



Lessons From The U.S.: The Role Of The Regulator In Cooperation With Other Energy Efficiency Stakeholders

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Goals of Presentation

- Brief overview of Wisconsin
- Wisconsin energy efficiency history
- Stakeholder roles
- Program goals
- Major elements of program design
- Lessons learned



Geography and Climate of Wisconsin

- Land Area: 141,000 km²
- Population: 5,688,040
- Capital: Madison, population 227,700
- Largest City: Milwaukee, population 584,000
- Average Winter Temperature: -8°C
- Average Summer Temperature: 19°C
- Average Annual Precipitation: 83 cm

Public Service Commission of Wisconsin (PSCW)

- Wisconsin was 1st state to regulate public utilities (1907)
- Three commissioners appointed by the Governor to serve 6-year terms
- Staff of ~150
- PSCW regulates more than 1,100 public utilities that provide electricity, natural gas, water and telecommunication services

PSCW Role in Regulation of Electricity Industry

- The PSCW has broad regulatory authority over:
 - Investor Owned Utilities (IOUs)
 - Municipal Electric Utilities
- The PSCW has varying limited regulatory authority over:
 - Independent Transmission Companies (“ATC”)
 - Cooperatives
 - Independent Power Producers
- Local Distribution Companies:
 - 118 monopolies with distinct service territories
 - 12 private utilities (owned by investors)
 - 82 municipal utilities (owned by local government)
 - 24 cooperatives (owned by customers)

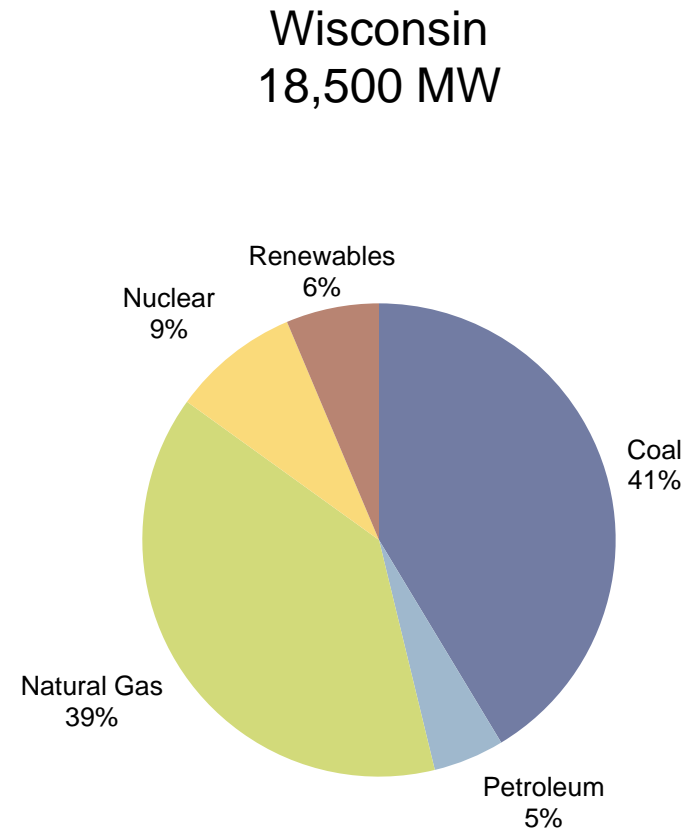
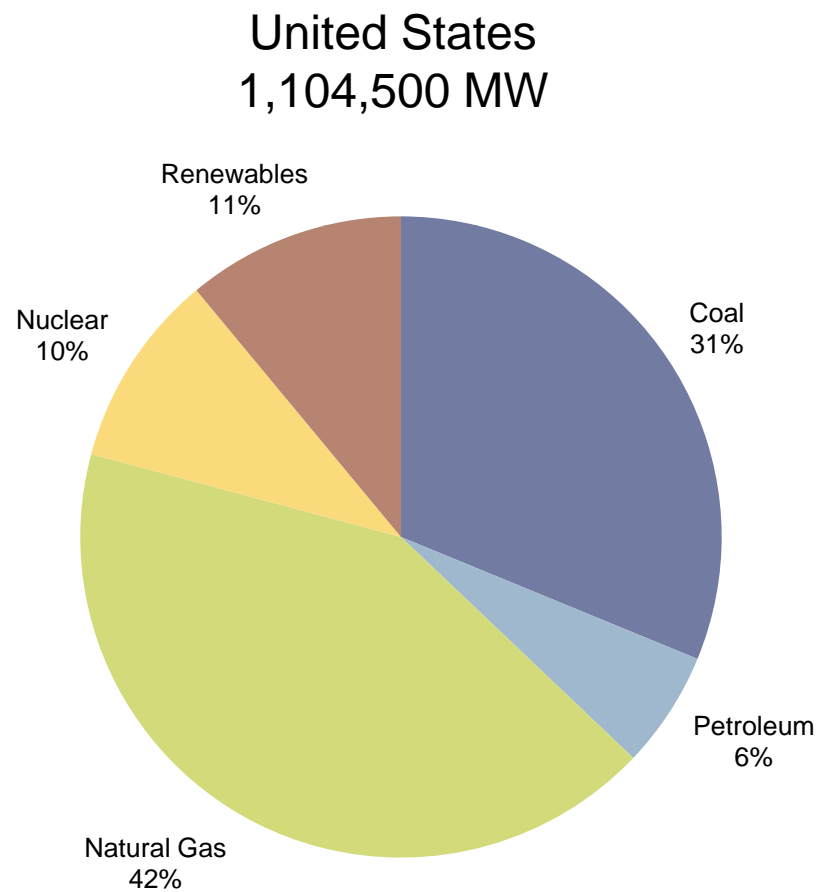
PSCW Role in Regulation of Electricity Industry

- Ensure that in the absence of competition, adequate and reasonably priced service is provided to utility customers:
 - Pre-construction approval of large generation and transmission projects
 - Approval of retail rates
 - Oversight of utility finance, structure, mergers
 - Oversight of energy efficiency and conservation programs

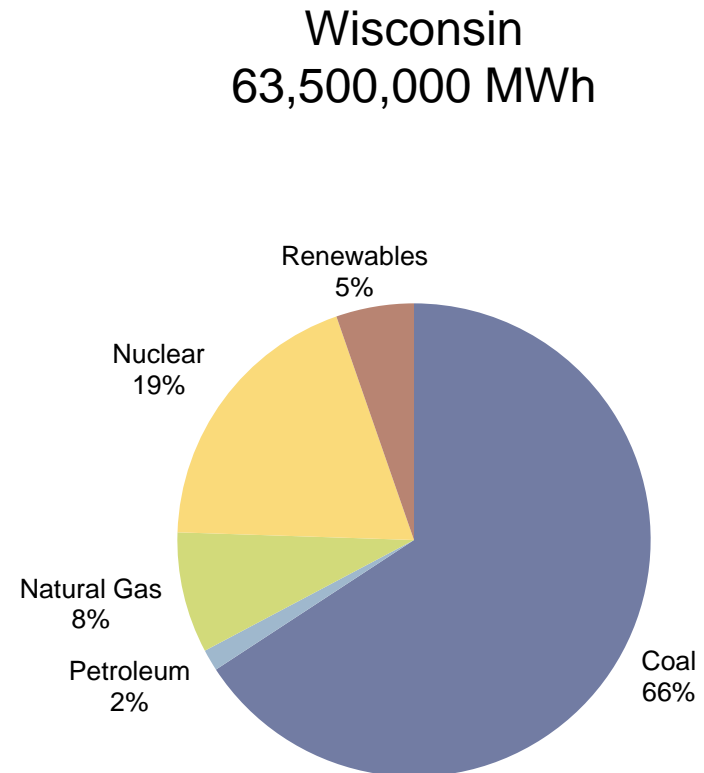
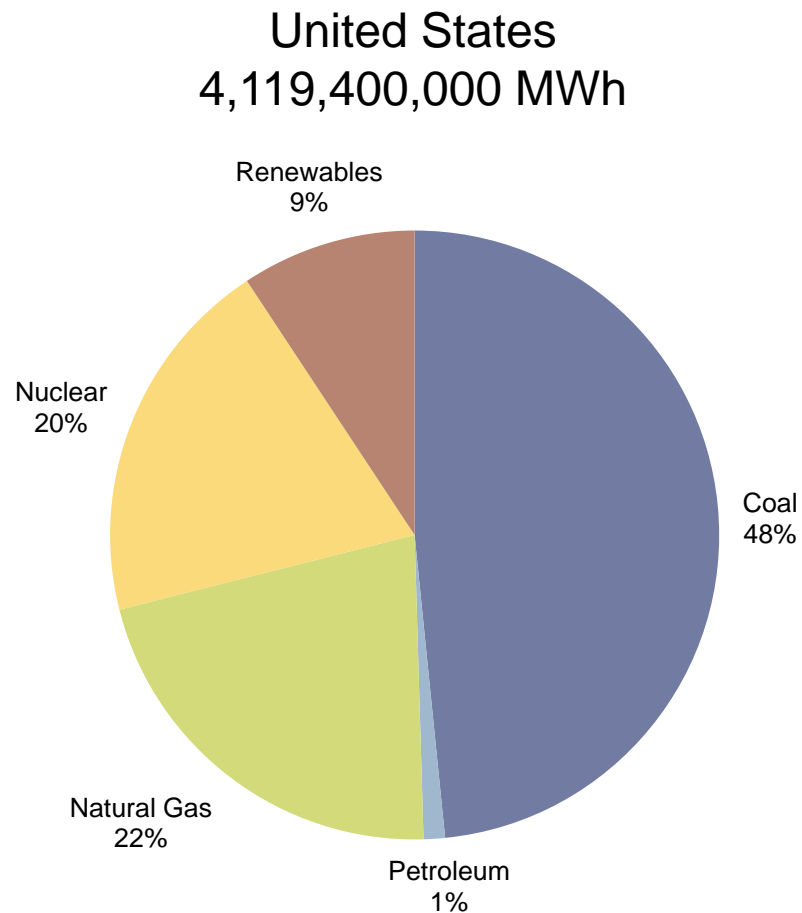
Generation in Wisconsin

- Generation assets owned by:
 - Local Distribution Companies (utilities and cooperatives)
 - Independent Power Producers
- Part of a competitive regional wholesale market spanning 11 states and 1 Canadian province – Midwest Independent Transmission System Operator (MISO)

2008 Installed Capacity



2008 Generation by Fuel Type



Why Does Wisconsin (Jordan) Have Energy Efficiency Programs?

- Investing in energy efficiency is cheaper than building and operating power plants
- Promotes local economic development and energy independence
 - Wisconsin has no oil, coal, or natural gas. All fuels are imported from other states or countries
 - Imported fuels (coal, natural gas, electricity) cost about \$6 billion in 2007
 - About 2.5% of Wisconsin's economy with no economic development benefits
- Competitive edge – energy efficient businesses are better able to compete with businesses from other states and countries
- Residential – real financial and comfort benefits to home owners
- Environmental – clear benefits
- Note – some of these benefits are at odds with one another

History of Energy Efficiency in Wisconsin

- How did Wisconsin establish its program? Not without some trial and error
- Utility provision of energy efficiency services in 1980's and 1990's – successes and challenges
- 1999 – Statutory creation of the statewide public benefits programs – *Focus on Energy*
 - Managed by the state's administrative agency
 - Third-party program administrators
 - Established funding level
 - Customer service conservation activities
 - Voluntary programs
 - Utility “ordered” programs

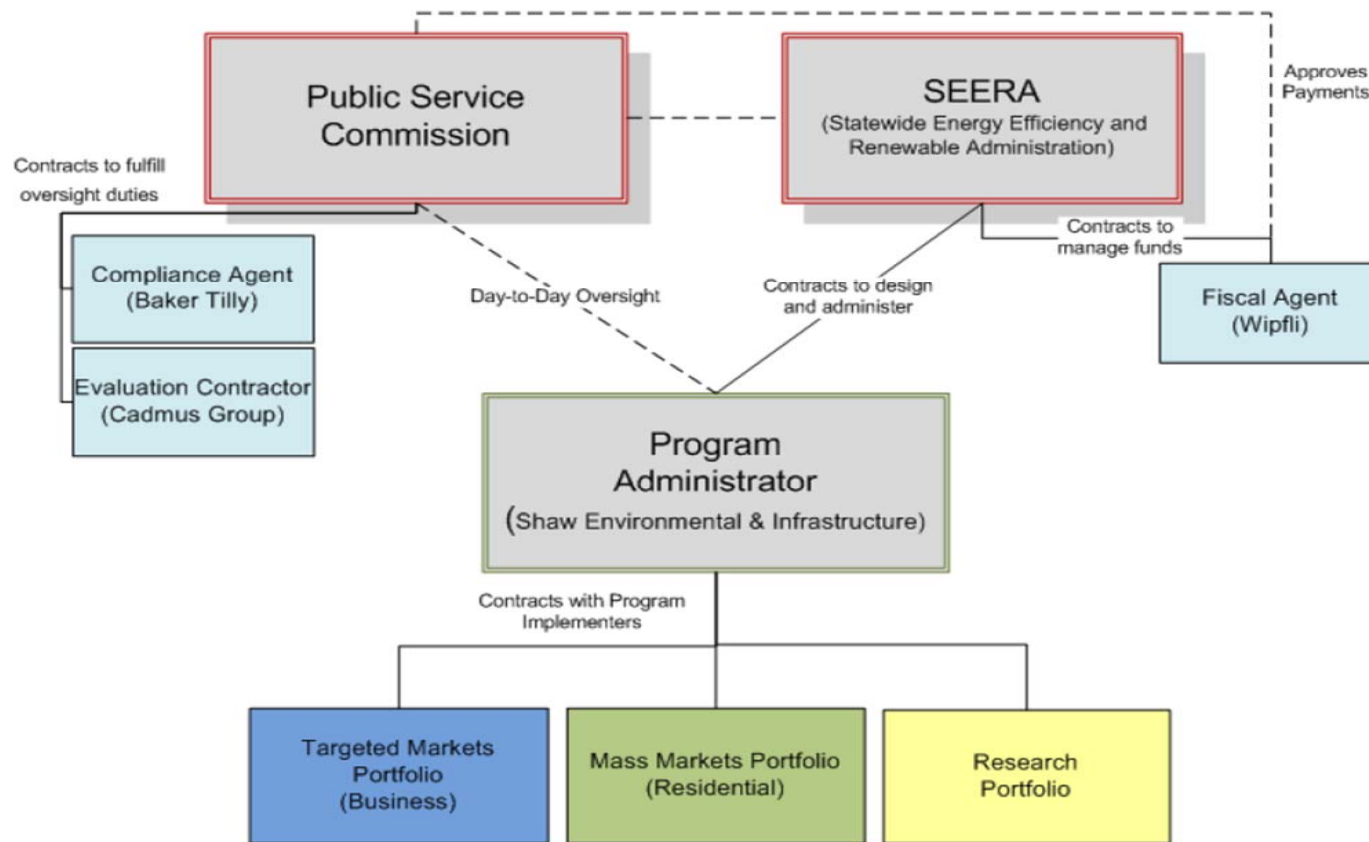
History of Energy Efficiency in Wisconsin

- Shift in direction - Wisconsin Act 141 – 2005
- Statutory Changes
 - Funding is set at 1.2% of IOU revenues and \$8/meter for munis/coops – firm funding
 - Utilities deposit funds in a private sector account protected from diversions – funding security
 - Overall administration moves to the PSCW which is also required to approve Program Administrator selection and contracts – state agency with more experience
 - Utilities contract with Program Administrator – true partnership with the state
 - Quadrennial Planning Process by PSCW – mandatory periodic program design review and opportunity to increase funding
- Current Program Status
 - PSCW oversight of the statewide program and all utility-run programs – energy efficiency, renewables, research
 - Statewide programs include opt-outs for utilities and large customers
 - 3 of the 5 major utilities have voluntary programs
 - Funding at \$100M per year
 - Pilot programs on rate design and decoupling

Wisconsin Energy Efficiency Achievements - 2010

- 2,796,978 kwh
- 516 MW
- 137,117,724 natural gas therms
- \$380,451,553 annual energy cost savings for Wisconsin customers
- Benefit cost ratio of 2.3:1
- Emission reductions:
 - 6.6 million pounds of carbon dioxide
 - 10.7 million pounds of sulfur dioxide
 - 41 pounds of mercury
- Statewide programs only – additional savings from utility-run efforts
- 91,000 businesses and 1.7 million residents have participated since its inception
- More than 3,000 trade allies currently partner with Focus on Energy

Focus on Energy Organizational Structure



Responsibilities – Regulator (PSCW)

- PSCW has oversight of the statewide energy efficiency and renewable programs which includes:
 - Review and approval of the program administrator(s) selected by the utilities
 - Review and approval of the contracts between the utilities and the program administrator
 - Contracting with an independent organization for an annual performance evaluation
 - Contracting with an independent organization for an annual financial audit of the statewide program fund
 - Requiring energy utilities to spend the required amount to fund the statewide program
 - Create and publish annual report
 - As needed and appropriate, managing certain day-to-day program activities – “oversight”

Responsibilities – Utilities (SEERA)

- Utilities' responsibilities include:
 - Creating and funding statewide energy efficiency and renewable energy programs
 - Selecting a program administrator(s) using a competitive bidding process
 - Contracting with the program administrator(s) to operate the statewide energy efficiency and renewable programs
- Key issue – division of responsibilities between utilities and regulator – “Memorandum of Understanding” addresses 5 areas:
 - Utilities' obligations
 - Regulator's obligations
 - Financial issues
 - Ownership
 - Communication

Responsibilities – Program Administrator (Shaw Environmental)

- Administrator for all three substantive programs (business, residential, and research)
- Duties include:
 - Contract Management
 - Financial Management
 - Incentive Payment Management
 - Quality Assurance and Quality Control
 - Tracking and Reporting
- May subcontract some of this

Responsibilities – Program Implementers (Many Companies)

- Program implementers deliver the services to the end-use customer
- Consulting, energy auditors, sales, installs
- Often the “face” of the program

Responsibilities – Fiscal, Evaluation, and Compliance

- Fiscal Agent (Wipfli) – Accounting firm that receives, distributes, and accounts for all funds
- Evaluation Agent (Cadmus) – Independent evaluation experts to quantify energy savings, determine cost-effectiveness, and estimate the economic and non-economic impacts of the program
- Compliance Agent (Baker Tilly) – Accounting firm that performs the annual financial audit of the program, the Administrator, and the contractors

Starting an Energy Efficiency Program - Goals

- Policy makers need to be clear about and prioritize what they want accomplished
 - Resource acquisition or market transformation?
 - System reliability? Delay building plants or power lines?
 - Emission reductions? Environmental goals?
 - Economic development?
 - Specific customer types targeted? Underserved customers?
 - Equity of service among customers?
 - Payment equity and structure?
 - As much as possible, policy makers should address “What the program should do” and not “How the program should do it.”
 - Note: these goals may be at odds with one another

Starting an Energy Efficiency Program - Design Elements

- 1) To be effective, programs need to be consistent and long-term (3-5 years):
 - Policy direction and priorities cannot change annually
 - Create metrics by which program success is measured and/or rewarded
 - Spend money upfront developing a baseline of energy use for the groups you intend to target
- 2) Educate customers and trade allies

Starting an Energy Efficiency Program – Design Elements

- 3) Develop a well-defined customer group with similar problems, sources of information, and behaviors and offer potential energy savings
- 4) Define a group of solutions (technologies or energy management practices) that are proven to deliver cost-effective, measurable and reliable energy savings
- 5) Identify the trade allies or contractors that sell these services or technologies to each defined customer group

Starting an Energy Efficiency Program – Design Elements

- 6) Identify or develop energy efficiency standards and apply them when they make economic sense
- 7) Enact and update codes to lock in savings and keep out low efficiency products
- 8) Offer both incentives and mandates for customers and trade allies
- 9) Employ independent measurement, verification, and evaluation

Lessons Learned in Wisconsin

- 1) Create a process to get you where you want to go, make it transparent, and follow it
- 2) Policy makers are the board of directors and should act as such – details should be left to the experts
- 3) Secure your funding stream
- 4) Understand what motivates a customer
- 5) Streamline your process
- 6) Get the utilities on board
- 7) Politics – understand the environment you're in

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