

Renewable Energy at Wisconsin Public Service

Wisconsin Renewable Portfolio Standard Planning Perspectives


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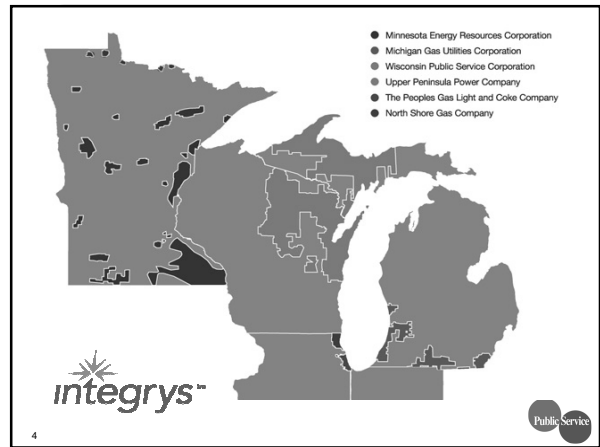
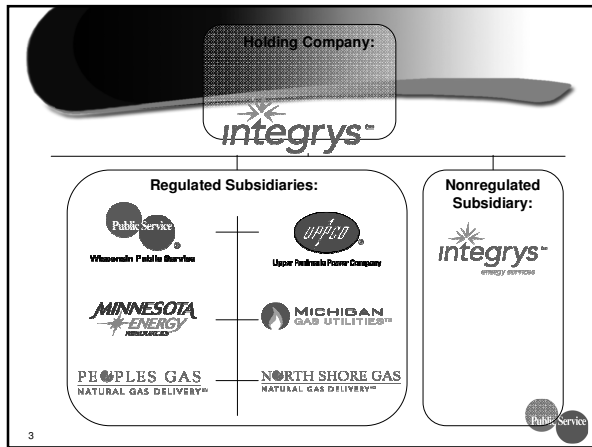
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PRODUCTION

- 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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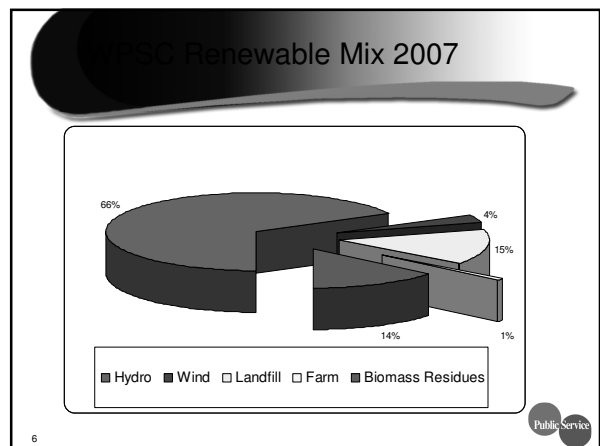
WPSO Mission

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

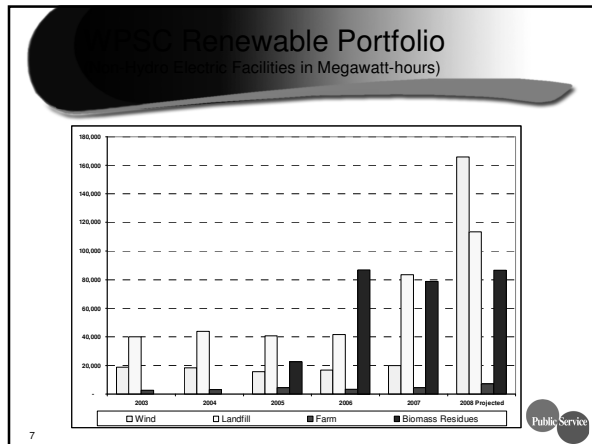
Our mission influences and shapes how we select our renewable supply portfolio



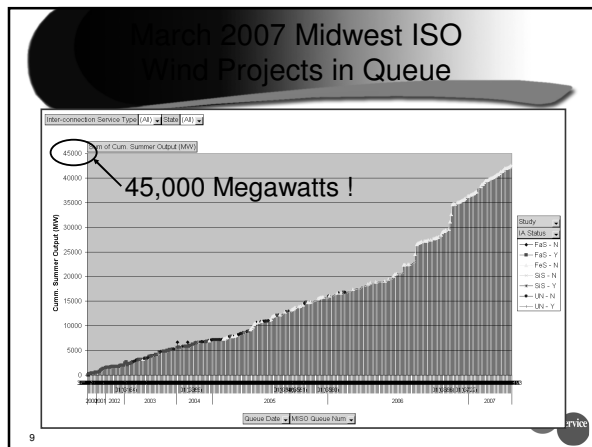
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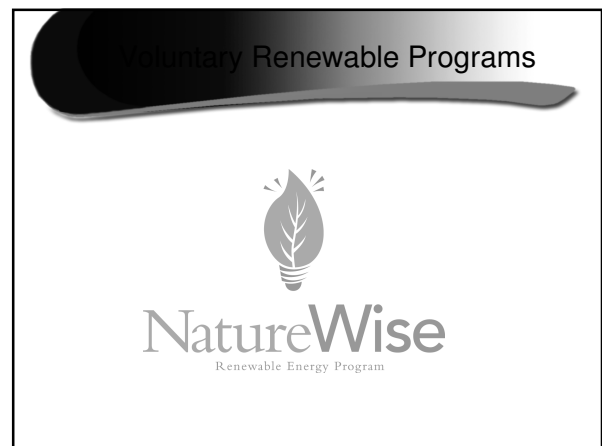


- ## ISO RPS Compliance Future
- Will pursue utility-scale wind projects as a “foundation” for compliance
 - ◆ Must assess value of wind resource versus the deliverability risk in interstate markets
 - ◆ Wind resource is better in Minnesota and Iowa,
 - But...transmission capacity to deliver energy is 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



- ## ISO 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?

- ## 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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Program Goals


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



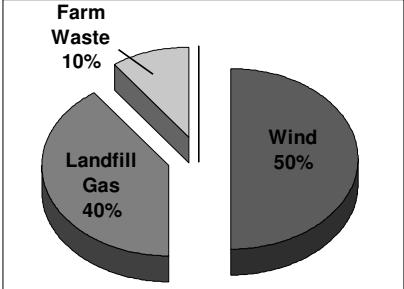
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Product Description


- 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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Program Supply Mix



Source	Percentage
Wind	50%
Landfill Gas	40%
Farm Waste	10%

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Thank You

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