Chisolm-Hibbing	\$ 11,244	957		957
53	R1 Backus	\$ 4,227	196	752	948
54	R2 International Falls	\$ 3,809	236	712	948
55	R4 Rice Lake State Park	\$ 7,622	263	661	924
56	R2 Eveleth	\$ 7,569	282	635	918
57	R4 Flandrau State Park	\$ 20,781	722	176	898
58	R4 Madelia WMA	\$ 8,072	395	499	894
59	R3 Whitewater WMA	\$ 3,630	140	748	888
60	R2 Duluth Area	\$ 2,372	84	788	872
61	R4 Ortonville	\$ 4,205	334	537	871
62	R2 Grand Marais	\$ 2,678	100	747	846
63	R3 Mille Lacs Kathio State Park	\$ 12,286	420	415	835
64	R2 Littlefork	\$ 2,530	66	749	816
65	R1 Baudette Forestry	\$ 3,884	170	621	791
66	R1 Thief Lake WMA	\$ 7,739	226	543	768
67	R4 Nicollet	\$ 2,447	123	642	765
68	R1 Williams	\$ 3,771	133	585	718
69	R3 Lanesboro Hatchery	\$ 13,923	595	111	706
70	R4 Elysian	\$ 3,591	147	548	694
71	R4 Myre-Big Island State Park	\$ 12,684	403	267	670
72	R1 Lake Bemidji State Park	\$ 15,008	557	95	652
73	R3 Peterson Hatchery	\$ 9,671	457	185	642
74	R2 Deer River	\$ 4,210	232	408	640
75	R4 Nerstrand Big Woods State Park	\$ 8,987	343	295	638
76	R2 Hinckley	\$ 5,317	254	381	635
77	R3 Afton State Park	\$ 7,060	221	406	627
78	R2 Duluth Area Fisheries	\$ 3,462	180	444	623
79	R4 Minneopa State Park	\$ 8,961	317	299	616
80	R1 Baudette Fish & Wildlife	\$ 1,943	111	500	611
81	R4 Talcot Lake WMA	\$ 5,858	220	373	594
82	R3 Zimmerman	\$ 2,575	123	458	581
83	R1 Glendalough State Park	\$ 8,972	337	241	578
84	R3 Mille Lacs WMA	\$ 1,912	58	513	571
85	R2 Savanna Portage State Park	\$ 9,523	353	213	566
86	R2 Hill Annex Mine State Park	\$ 5,687	472	93	564
87	R1 Northome	\$ 1,578	80	481	561
88	R3 Whitewater WMA Crystal Springs	\$ 8,286	391	155	546
89	R2 Jay Cooke State Park	\$ 13,244	494	48	542
90	R4 Blue Mounds State Park	\$ 8,714	292	250	542
91	R2 Finland	\$ 3,375	131	399	531
92	R2 Split Rock Lighthouse State Park	\$ 7,342	246	277	523
93	R3 Lake Maria State Park	\$ 4,459	161	357	518
94	R1 Park Rapids Area	\$ 5,083	293	215	509
95	R1 Beltrami Island State Forest	\$ 11,494	499		499
96	R1 Old Mill State Park	\$ 8,994	328	156	484
97	R3 Father Hennepin State Park	\$ 9,957	303	178	481
98	R1 Glacial Lakes State Park	\$ 7,145	280	201	481
99	R2 Effie	\$ 3,388	120	352	472
100	R1 Buffalo River State Park	\$ 14,802	387	85	472

## Appendix F: Acknowledgements

**This plan was prepared in 2010 and updated in 2011 by:**

### Management Resources

- Rob Bergh (Energy Coordinator)
- Peter Paulson (Supervising Architect)
- Don Jaschke (Fleet Supervisor)
- Mary Golike (Facilities Operations Supervisor)
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