

OVERVIEW OF WISCONSIN MARKET FOR RENEWABLE ENERGY PROJECTS

September 3, 2012

Presentation to
The Public Utilities Regulatory Authority of The Gambia

Deborah Erwin
Public Service Commission of Wisconsin



Outline

- Background on the Public Service Commission
- Electricity Supply in Wisconsin
- Major Renewable Energy Laws in Wisconsin
 - Renewable Portfolio Standard
 - Focus on Energy
 - Wind Siting
- Trends in Renewable Energy in Wisconsin



Public Service Commission

- State agency responsible for the regulation of public utilities: **electricity, natural gas & water**
- Consists of three Commissioners, appointed by the Governor for staggered 6 year terms, who issue official decisions by the agency
- PSC staff advises the Commissioners on regulatory matters
- Some decisions can be delegated by the Commissioners to the staff



Public Service Commission



Commissioner Ellen Nowak



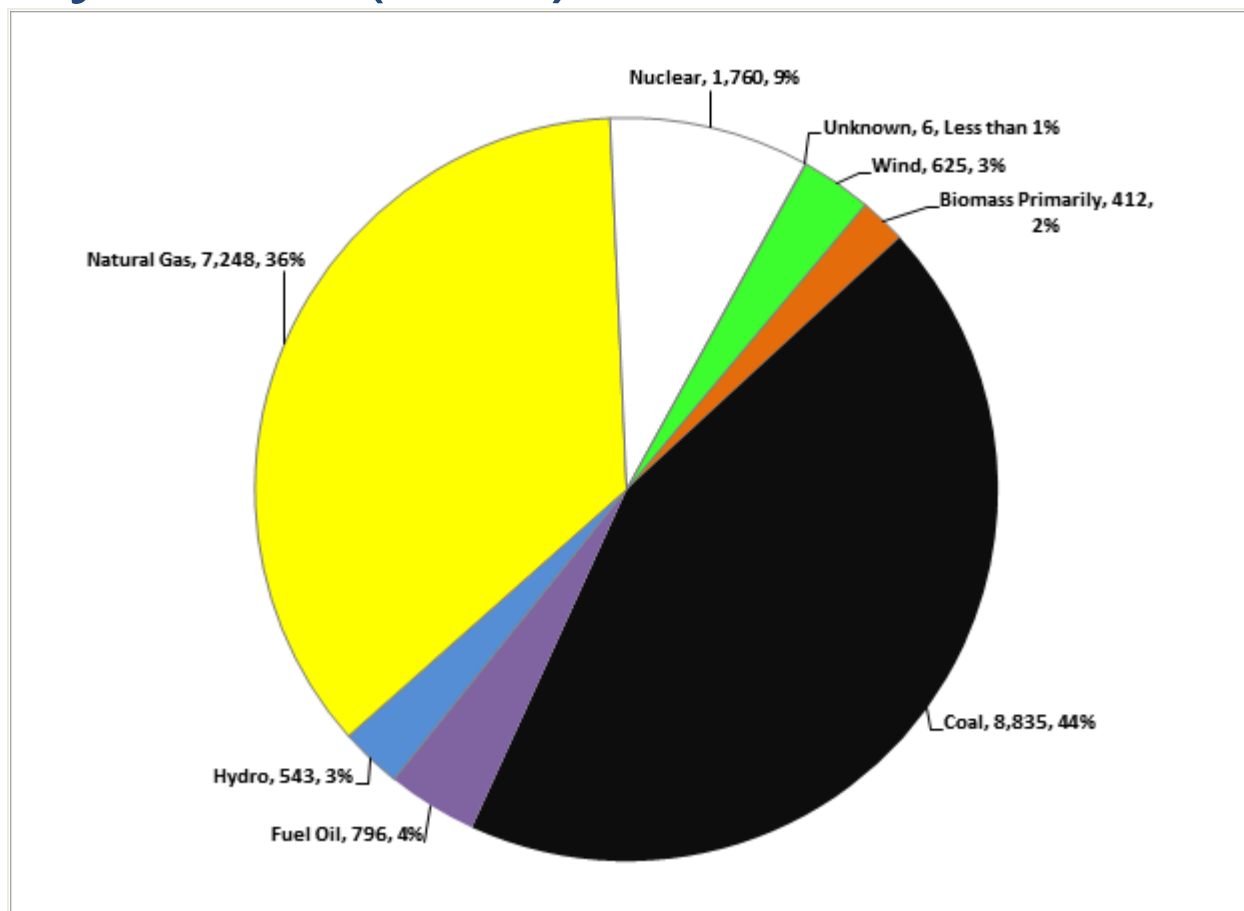
Chairman Phil Montgomery



Commissioner Eric Callisto



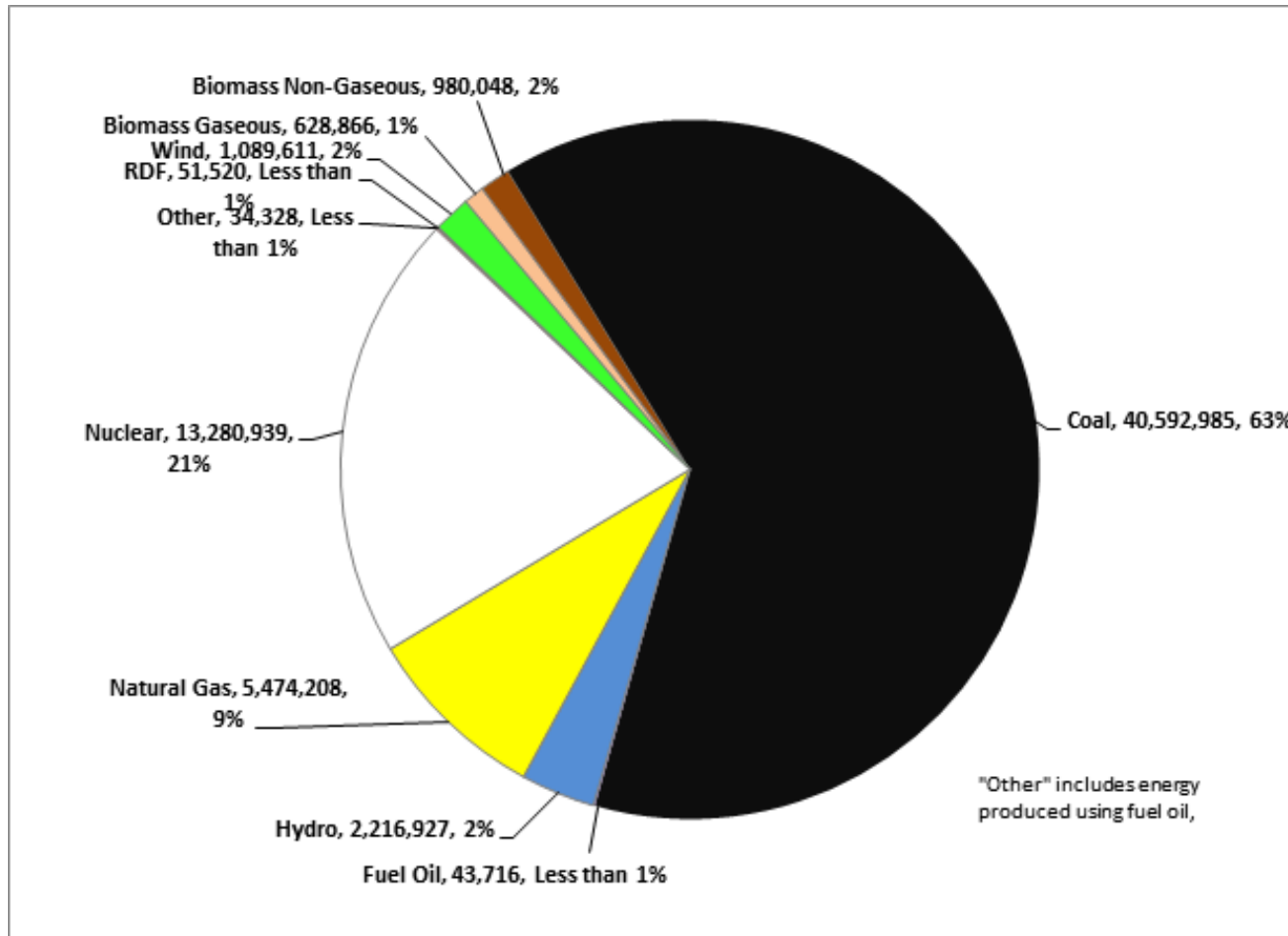
Wisconsin Generation Capacity by Fuel, January 2011 (MW)



Includes generating units operated by IOUs, cooperatives, municipals, non-utilities, and merchants; total in service nameplate and uprate capacity (MW)

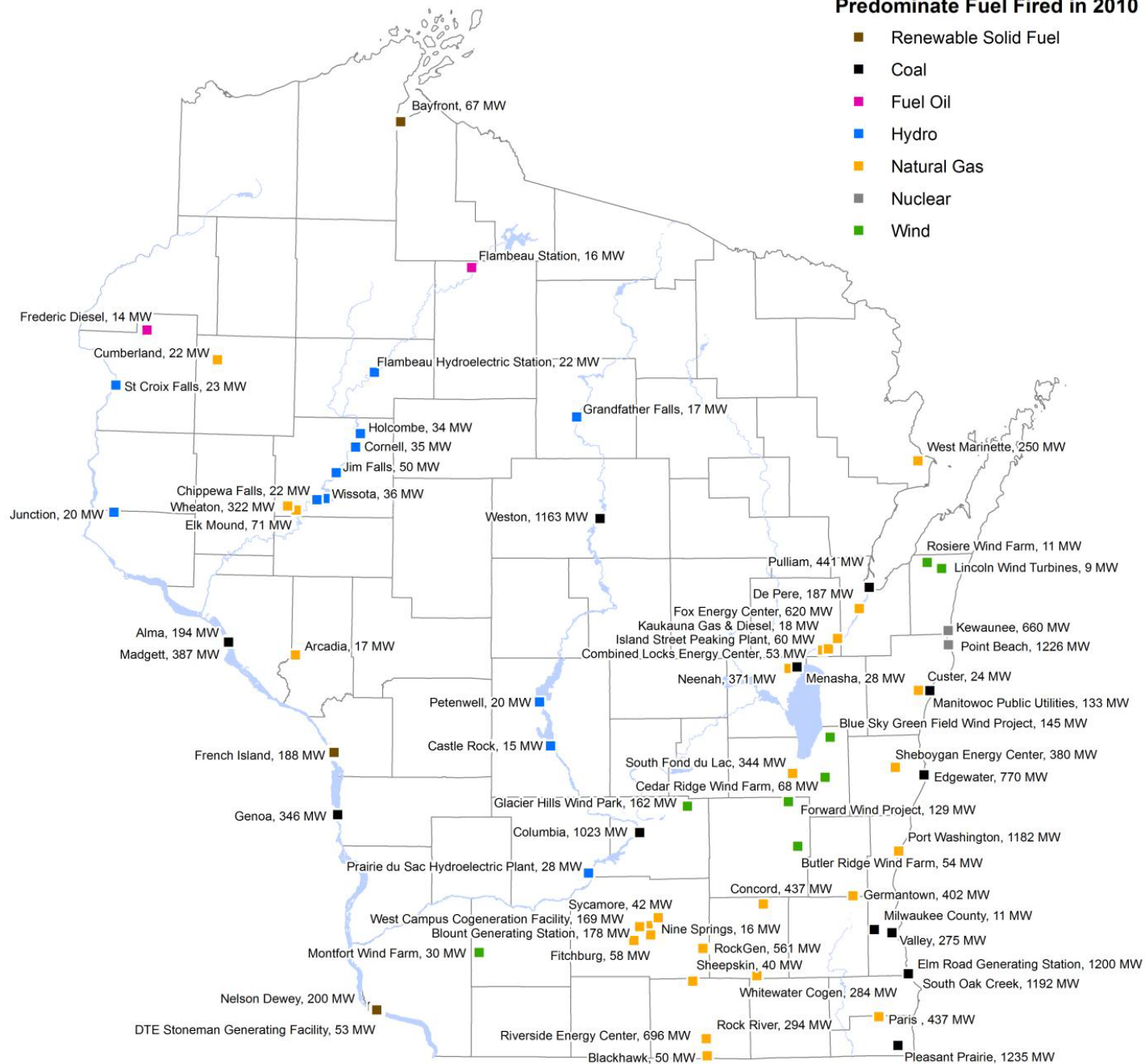


Wisconsin Energy Generated by Fuel, 2010 (MWh)



Includes generating units operated by IOUs, cooperatives, municipals, non-utilities, and merchants; total in service nameplate and uprate capacity (MWh)

Predominate Fuel Fired in 2010



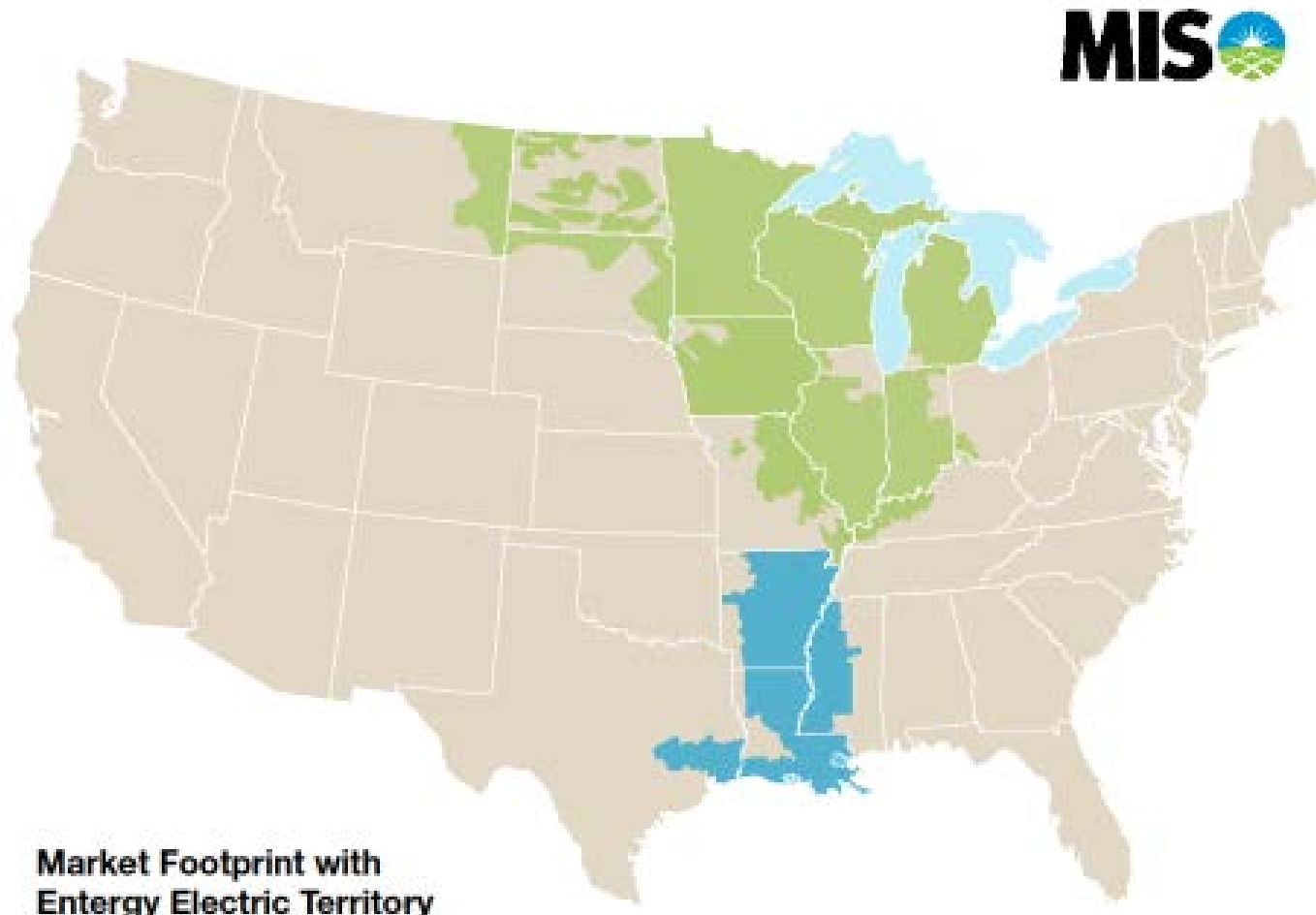
Electricity Supply in Wisconsin

- Wisconsin participates in a regional transmission system operated by the Midwest Independent Transmission System Operator (MISO)
- Electricity sources scheduled and electricity needs are met through day-ahead and real-time electricity markets
 - Bilateral contracts exist and are scheduled through the market
 - Use of utility's own generation can also be “self-scheduled” through the market
 - Pricing is based on location – locational marginal prices
 - Affected by transmission constraints
 - Affected by types of generation available & bidding in the market



MISO Market Footprint

(with possible future expansion in blue)



Source: midwestiso.org



Renewable Portfolio Standard (RPS)

- An **RPS** is a law that requires electric providers to provide a certain percentage of their energy using renewable resources
- Often includes achieving increasing benchmarks over a number of years to get to an ultimate goal
- Major Components:
 - Defines what qualifies as “renewable”
 - May include “carve-outs” or “set-asides” for:
 - Specific technologies – i.e. 5% from solar
 - May use percentages, multipliers, or “classes” of energy
 - Projects located within the state or region
 - May allow energy efficiency or other non-electricity generating measures to count towards RPS



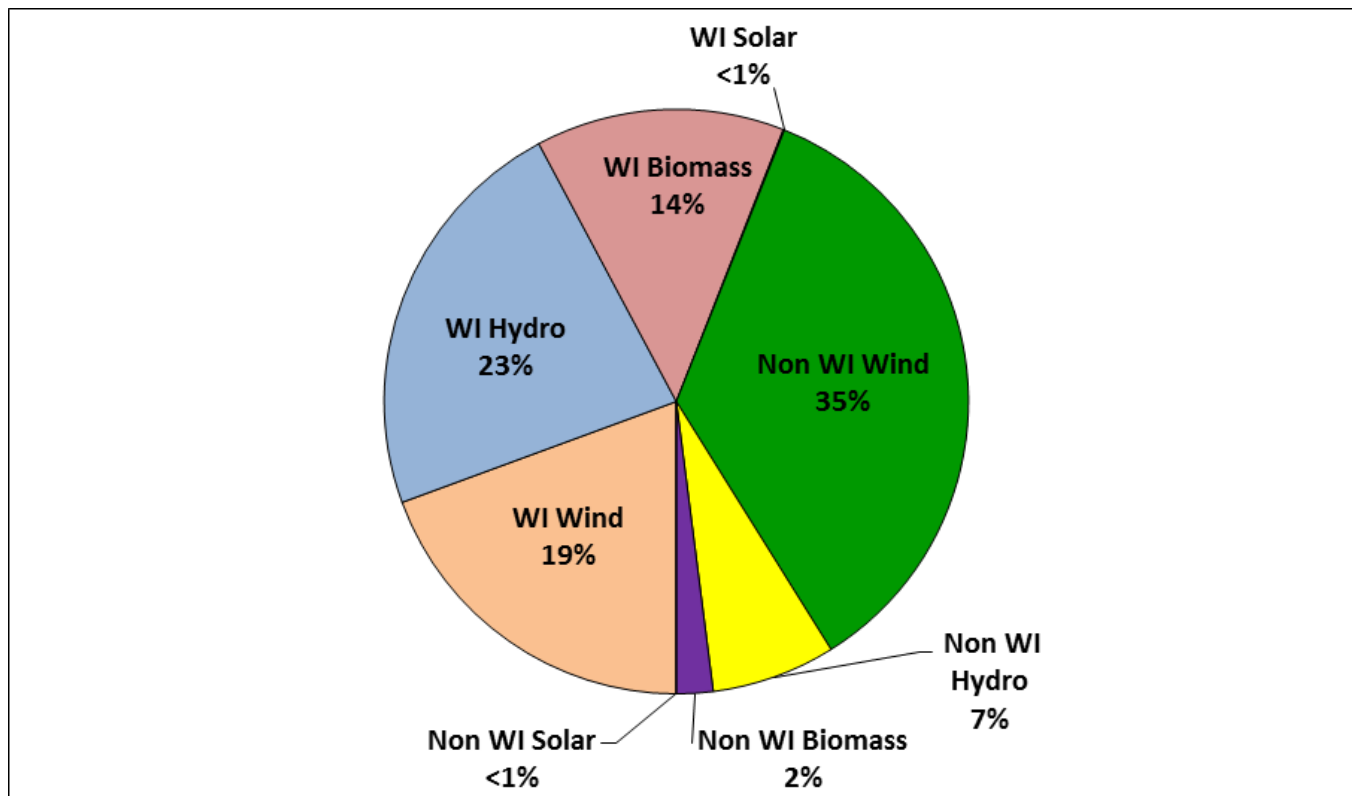
Wisconsin's RPS

- Wis. Stat. § 196.378 – passed in 2006
- Goal of **10%** renewable electricity by **2015**
- Each electric provider has a “baseline” requirement, based on their 2001-2003 renewable energy percentage
- RPS Framework:
 - 2006-2009: Required to maintain **baseline %**
 - 2010-2014: **Baseline + 2%**
 - 2015 and beyond: **Baseline + 2% + 4%**
- Major driver of new renewable energy built or purchased by Wisconsin utilities

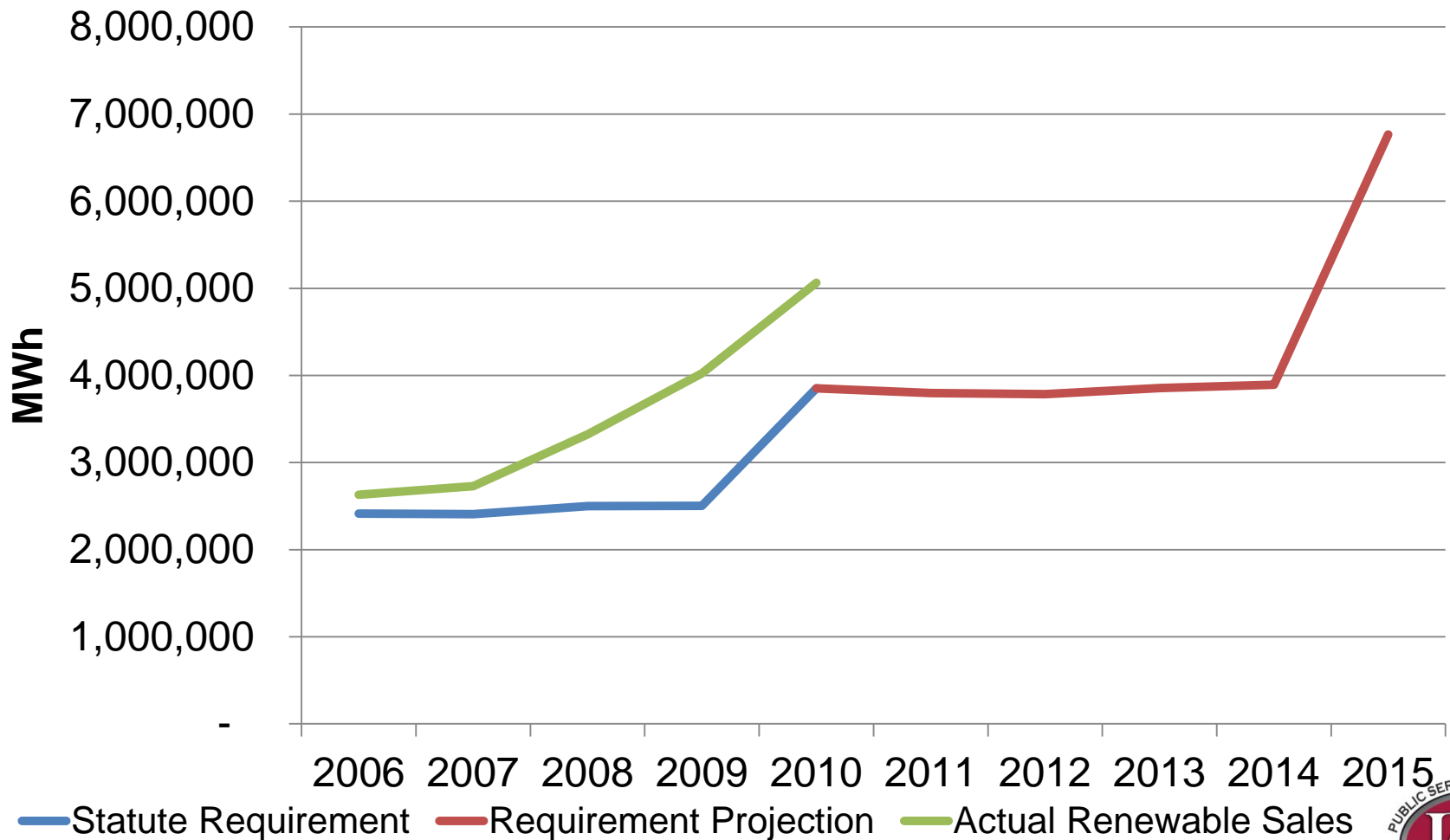


Renewable Energy in Wisconsin

- In 2010, Wisconsin got about **8%** of its electricity from renewable resources (including voluntary green pricing programs)



Wisconsin 2010 RPS sales Required v. Actual



Focus on Energy

- 2005 Wisconsin Act 141; Wis. Stat. § 196.374
- Wisconsin's statewide energy efficiency & renewable resource program
- Program provides grants and incentives for customer-owned projects
- Funded by **1.2%** of electric and natural gas utility investor-owned revenues, and **\$8/meter** for municipals & cooperatives
- Commission has oversight and sets goals, priorities and targets



Focus on Energy

Emphasis on **cost-effectiveness**

- In 2011, there was a dramatic increase in the amount of renewable energy projects funded by Focus on Energy
- Going forward, renewable energy and energy efficiency projects will be judged using the same cost-effectiveness test
- A matrix of additional criteria was developed to account for attributes of renewable energy projects not adequately reflected in the standard cost-effectiveness test

Focus on Energy

- For 2012, renewable energy projects were divided into two categories based on cost effectiveness
- More funding is now going towards biomass and biogas projects, due to cost effectiveness
- A smaller portion of the renewable energy funding is dedicated to less cost-effective renewables like small wind and solar



Wind Siting in Wisconsin

- PSC has authority over wind projects **100 MW or larger**, or which are proposed by a utility and meet cost threshold
- Wind **under 100 MW** follows local permitting requirements
- Wis. Stat. § 66.0401: Local governments cannot restrict, unless the restriction:
 - Serves to preserve or protect public health or safety
 - Does not significantly increase cost of system or significantly decrease its efficiency
 - Allows for an alternative system of comparable cost and efficiency



Wind Siting in Wisconsin

2009 Wisconsin Act 40 added:

- No political subdivision may place any restriction, either directly or in effect, on the installation or use of a wind energy system that is more restrictive than the rules promulgated by the commission under s. 196.378 (4g) (b).

Commission conducted rulemaking to establish uniform wind siting rules

- Legislatively created Wind Siting Council provided recommendations
- Held public hearings, received about 1800 comments



Wind Siting in Wisconsin

Per Wis. Stat. § 66.0401, a political subdivision *may not* be *more* restrictive than the wind siting rules. They *may* be *less* restrictive, or choose not to regulate at all.

Wis. Admin. Code ch. PSC 128

- Noise:
 - 45 dBA night
 - 50 dBA day
- Shadow flicker
 - 30 hr per year limit for non-hosts, schools, place of worship, daycare
 - >20 hr per year can require mitigation
- Setbacks:
 - Lesser of 1,250 feet or 3.1 x height from non-host residences, schools, place of worship, daycare
 - 1.1 x height from host residence, property lines, rights of way



Trends in Wisconsin

- Focus on cost-effectiveness
- Focus on making the business case for renewable energy

Additional Information

Public Service Commission website: psc.wi.gov

Deborah Erwin

deborah.erwin@wisconsin.gov

