



# CLEAN ENERGY ECONOMY MINNESOTA

MN Rural Electric Board – 7/27/15

# Today's Agenda

- Source Material:  
<http://www.cleanenergyeconomymn.org>
- HIGH LEVEL overview of MN's electric system
- How does MN Stack up to other states
- Economics of renewables
- Value of efficiency programs
- Jobs created in clean energy/renewable space
- What's Next?
- Discussion/Q&A

# Introduction

- Mike Franklin, Clean Energy Economy MN
  - ▣ Emcee
- Joe Sullivan, Center for Energy & Environment
  - ▣ Manager of Strategic Relations
  - ▣ 10+ Years in Minnesota Energy Policy
  - ▣ Attorney
- Chris Kunkle, Wind on the Wires
  - ▣ Regional Policy Manager
  - ▣ 5+ years in energy Policy
  - ▣ Scennie

# Overview

- Current Energy Mix is 21.6% Renewables, 79.4% non-renewables
  - ▣ Wind is the primary renewable source – 15.9% total
  - ▣ Solar coming on
- Working toward more balance
- Why?
  - ▣ Hedge our bets – use all technologies
  - ▣ Renewables are CHEAPER
  - ▣ Keep energy dollars local & grow our economy
  - ▣ Stay on front end of technology development
  - ▣ Save Money for Minnesota's electric customers
  - ▣ Better for Environment

# Minnesota's Current Energy Mix

- ▣ About 21.6% Renewables Today
  - Current Requirement is 26.5% by 2025
  - (31.5% for Xcel)
- ▣ Sources include
  - Wind
  - Solar
  - (Small) Hydro
  - Biomass
  - Others (Municipal Solid Waste, Hydrogen, Anaerobic Digestion)

# Renewables in Minnesota – a Brief History

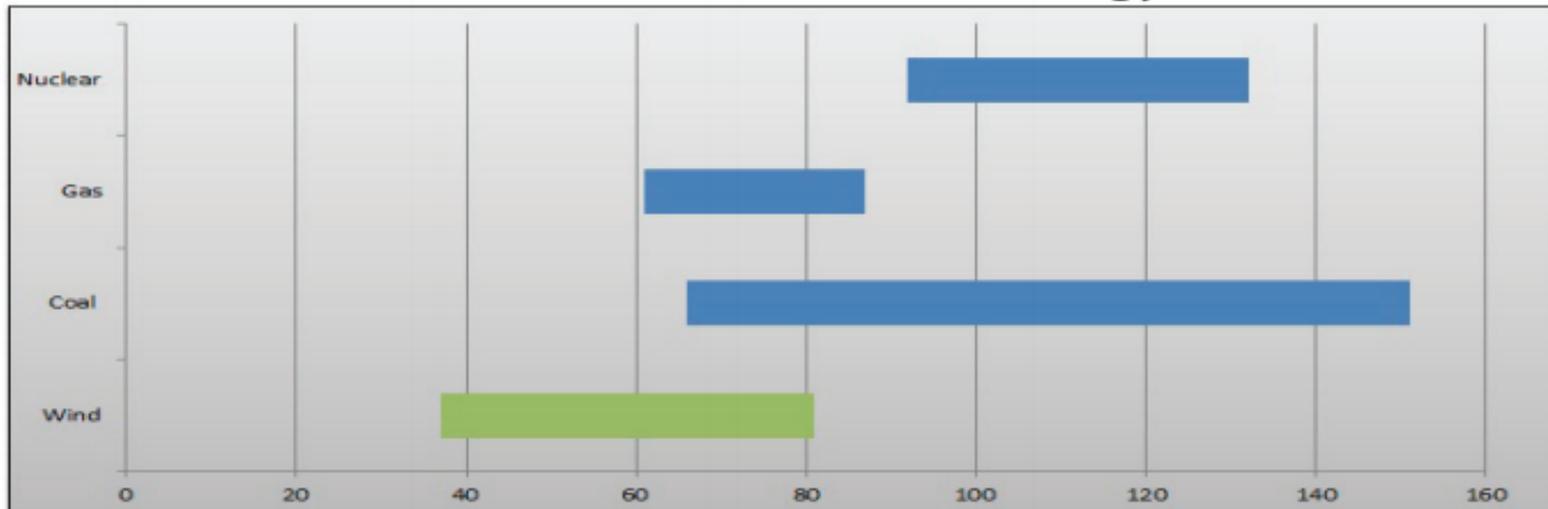
- 2001: Renewable Energy Objective Passes with goal for state's utilities
- 2002: Minnesota's solar energy rebate program
- 2007: Renewable Energy Standard passed & Signed into law by Gov. Tim Pawlenty
  - Requirement of 25% by 2025
- 2013: Solar Energy Standard requires 1.5% of power to come from solar by 2020

# Renewables Winning on Cost...

## Wind Power is Cost Competitive

Wind power is a low-cost solution for new electricity generation in America; and is the least cost renewable source of new electricity.

Unsubsidized Levelized Cost of Energy \$/MWh



Wind	Coal	Gas	Nuclear
\$37-81	\$66-151	\$61-87	\$92-132

Source: Lazard

# Cost Impact of RES has been minimal to most, a savings for some

- NO utility has used customer protections in the law!
- Xcel Energy has been “able to deliver renewable energy at a price our customers can afford. In 2013, we announced the addition of 1,900 megawatts of wind energy across our service territory and 170 megawatts of solar energy, all at prices below fossil alternatives.”  
<https://www.xcelenergy.com/staticfiles/xcel/Corporate/CRR2013/message-from-ceo.html>
- Xcel’s current Integrated Resource Plan (IRP) calls for 35% Renewables by 2030, including an additional 1,800 MW of Wind Energy.
- And...compared to what?
  - Monticello cost-overruns of \$400M
  - Sherco offline for nearly 2 years 2011-2013; ~\$200M (!!)

# Electric Rates in Upper Midwest

Energy Information Administration, Average Retail Price of Electricity (cents per kWh) by End-Use Sector

		Percent of Wind in State	Residential (in cents)	Commercial (in cents)	Industrial (in cents)	Avg Electric Rates
Iowa	<b>1</b>	<b>27.4</b>	10.5	7.8	4.7	7.12
North Dakota	<b>2</b>	<b>15.6</b>	8.7	8.1	7.9	8.28
Illinois	<b>3</b>	<b>4.7</b>	12.04	8.56	6.13	8.9
Indiana	<b>4</b>	<b>3.2</b>	11.4	9.6	6.9	9.06
Minnesota	<b>5</b>	<b>15.7</b>	11.8	9.2	6.7	9.26
Wisconsin	<b>6</b>	<b>2.4</b>	13.7	10.7	7.5	10.6
Michigan	<b>7</b>	<b>2.4</b>	14.4	10.7	7.4	10.9
Average		10.2	11.79	9.23	6.74	9.16

# Efficiency

- Minnesota's utilities have worked to reduced energy costs by 1.5 percent each year. Savings from 2010 and 2011 alone was enough to heat, cool, and power more than 102,000 homes.
- Keeping utilities viable & profitable while working to promote conservation was the challenge
- Challenge Accepted!
- Some concerns exist...

# Efficiency Programs

- Utility Programs
- Private Programs
  - MN CEE
  - MN Chamber of Commerce – Energy Smart
- Private/Public Partnership Programs
  - PACE
- Jobs
  - 9,604 jobs in 2014!
  - 445 Energy efficiency businesses (up 80% from 2000)

# Slayton Lighting Retrofit

## Slayton Lighting Retrofits



A Minnesota based film production company is documenting 12 businesses on main street in Slayton, Minnesota as they retrofit or replace their current lighting through Xcel Energy's One-Stop Efficiency Shop program.



It all began in 2009 when the [City of Slayton](#) City Council instructed City Administrator Cathy Magnus to pursue programs to help make the City more energy efficient. Cathy contacted local Clean Energy Resource Teams (CERTs) coordinator Annette Bair, who connected Cathy with Jamie Fitzke, a lighting consultant with CEE and the [One-Stop Efficiency Shop](#) lighting program.

With Jamie's assistance, Slayton began retrofitting inefficient lighting in their city buildings including their Fire Department, Police Department, City Hall, Library and the Senior Center. Cathy was so impressed by both the quality of light and the energy savings that the City of Slayton partnered with CEE to promote Xcel Energy's One-Stop Efficiency Shop program to their Main Street businesses, including offering grants to businesses to help them complete their retrofits.

"We were extremely pleased with the results of the program not only for the energy savings, but with the great improvement of the quality of lighting in our buildings," remarked Cathy. "When our Economic Development Authority found that they had grant monies available for local businesses they put out applications for businesses to apply for money. Several of the businesses indicated that lighting was an issue with many of the older buildings they occupied. It just seemed logical to team up with the Center for Energy and Environment and the Xcel Energy rebate program and provide improvement to those buildings that will save money over the course of the next few years. The improvement made to these businesses has been great. It is the desire of the EDA to continue to work with the local businesses for more energy efficient ideas in the future."

### Slayton Lighting Retrofits At A Glance

**Goal:** To help small businesses in Slayton, MN reduce utility costs and improve the quality of lighting in their businesses.

**Progress:** All new lighting installations are complete!

#### Partners:

- Xcel Energy
- City of Slayton

#### Participating City buildings:

- Fire Department
- Police Department
- City Hall
- Library
- Senior Center

#### Participating Main Street businesses:

- [Slayton Bakery](#) (2613 Broadway Ave)
- [VMR LLC](#) (2524 Broadway Ave)
- [B & K Designs](#) (2224 Maple Ave)
- [Hamples TV & Floorings, Inc.](#) (2517 Broadway Ave)
- [VIP Floral](#) (2929 Maple Ave)
- [Hometown Variety](#) (2640 Broadway Ave)
- [Skalak Outdoors](#) (2629 Broadway Ave)
- [Murray County News](#) (2627 Broadway Ave)
- [Muldoon Chiropractic](#) (2706 Broadway Ave)
- [The Hut Gift Shoppe](#) (2614 Broadway Ave)
- [Second Wind Antiques & More](#) (2653 Broadway Ave)

**Website:**  
<http://on.fb.me/slayton>

- City of Slayton
- Xcel Energy
- Main Street Businesses
- 1.5 year Payback!

# Why focus on clean energy & Efficiency?

- Driven by Business Decisions
- Driven by Policy
  - Renewable Energy Objective (until 2007)
  - Renewable Energy Standard (since 2007)
  - Solar Energy Standard (2013)
- Driven by Concern for Environmental Stewardship
- Jobs being created are in Minnesota – not other states/regions

# Jobs Created in the State

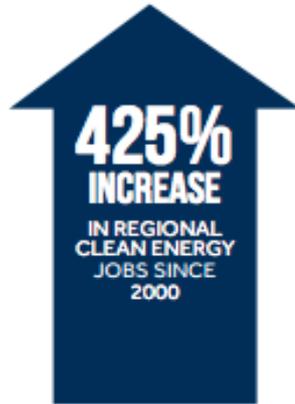
- ▣ Statewide – 15,388 jobs in 2014, 78% increase since 2000
  - 63% of these jobs in efficiency space
- ▣ Good paying jobs - \$78,000 on average
  - Minnesota's overall average - \$51,000
- ▣ 772 MN Businesses are in the Clean Energy space
  - 58% of these in efficiency
  - 122% increase from 2000
- ▣ By Region – Southwest – next slide...
- ▣ Kinds of Jobs – spans the spectrum

Source: <http://mn.gov/deed/data/research/clean-energy.jsp>

# Jobs Created – Southwest MN

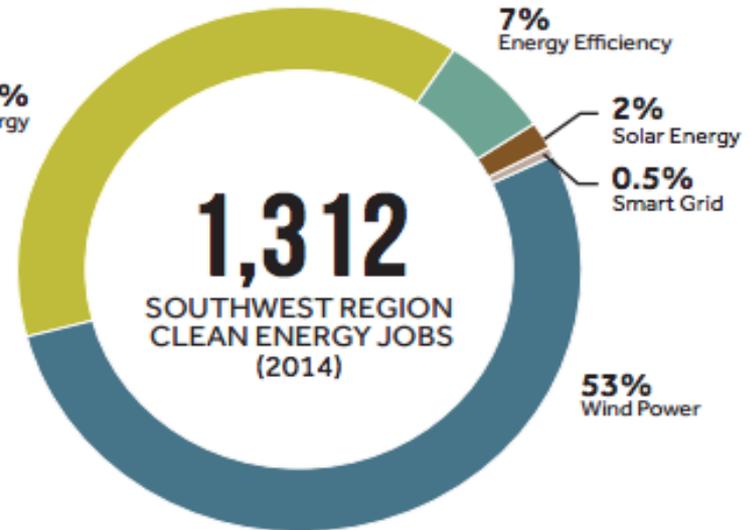


## EMPLOYMENT



**+11%**

OVERALL STATE EMPLOYMENT GREW ONLY 11% DURING SAME TIME PERIOD



**1.64**

THE REGION HAS THE HIGHEST CLEAN ENERGY EMPLOYMENT CONCENTRATION IN THE STATE (2014)



**41%**

THE SOUTHWEST REGION HAS 41% OF MINNESOTA'S WIND POWER JOBS (2014)



**27%**

OF THE SOUTHWEST REGION'S JOBS ARE IN INSTALLATION AND MAINTENANCE OF WIND POWER TECHNOLOGIES

# Other Metrics...

- Minnesota is 8<sup>th</sup> in clean energy patents filed in 2013 (up from 20<sup>th</sup> in 2003)
- Nearly \$11 BILLION have been invested in clean energy projects
- Efficiency and Renewables combine to power 1.4 Million homes for one year as of 2012

# Next Steps...What's Coming

- Clean Power Plan – Final Rule estimated in Summer 2015
  - MN Preliminary Goal – 41% Reduction by 2030
- Carbon Pollution Standard (CPS) a Part
- Targeted, State-by-State CO2 Reductions
- Implementation by State Plan or Federal Plan
- 2015-16, Minnesota Departments (PCA, Commerce) will Work on a State Implementation Plan (SIP)

# CPP

- We are Doing This Anyway!
  - ▣ More Efficient Coal
  - ▣ More Renewables
  - ▣ More Energy Efficiency
- State Departments' Decisions May Hinge on Renewables/Efficiency vs. Natural Gas
  - ▣ What would Minnesotans Want?
  - ▣ What Benefits our State's Economy Most?

# Popularity/Demand

- ▣ 2014 Regional Survey with D & R firms
- ▣ 95% (74% strongly) support an increase in the commitment to efficiency
  - 99% of Dems, 98% of Independents, 89% of GOP
- ▣ 85% say more wind energy
  - 95% D, 87% I, 71% R
- ▣ 93% say more solar
- ▣ Businesses polled in June 2014 by ACORE
  - 400 small businesses, 400 large businesses
  - 73% of businesses believe that more renewables will reduce their costs over the next 10-20 years
  - 78% of businesses call energy technologies a growth opportunity for the United States

# Conclusions

- This isn't about picking winners and losers – it's about balance and an “all of the above” strategy
- More conversation & leadership from customers will yield a more productive conversation at the state & federal level
- Consider the logical possibilities for future generation – the mix will be more renewable, more local and cleaner.

# Q&A

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# THANK YOU!

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# Minnesota Clean Energy Forum

THANK YOU!