

Combat Global Warming - Zero by 2050

Written by Chris Wright

Wednesday, 16 June 2010 14:43 - Last Updated Tuesday, 13 September 2016 16:28

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Global warming is the most serious environmental crisis facing our planet and the vast majority of climate scientists agree that climate change is the result of the human activity over the course of the industrial revolution.

A simple law that says, "**All new electrical power plants shall be renewable.**" (1) will help begin the goal of 3% per year reductions in carbon emissions to reach zero emissions by 2050. We can do this without cooking ourselves and without raising taxes.

The explosive advancement of renewable energy technologies is creating new markets, jobs and local self-reliant energy sources. Reliance on fossil fuels will continue to be a drain on the economy of the United States and Minnesota; not to mention the cost in lives from wars abroad to protect a dirty, dwindling resource that threatens the planet. By keeping it in the ground, the low-cost--low-pollution--job-creating energy future would be at hand and we would have the infrastructure to face the serious challenges confronting our state.

Author Aldous Huxley said in 1927, "Facts do not cease to exist because they are ignored."

Likewise, we cannot ignore the findings of climate scientists at the UN Intergovernmental Panel on Climate Change (IPCC). They tell us that in order to avert irreversible climate change we must stay within 2 degrees Celsius above pre-industrial levels and that we can only pollute another 270 Giga-tons of carbon into the atmosphere to stay within that temperature range. That means it is of supreme importance that we ramp down at 3-percent per year to achieve zero GHG emissions by the year 2050. Failure to boldly ramp down our carbon pollution means that in 14-years the world will reach 270GtC by 2030 and we would have to reduce at a rate of 20 percent per year; an almost impossible feat. (2) But if we begin now, and I mean NOW, to reduce our carbon output by 3% per year we can stretch out that timetable and reach zero emissions by the year 2050.

Do we really want to tell our children and descendants to "go to climate hell" to

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preserve the pollution profits of the few? No reasonable person would insist on such a reprehensible and morally corrupt agenda. Yet, many of our conservative friends are so convinced by the fossil fuel lobbyists and the conservative media propaganda that they vehemently refuse to acknowledge that polluting gigatons of carbon will raise the planet's temperature or that mobilization can avert disaster.

Fortunately, there is broad majority support for taking action, but the devil is in the details.

We need to take bold action NOW. This crisis is palpable and we're doing nothing. We can't waste 14-years to start. Combating climate change is a supremely urgent issue.

The clock is ticking for our children, grandchildren and our descendants to avoid catastrophic, irreversible climate change. We are morally obligated to begin immediately to a sustainable low-cost energy future.

(1) All Electric America-A Climate Solution and the Hopeful Future by S. David Freeman and Leah Y. Parks

(2) Earth Will Cross the Climate Danger Threshold by 2036

<https://www.scientificamerican.com/article/earth-will-cross-the-climate-danger-threshold-by-2036/>

Addressing Climate Change

A Plan to make Minnesota Energy Independent

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While it may be difficult to convince our conservative friends that survival is paramount to fossil-fuel industry profits we must implement parts of this plan immediately and most items in this plan quickly.

This crisis can only be averted by government action. We cannot wait for carbon-tax incentives or the marketplace to lower the cost of solar panels, wind turbines, and electrical storage before we begin toward the path to the renewable future.

As a nation we have taken extraordinary action on a global scale. We built the Interstate Defense Highway System; we decided to go the moon and got there; when tyranny threatened the world we retooled our nation's industrial infrastructure and in the space of five years built tanks, planes, and ships to win the Second World War, a task far more challenging than building a renewable energy infrastructure.

Constructing a renewable infrastructure is not a sacrifice, it is an investment that will pay for itself in energy savings, stable energy prices, better health and preventing future disasters due to worsening global warming or even runaway global warming leading to mass species extinction.

It may seem like achieving a political miracle, but we have no other choice. In fact, it doesn't take a miracle if we all come together to address our common interests there is nothing that we cannot achieve. It's time to roll up our sleeves.

This plan is put forth like many laws to mandate change and ban pollution. Please note that this plan is incomplete and will require adjustment, but it is a necessary beginning.

Green House Gas (GHG) Reductions and Renewable Energy by 2050 Act

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1. Prohibition: No new fossil-fuel related construction or nuclear power plants shall be allowed from the passage of this act. ***All new electrical power plants shall be renewable.***

2. Green House Gas (GHG) Reductions Mandated

(a) GHG Emissions shall be reduced 3% each year until emissions reach zero by the year 2050.

(b) A \$300 per ton penalty shall be imposed on any amount of GHG's emitted above the required reduction, to be monitored by the Minnesota Pollution Control Agency and enforced by Minnesota Department of Revenue. Offenders are prohibited from passing on the cost of penalties to consumers.

(c) This law shall apply to the electric power industry, natural gas utilities, sellers of petroleum products, steel producers, and cement production.

(d) All new construction for homes and buildings shall be GHG-free and existing buildings retrofitted to zero GHG at the time of sale or within fifteen years.

(e) The state shall provide tax incentives for weatherization of buildings, retrofitting of homes with electric heat pumps, installation of solar panels and/or wind generators, smart-grid technology, storage systems and the production of GHG-free hydrogen.

3. The Minnesota Public Utilities Commission in conjunction with the Minnesota Pollution Control Agency shall develop standards for both publicly and privately owned electric, natural gas suppliers, and refineries to meet the following requirements:

- 30% GHG-free by 2025

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- 60% GHG-free by 2035

- 100% GHG-free by 2050

4. The Minnesota Pollution Control Agency shall develop standards for the production of steel and cementitious materials to meet the following requirements:

- 30% GHG-free by 2025

- 60% GHG-free by 2035

- 100% GHG-free by 2050

5. Transportation Sector Transformation by 2050

a) Railroads

i) Every railroad doing business in Minnesota shall draft a detailed plan for converting to electricity within two years and submit it to the Department of Transportation for approval.

ii) The state shall provide government loan guarantees for the financing and implementation of the approved plans.

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iii) The electrification of railroads operating in Minnesota shall be initiated within ten years and completed within twenty years or the railroad will be charged a \$300/ton GHG fee on all GHG's emitted after that date.

iv) All railroads shall purchase approved biomass fuels whenever supplies exist until full electrification is achieved.

b) Motor Vehicles

i) All manufacturers of major auto, truck, and buses shall reduce GHG emissions of vehicles by 3% each year, through a combination of improvements in mileage and lower GHG emissions.

ii) All motor vehicle manufacturers shall transition to zero-emission vehicles according to the same timetable as the energy suppliers—30% of all new sales by 2025, 60% by 2035, and 100% by 2050.

c) Airplanes and Ships

i) All airline and ship manufacturers shall draft a detailed plan for converting to hydrogen-powered airplanes and hydrogen-hybrid ships within twenty years and submit it to the Department of Transportation for approval.

ii) All airlines and shipping shall purchase approved biomass fuels whenever supplies exist until hydrogen conversion is achieved.

6. The State of Minnesota shall create a Minnesota Green Bank, which provides loan guarantees for the financing of railroad electrification, oil refinery conversion and for the construction of renewable electricity power plants that have long-term contracts with electric distribution utilities that are ratepayer-funded.

7. Tax Credits for Zero-GHG Emission Consumer Products

a) A permanent 20% tax credit is hereby enacted for electric heat pumps and investment in energy efficiency in homes and commercial businesses.

b) A five-year 20% tax credit for zero-emission motor vehicles is hereby enacted to speed development of a mass market.

8. Oil Refineries to Convert to Biomass Gasification Fuels

a) Every oil refinery doing business in Minnesota shall draft a detailed plan for converting to biomass gasification fuels within two years and submit it to the Minnesota Pollution Control Agency for approval.

b) The state shall provide government loan guarantees for the financing and implementation of the approved plans.

c) Biomass gasification products shall include Synthesis Gas (syngas) as a suitable substitute for natural gas, gasoline, diesel products and jet fuel as priorities for production.

9. Renewable Energy Storage

a) All existing and new construction of solar and wind power shall be accompanied by suitable storage (ex. Lithium battery storage, hydrogen storage, etc.) to provide a constant and reliable level of power to the grid.

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b) Hydrogen fueling stations for transportation purposes shall be licensed with at least one facility in every metropolitan area with a population greater than 50,000 by 2020 and a population greater than 5000 by 2030.

10. GHG-Free Zones

a) Electrical GHG-Free

i) Public and private electrical utilities shall report to the PUC for inspection of residential and commercial zones that are GHG compliant for wind, solar & storage.

ii) The PUC shall establish GHG electrical compliance zones with priority given to low-income zones that contain both residential and commercial properties for GHG abatement.

iii) Residential property owners shall be considered electrically GHG-free after passing inspection for Residential Efficiency Standards (define) including weatherization efficiency, properly installed and operating Ground Source Heat Pump (GSHP) or Air Source Heat Pump (ASHP), hydrogen or SynGas furnace and water heater and is located within a GHG Electrical Compliance Zone and/or provides self-sufficient solar electrical power.

iv) Commercial property owners shall be considered electrically GHG-free after passing inspection for Commercial Efficiency Standards (define) including properly installed and operating Ground Source Heat Pump (GSHP), Air Source Heat Pump (ASHP), hydrogen or SynGas furnace and water heater and is located within a GHG Electrical Compliance Zone and/or provides self-sufficient solar electrical power or approved Commercial Heating Alternatives Natural Gas/Methane GHG-Free Zones

b) Natural Gas/Methane GHG-Free

i) Public and private suppliers of natural gas shall report to the Minnesota

Pollution Control Agency in conjunction with the Public Utilities Commission for inspection of residential and commercial zones that are GHG compliant [ex. for hydrogen or biomass derived (SynGas) (define)] substitutes for natural gas.

ii) The Public Utilities Commission shall establish GHG compliance zones with priority given to low-income zones that contain both residential and commercial properties for GHG abatement.

11. Production of Cementitious materials

a) Every cement manufacturer doing business in Minnesota shall draft a detailed plan for converting to carbon neutral products within two years and submit it to the Minnesota Pollution Control Agency for approval.

b) The state shall provide government loan guarantees for the financing and implementation of the approved plans.

12. Metal Production

a) Every metal manufacturer doing business in Minnesota shall draft a detailed plan for converting to carbon neutral production and products within two years and submit it to the Minnesota Pollution Control Agency for approval.

b) The state shall provide government loan guarantees for the financing and implementation of the approved plans.

13. Municipal Solid Waste Disposal

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a) All municipalities shall implement approved GHG reducing recycling, composting, and waste-prevention projects.

b) The remaining solid waste, including sewage sludge, shall be processed via an approved biomass gasification solid waste disposal apparatus that converts all the remaining cementitious materials and metals into molten slag pellets for additional removal of minable metals, minerals and the removal of toxic chemical contaminants before allowing the inert remainder to be landfilled at an approved site. See Patent US3729298 Solid Refuse Disposal Process and Apparatus, April 24, 1973, John E. Anderson

Note: This plan is incomplete and does not address fully displaced workers, poor homeowners or renters, the smart grid, definitions, exceptions or appeals; Revisor of Statutes etc.

Citations:

2. Animation: How methanol fuel cells work - Ballard Power Conversion.

{jsmallfib [top/energyindependence]}

More information:

- <http://en.wikipedia.org/wiki/Gasification>
- <http://www.scientificamerican.com/article.cfm?id=grassoline-biofuels-beyond-corn>

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