

Renewable Energy at Wisconsin Public Service

Wisconsin Renewable Portfolio Standard Planning Perspectives


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INTRODUCTION

- Wisconsin Public Service Corporation (WPSC)
 - ◆ Regulated Electric Utility
 - ◆ Primary industries are agriculture, forest products and manufacturing
 - ◆ 429,000 retail electric customers
 - ◆ About 148,000 live in rural areas
 - ◆ About 7,200 are Agribusiness customers (50% dairy with the rest split between crop, stock and specialty)
 - ◆ Provides wholesale power to three Rural Electric Coops



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Holding Company:



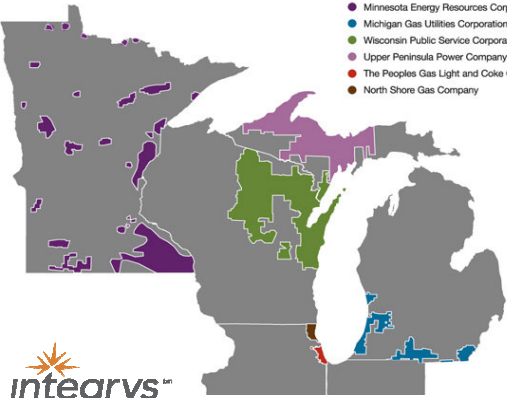
Regulated Subsidiaries:

- Public Service Wisconsin Public Service
- UPPCO Upper Peninsula Power Company
- MINNESOTA ENERGY
- MICHIGAN GAS UTILITIES
- PEOPLES GAS NATURAL GAS DELIVERY
- NORTH SHORE GAS NATURAL GAS DELIVERY



Nonregulated Subsidiary:



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- Minnesota Energy Resources Corporation
- Michigan Gas Utilities Corporation
- Wisconsin Public Service Corporation
- Upper Peninsula Power Company
- The Peoples Gas Light and Coke Company
- North Shore Gas Company



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Wisconsin RPS – Act 141

- Goal of state to reach 10% renewable generation (as percent of retail sales) by 2015
- Add 6% above 2001, 2002 and 2003 baseline renewable generation
- +2% in 2010; +4% in 2015
- Credits can be banked for 4 years



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WPSC Mission

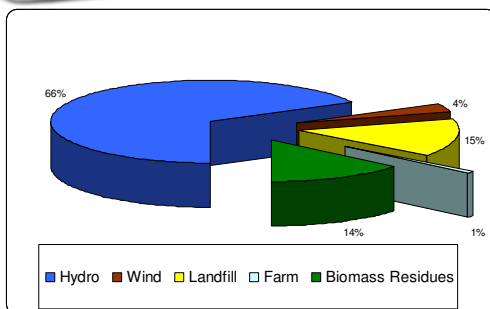
Provide our customers with the best value in energy and related products and services.

Our mission influences and shapes how we select our renewable supply portfolio



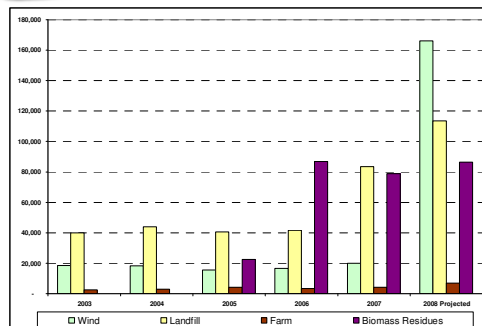
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WPSC Renewable Mix 2007



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WPSC Renewable Portfolio (Non-Hydro Electric Facilities in Megawatt-hours)



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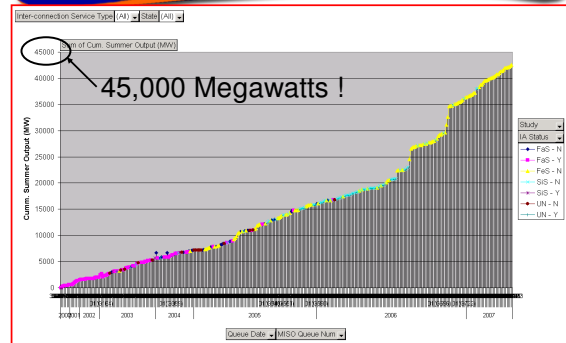
WPSC RPS Compliance Future

- Will pursue utility-scale wind projects as a “foundation” for compliance
 - ◆ Must assess value of wind resource versus the deliverability risk in interstate markets
 - ◆ Wind resource is better in Minnesota and Iowa,
 - But...transmission capacity to deliver energy is a growing concern
 - ◆ In the future, RPS standards and lack of transmission capacity could drive utilities to more distributed (but more costly) local resources in Wisconsin



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March 2007 Midwest ISO Wind Projects in Queue



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RPS Compliance Future (Cont'd)

- Continue to build the distributed portfolio, i.e. digesters & landfill gas
 - ◆ Landfill projects in limited supply
 - ◆ On-Farm anaerobic digestion
 - Technology has improved substantially
 - Financing and cost of construction & operation remain factors in growth of market
 - Product gas cleanup – direct injection into natural gas distribution beginning to emerge
 - Will RPS standards be structured to capture value as a green fuel to produce renewable power to meet mandates?



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Scenic View Dairy, Fennville, MI

- 2,200 Head of Cattle
- Initially:
 - ◆ Two, 870,000 gallon digesters
 - ◆ Two 350 KW Caterpillar Engines
 - ◆ Electricity sold to Consumers Power
- 50% expansion & Biogas Product Upgrade System
 - ◆ With syrup stillage from EtOH plant 470,000 cft/day biogas production
 - ◆ 75 cft/min of natural gas sold to Michigan Gas Utilities (owned by Integrys Energy)

Source: *Biocycle* http://www.jgpress.com/archives/_free/001420.html



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Voluntary Renewable Programs



NatureWise Goals

- Meet WPSC Customer Needs
- Partner with Renewable Suppliers
- Practice Strong Environmental Stewardship and Leadership
- Implement "Market" Approach



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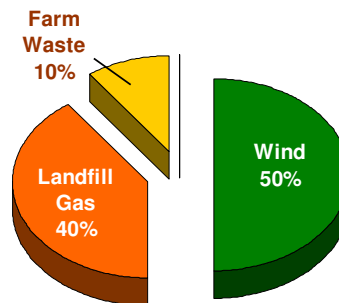
Product Description

- Product
 - ◆ Electricity generated from renewable energy resources
 - ◆ 100-kWh monthly blocks
- Current Price for WPSC customers
 - ◆ \$1.00 premium per block per month
- Customer demand driven
 - ◆ e.g. if customers demanded higher mix of farm-based resources (at cost to secure) this would directly support farm-based resources



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NatureWise Supply Mix



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