2018 Candidate Education: Energy

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Candidate Education - Energy

What we’ll cover:

• Who we are
• How Minnesota’s energy system works
• How energy policies help shape the market
• Top opportunities for our next governor

www.fresh-energy.org
About Fresh Energy

- Founded 25 years ago
- Focus on market driven policies
- In-depth research and analysis

Broadly speaking:
1) Clean up electricity
2) Make things efficient
3) Electrify everything
Policy that can shape the market

Minnesota is a leader

- Even before the election, action was at the states
- Minnesota has long history of bipartisan progress
- We need to build on that progress by expanding clean energy opportunities
Renewable Electricity

Minnesota stands ready to benefit from clean, affordable sources of electricity like wind and solar, and all the improvements they bring to health, well-being, and our natural environment. Fresh Energy’s experts continue to pave the way for Minnesota to harness the power of the marketplace to expand the adoption of renewable energy and accelerate our leadership in the clean energy economy.
Renewable Electricity

- In 2007, Minnesota passed a Renewable Energy Standard with 186 lawmakers in favor and only 13 opposed.
Renewable Electricity

Unsubsidized Levelized Cost of Energy—Wind/Solar PV (Historical)

Over the last seven years, wind and solar PV have become increasingly cost-competitive with conventional generation technologies, on an unsubsidized basis, in light of material declines in the pricing of system components (e.g., panels, inverters, racking, turbines, etc.), and dramatic improvements in efficiency, among other factors.
Renewable Electricity

Renewable generation subsectors

40.82% Wind
2,181 jobs

51.89% Solar
2,773 jobs

4.90% Geothermal
262 jobs

2.40% Bioenergy
128 jobs
Renewable Electricity

- “Wind is the new baseload.”
- $10m/year in tax revenue
- It’s simple: Minnesota is windy

Chris Kunkle (left) of Wind on the Wires presented a ceremonial check to Mower County Board of Commissioners Chairman Tim Gabrielson on Friday. Michael Stoll/mike.stoll@austindailyherald.com

A windy win for county: Mower County leads the state in wind energy production tax
Renewable Electricity

- Solar is a rapidly growing industry
- Customer driven (farmers, churches, businesses, schools)
- Improves soil and water quality, supports pollinators
- Production tax revenue, good paying jobs, lease payments

Rooftop  Community  Utility
Renewable Electricity

Opportunities

• Expand access to clean energy
• Take advantage of tax credits
• Avoid building stranded assets

Proposal seeks to speed approvals for Minnesota solar projects

Congress strikes deal to extend wind, solar tax credits and lift oil export ban
Energy Performance

Fresh Energy is helping Minnesota reduce waste and use smart technology across the whole utility system, preventing the need for new power plants and generating savings. Our work with utilities shapes rate designs and helps maintain the low-cost energy we value in our state.
Energy Performance

- The cheapest kilowatt-hour is the one you don’t use – literally.
Energy Performance

- Conservation programs save customers nearly $300m/year
- They’re successful because they focus on cutting waste
Energy Performance

- We work to make sure those programs work for everyone
- Large industrial customers, multifamily buildings, seniors

New energy program will help save people money and time

By Fresh Energy | September 29, 2015
Energy Performance

- We design rates that work for both customers AND utilities
- Lower fixed fees + rates that encourage savings
- Essentially: you shouldn’t be punished for cutting waste
Energy Performance

Opportunities

- Time of use rates
- Decoupling
- Pursue smart electrification
Global Warming Solutions

Fresh Energy is helping Minnesota continue its successful progress in reducing the use of fossil fuels to produce electricity. We provide public education, science policy expertise, and data-driven solutions that set the stage for a future rooted in zero-carbon energy.
Global Warming Solutions

Minnesota a national leader in clean energy

Source: Energy Information Administration
Global Warming Solutions

2007 Next Generation Energy Act

• Economy wide emissions targets (184 to 14)
‘The wind Xcel Energy is bringing online is lower in cost than our lowest cost coal plant.’

Christopher Clark
President, Xcel Energy
“General Mills is committed to doing our part to tackle climate change.”

• Required every supplier to achieve 27% carbon reductions by 2025
• Committed $100 million investment in efficiency and renewables
• Led 1,000 companies in urging commitment to Paris Agreement and the opportunities for clean energy
Global Warming Solutions

• Clean energy improves air quality and reduces health costs

The PUC will conduct hearings and vote next week on policy that could affect what type of power plants are built and where

$11 to $57
Federal social cost
of carbon per ton

44 cents to $4.53
State's current cost
of carbon per ton
Global Warming Solutions

Opportunities

• Transition aging power plants off our system
• Continue taking advantage of low (and falling) prices

Taconite Harbor Energy Center
Minnesota Power, Schroeder
Annual carbon emissions: 1,300,000 tons

Boswell Energy Center
Minnesota Power, Cohasset
Annual carbon emissions: 8,500,000 tons

Hoot Lake
Otter Tail Power, Fergus Falls
Annual carbon emissions: 1,000,000 tons

Sherburne County (Sherco)
Xcel Energy, Becker
Annual carbon emissions: 14,800,000 tons

Allen S. King
Xcel Energy, Oak Park Heights
Annual carbon emissions: 3,300,000 tons
Electric Cars & Buses

Transportation powered by clean electricity, instead of oil and gas, reduces pollution and can strengthen the electric grid. Fresh Energy provides education and technical assistance designed to help all Minnesotans capture the health and cost savings of electric transportation.
Electric Cars & Buses

• Transportation is a major source of pollution, especially in our neighborhoods

• Electrifying transportation doesn’t just reduce that pollution, it shifts transportation spending to local utilities
Electric Cars & Buses

• Electricity is more affordable and much more predictable
Electric Cars & Buses

- Fewer moving parts, regenerative breaking, etc
Electric Cars & Buses

- Utilities want to grow their business
- We want to reduce emissions
- People want to drive fun, high quality cars
- Everyone wants to save money
Electric Cars & Buses

Opportunities

• Electrify transit and school buses
• Electrify state and government fleets
• Incentivize new and used electric vehicles
Better Buildings

Highly efficient homes and commercial buildings make Minnesota a great place to live and do business. Fresh Energy is identifying new data-driven opportunities that save money – for home owners, renters, and companies – and improve the health of our communities.
Better Buildings

- Buildings are a big energy user – 52 percent in Saint Paul!

2015 Greenhouse Gas Inventory
Better Buildings

BUILDING ENERGY CODES
Big Savings for Minnesota

How do building energy codes benefit Minnesota residents?

- Lower energy bills
- Healthier indoor air
- Stronger economy

Since 2009, Minnesota’s building energy code has saved:

<table>
<thead>
<tr>
<th>Consumer Energy Bill Savings</th>
<th>Total Energy Savings (MMBTU)</th>
<th>Total CO2e Savings (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$157,718,505</td>
<td>12,205,698</td>
<td>945,723</td>
</tr>
</tbody>
</table>
Better Buildings

- Minnesota is a leader
- Codes officials, builders, energy experts, utilities work together
- Share best practices
- Everyone wins
Better Buildings

- A more ambitious building code could create jobs and savings

**Minnesota Job Creation**

**Cost Versus Savings**

Clean energy policies that immediately reduce emissions are shown. Bar height corresponds to the average annual jobs created in the economy through policy implementation using the Regional Economic Models, Inc. (REMI) model of Minnesota’s economy. Clean energy policies that immediately reduce emissions are shown. Bar height correspond to the net costs and savings of policies where negative numbers are savings and positive numbers are costs. Net present value (NPV) takes all future dollars and discounts them back to the value of a dollar (in this case) in 2014.
**Better Buildings**

**Opportunities**

- Create an optional stretch code for cities to pursue (SB2030)
- Make state buildings, and state funded buildings, super efficient
Opportunities

Minnesota’s next governor will have a major impact on our energy economy. As wind, solar, and energy efficiency continue to get even more cost effective, there are several key opportunities our next governor can take advantage of.
Opportunities

• Protect the Public Utilities Commission as independent experts who make Minnesota a leader on energy.
Opportunities

- Continue expanding access to clean energy for all energy customers
Opportunities

- Keep Minnesota on track to meet our broadly bipartisan goals
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