

# MINNESOTA CAN CREATE 7,500 EFFICIENCY-RELATED JOBS, CUT ELECTRICITY BILLS, AND CURB CARBON POLLUTION



*“Earth’s climate is on a path to warm beyond the range of what has been experienced over the past millions of years. By making informed choices now, we can reduce risks for future generations and ourselves, and help communities adapt to climate change. People have responded successfully to other major environmental challenges such as acid rain and the ozone hole with benefits greater than costs, and scientists working with economists believe there are ways to manage the risks of climate change while balancing current and future economic prosperity.”*

—“WHAT WE KNOW,” AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, 2014

That sobering prospect and challenge from leading scientists makes it clear that **Minnesotans and all Americans** have an obligation to address climate change now, chiefly by reducing the carbon pollution fueling changes we’re already seeing. In doing so, we can reap substantial benefits to our economy while protecting future generations. Under the Clean Air Act, the U.S. Environmental Protection Agency is moving now to curb power plant carbon pollution, which makes up 40 percent of our nation’s total carbon footprint.


## MINNESOTA CAN ADDRESS CLIMATE CHANGE, WITH GREAT BENEFIT TO FUTURE GENERATIONS AND OUR ECONOMY

**744,000**  
TONS  
LESS  
POLLUTION



SETTING THE FIRST-EVER NATIONAL CARBON LIMITS...will cut Minnesota’s dangerous carbon pollution by 744,000 tons.<sup>1</sup>

**7,500**  
JOBS



USING SMART STRATEGIES... can put more than 7,500 people to work in efficiency-related jobs in Minnesota.

**\$586**  
MILLION IN SAVINGS FOR HOUSEHOLD AND BUSINESS CUSTOMERS



AND THAT WILL SAVE MINNESOTA HOUSEHOLDS...\$244 million on their electric bills, or \$105 per average household.

All figures for 2020

## WE MUST ACT NOW TO MEET THE ENVIRONMENTAL CHALLENGE OF OUR TIME



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## THE EPA'S PLAN TAKES AIM AT THE HEART OF THE PROBLEM

- Electric power plants are the largest source of the dangerous carbon pollution that is driving climate change and extreme weather.
- In 2011, the nation's 100 largest electric power companies, which account for 86 percent of electricity production and 88 percent of the industry's carbon pollution, released 2.1 billion tons of carbon pollution, according to reporting by the industry.<sup>2</sup>
- In Minnesota, power plants released 35 million tons of carbon pollution in 2011, equal to the annual emissions of 7.3 million cars. That ranks 28th-highest in the nation, according to air emissions tracking from the 100 largest electricity providers.<sup>3</sup>
- Today we limit the amount of arsenic, mercury, and soot these plants emit. But there are no limits on carbon pollution. That is wrong, and it must change.

In response, the president has directed the U.S. Environmental Protection Agency to end the limitless dumping of carbon pollution from these power plants. The EPA has both the authority and the responsibility to reduce carbon pollution under the Clean Air Act, and it should move forward to help protect future generations. The EPA has proposed standards for future power plants and is scheduled to issue the first federal standards for existing power plants in June 2014.

## NRDC'S CARBON POLLUTION SOLUTION: EMPOWER STATES TO CURB CLIMATE CHANGE

In December 2012, the Natural Resources Defense Council unveiled a proposal showing one way for the EPA to significantly cut carbon pollution from the nation's power plants—at low cost and with big benefits.<sup>4</sup> This approach:

- **Allows states to tailor policies to meet the standards**, choosing among such actions as cleaning up existing power plants, shifting power generation to plants with lower emissions or none at all, and improving the efficiency of electricity use.
- **Sets carbon intensity-based emissions standards** for all large fossil-fueled power plants. Each state would have a different target; states relying more on coal would have a higher carbon target than those depending less on coal.
- **Charts a path to affordable and effective emissions reductions** by tapping into the ingenuity of the states and leveraging their existing efforts to reduce pollution and provide more clean energy options. This state-based approach has been used for decades to cut other pollutants.
- **Can be implemented now** using the authority the EPA has under the Clean Air Act.

## BENEFITS FOR MINNESOTA AND THE UNITED STATES FROM ACTING ON POWER PLANT CARBON POLLUTION

NRDC selected a respected firm, ICF International, Inc., often used by industry and government to model impacts of regulations, to analyze the impact of its power plant plan on jobs and electricity bills. In a 2014 analysis conducted by ICF for NRDC and based on NRDC's policy designs and assumptions, it was found that the EPA could design carbon pollution standards to help the nation reduce carbon pollution 29 percent by 2020 and 38 percent by 2025, compared with 2012 levels.<sup>5</sup>

These carbon reductions would generate between \$28 billion and \$63 billion in benefits through avoided climate change impacts and avoided pollution-related illnesses and deaths.

## NEW JOBS AND LOWER BILLS

In addition, this approach could help the country in 2020:

- Create 274,000 new efficiency-related jobs.
- Save U.S. household and business customers \$37.4 billion per year on their electricity bills, including:
  - Save U.S. household customers \$13 billion, or an average of \$103 per household.
  - Save U.S. business customers \$24.3 billion.
- Reduce U.S. carbon pollution by 531 million tons.<sup>6</sup>
- Stimulate significant growth in the energy efficiency industry.

In Minnesota, the impacts would be substantial. Using the Clean Air Act in this way to reduce carbon pollution, the state could in 2020:

- **Create 7,500 new jobs**—largely through investments in energy efficiency.
- **Save \$8.80 per month** on the household customer's electricity bill.<sup>7</sup>
- **Curb carbon pollution by 744,000 tons** every year, equal to the emissions of 156,000 cars.
- **Save Minnesota households \$20 million a month, or \$244 million a year**, on their electricity bills.
- **Save Minnesota business customers \$343 million on their electricity bills.**
- **Stimulate significant growth** in the state's energy efficiency industry.

Because the bulk of investments in energy efficiency focus on making our buildings and homes more efficient, such investments create thousands of jobs that require a broad range of homegrown expertise, in industries that have been especially hard hit by the recent recession. There will be greater demand for electricians, heating/air-conditioning installers, carpenters, construction equipment operators, roofers, insulation workers, industrial truck drivers, construction managers, and building inspectors.

## MINNESOTA ALREADY LEADS ON CLEAN ENERGY

Already, Minnesota's clean energy policies and growing energy efficiency and renewable energy industries have provided big benefits to the state. The state has approved a renewable energy standard requiring that 25 percent of the state's power be derived from renewable sources by 2025. More highlights:

- Minnesota has more than 58,000 clean jobs, ranking the state 18th nationally.<sup>8</sup>
- The state is a national leader in the wind energy industry. Wind now generates 15 percent of Minnesota's electricity, and there are 19 wind power facilities in the state.<sup>9</sup>
- Installed wind power will avoid nearly 4.8 million metric tons of carbon dioxide emissions annually, equivalent to taking more than 840,000 cars off the road.<sup>10</sup>
- More than 90 solar companies employ more than 860 people in the state.<sup>11</sup>
- The 18 megawatts of solar energy currently installed in Minnesota ranks the state 29th in the country in installed solar capacity. There is enough solar energy installed in the state to power 2,200 homes.<sup>12</sup>
- In 2013, the Minnesota Legislature passed a solar energy standard requiring that 1.5 percent of the state's energy come from solar power by 2020. This standard will bring significant jobs and investment. It will also reduce Minnesotans' reliance on imported energy—keeping their hard-earned money within the state—and give people and businesses the opportunity to be energy producers, not just consumers.<sup>13</sup>

## THE IMPACT OF POLLUTION AND CLIMATE CHANGE IN MINNESOTA AND THE UNITED STATES SHOWS WHY WE NEED TO ACT NOW

### Rising temperatures are a health concern

Asthma sickened about 109,249 children and 282,441 adults in Minnesota in 2013.<sup>15</sup> Climate change, driven by rising carbon pollution, leads to higher concentrations of ground-level ozone, or the pollutant smog, which aggravates asthma.

### Extreme weather is becoming more common

In 2012, there were 3,527 monthly weather records broken for heat, rain, and snow in the United States, according to information from the National Climatic Data Center. That's even more than the 3,251 records smashed in 2011—and some of the newly broken records had stood for 30 years or more.<sup>16</sup>

## Case Study: Mortenson Construction

Minneapolis-based Mortenson Construction has deep roots in building wind farms. Founded by M.A. Mortenson Sr. in 1954, the company branched into the renewable energy industry in 1995 and was among the first major construction firms to venture into renewable energy facility construction.<sup>14</sup>

"We believed there was high potential for growth in what was then a very small market segment with few players in the industry," says Jerry Grundtner, vice president of project development for Mortenson's Renewable Energy Division. That belief proved to be well founded. Today, Mortenson employs more than 2,200 workers, including 350 in its renewable energy branch.

So far the company has built, or is in the process of building, more than 125 wind projects. Mortenson has erected nearly 8,000 wind turbines providing more than 13,000 megawatts of clean energy capacity, enough to power nearly 50,000 homes.

Beyond wind, Mortenson's Renewable Energy Division also works on the construction of solar, emerging renewables, and high-voltage transmission and distribution facilities.

Iowa was the site of the company's first wind farm, and the state has significantly benefited from Mortenson's projects. In March 2012, Mortenson began construction on the 103.5-megawatt Vienna Wind Project in Marshall and Tama Counties. When the project is complete, Mortenson will have helped install more than 2,000 megawatts of wind power capacity in Iowa, or nearly half the state's total wind power capacity. Almost 19 percent of Iowa's electricity comes from wind energy.

Mortenson has 14 total projects currently under construction in states like Minnesota, Montana, Nevada, Oklahoma, Texas, and Iowa. These projects are helping boost the economies of local communities.

### And it is imposing growing and grievous costs

Nationally, in 2012 alone, crop losses, flood damage, wildfires, and other climate-related disasters cost our country more than \$140 billion. Taxpayers picked up the lion's share of the tab, to the tune of \$1,100 each.<sup>17</sup>

### Minnesota's share is significant

In 2012, an estimated \$2.7 billion in federal taxes paid by Minnesotans went to clean up after extreme weather—about \$1,800 per taxpayer, according to Natural Resources Defense Council calculations.

## Extreme Weather and Pollution Are Affecting Minnesotans Now

Although we cannot say climate change is responsible for any individual event, climate change is already making itself felt:

- In 2012, Minnesota residents endured intense high temperatures that broke 90 heat records, drenching rainstorms that broke 72 precipitation records, and 36 large wildfires.<sup>18</sup>
- Climate change will worsen smog and cause plants to produce more pollen pollution, increasing respiratory health threats, particularly for people with allergies and asthma. Residents in 65 Minnesota counties encounter ragweed pollution, and the state can expect more days of ozone pollution as temperatures rise.<sup>19</sup>
- In October 2012, the U.S. Department of Agriculture designated 10 Minnesota counties as primary natural disaster areas due to damage and losses caused by drought. Nationwide, the 2012 drought caused \$30 billion in damage and was directly responsible for 123 deaths.<sup>20</sup>

- About 54 percent of the state's counties now face a higher risk of water shortages by mid-century as the result of climate change.<sup>21</sup>
- Changing temperature and precipitation patterns can affect the life cycle and distribution of insects. In 2010, there were 1,293 reported cases of Lyme disease in the state.<sup>22</sup>
- Minnesota has been declared a disaster area 17 times since 2000 due to severe rainstorms, snowstorms, and flooding.<sup>23</sup>

THE LONGER WE DELAY TAKING SUBSTANTIAL STEPS TO CURB CARBON POLLUTION, THE WORSE THESE CHANGES WILL BECOME. TO PROTECT OUR CHILDREN AND FUTURE GENERATIONS FROM CATASTROPHIC CLIMATE CHANGE, WE MUST ACT NOW.

### ENDNOTES

1 Laurie Johnson, Starla Yeh, and David Hawkins, *Retail Electric Bill Savings and Energy Efficiency Job Growth from NRDC Carbon Standard: Methodology Description*, Natural Resources Defense Council, May 2014.

2 Christopher Van Atten, Amlan Saha, and Lee Reynolds, *Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States*, M.J. Bradley & Associates, May 2013, [www.nrdc.org/air/pollution/benchmarking/files/benchmarking-2013.pdf](http://www.nrdc.org/air/pollution/benchmarking/files/benchmarking-2013.pdf).

3 Ibid.

4 NRDC, *Using the Clean Air Act to Sharply Reduce Carbon Pollution from Existing Power Plants, Creating Clean Energy Jobs, Improving Americans' Health, and Curbing Climate Change*, December 2012, [www.nrdc.org/air/pollution-standards/files/pollution-standards-IB.pdf](http://www.nrdc.org/air/pollution-standards/files/pollution-standards-IB.pdf).

5 NRDC, *Cleaner and Cheaper: Using the Clean Air Act to Sharply Reduce Carbon Pollution from Existing Power Plants*, [www.nrdc.org/air/pollution-standards/](http://www.nrdc.org/air/pollution-standards/).

6 Laurie Johnson, Starla Yeh, and David Hawkins, *Retail Electric Bill Savings and Energy Efficiency Job Growth from NRDC Carbon Standard: Methodology Description*, Natural Resources Defense Council, May 2014.

7 Ibid.

8 Brookings Institution, *Sizing the Economy: The Clean Economy in the State of Minnesota*, [www.brookings.edu/~media/Series/Clean%20Economy/27.PDF](http://www.brookings.edu/~media/Series/Clean%20Economy/27.PDF).

9 American Wind Energy Association, *Minnesota Wind Energy*, April 10, 2014, [date ok?] [www.awea.org/Resources/state.aspx?ItemNumber=5215](http://www.awea.org/Resources/state.aspx?ItemNumber=5215).

10 Ibid.

11 Solar Energy Industries Association, *Minnesota Solar*, [www.seia.org/state-solar-policy/minnesota-solar](http://www.seia.org/state-solar-policy/minnesota-solar).

12 Ibid.

13 Minnesota Clean Energy & Jobs, *Campaign Fact Sheet*, [www.cleanenergyjobs.mn/wp-content/uploads/2013/06/Campaign-fact-sheet.pdf](http://www.cleanenergyjobs.mn/wp-content/uploads/2013/06/Campaign-fact-sheet.pdf).

14 Environmental Entrepreneurs, "In Minn. and Iowa, Construction Company Creates Hundreds of Renewables Jobs," *Clean Energy Works for US*, [cleanenergyworksforus.org/mn-company-has-helped-power-50000-homes-created-350-plus-clean-energy-jobs-since-1995/](http://cleanenergyworksforus.org/mn-company-has-helped-power-50000-homes-created-350-plus-clean-energy-jobs-since-1995/).

15 American Lung Association, *Estimated Prevalence and Incidence of Lung Disease*, April 2013, [www.lung.org/finding-cures/our-research/trendreports/estimated-prevalence.pdf](http://www.lung.org/finding-cures/our-research/trendreports/estimated-prevalence.pdf).

16 NRDC, "Extreme Weather Map Shows 3,527 Monthly Weather Records Shattered in 2012," press release, January 2013, [www.nrdc.org/media/2013/130115.asp](http://www.nrdc.org/media/2013/130115.asp). NRDC, *Extreme Weather Map 2012*, [www.nrdc.org/health/extremeweather/](http://www.nrdc.org/health/extremeweather/).

17 NRDC, *Who Pays for Climate Change?* May 2013, [www.nrdc.org/globalwarming/taxpayer-climate-costs.asp](http://www.nrdc.org/globalwarming/taxpayer-climate-costs.asp).

18 NRDC, *Extreme Weather Map 2012*.

19 Kim Knowlton, Miriam Rotkin-Ellman, and Gina Solomon, *Sneezing and Wheezing: How Global Warming Could Increase Ragweed Allergies, Air Pollution, and Asthma*, NRDC, October 2007, [www.nrdc.org/globalwarming/sneezing/contents.asp](http://www.nrdc.org/globalwarming/sneezing/contents.asp).

20 The White House, *The Threat of Carbon Pollution: Minnesota*, fact sheet, [www.whitehouse.gov/sites/default/files/docs/state-reports/climate/f\\_minnesota\\_fact\\_sheet.pdf](http://www.whitehouse.gov/sites/default/files/docs/state-reports/climate/f_minnesota_fact_sheet.pdf).

21 NRDC, "Climate Change Health Threats in Minnesota," *Climate Change Threatens Health*, [www.nrdc.org/health/climate/mn.asp](http://www.nrdc.org/health/climate/mn.asp).

22 American Wind Energy Association, *Minnesota Wind Energy*.

23 Federal Emergency Management Agency, *Disaster Declarations for Minnesota*, [www.fema.gov/disasters/grid/state-tribal-government/57?field\\_disaster\\_type\\_term\\_tid\\_1=All](http://www.fema.gov/disasters/grid/state-tribal-government/57?field_disaster_type_term_tid_1=All).