

Beaver Dam: A Plan Toward Energy Independence, Savings & A Bright Future

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Energy in Wisconsin

• 150 Energy Independent Communities

Energy Independence:

Generate 25% of WI power and transportation fuels from renewable resources by 2025



Process

- Collect energy bills from Alliant Energy
- Collect fleet fuel records from Kwik Trip
- On-site assessments of buildings, street lights, fleet
- Analyze solar potential of city buildings & land
- Analyze other renewable energy sources solar fields
- Meet with Energy Independent Community Team
 - ID potential energy efficiency projects, costs + savings
 - Review renewable energy options, costs + savings
 - Establish decision-making criteria
 - Prioritize EE & RE options
 - Formulate plan







Discoveries

Energy Use by Expenditure

- Beaver Dam spends over
 \$1million annually for Energy for city operations
 - Electricity is ¾ of that cost \$826,000
 - Heat \$191,400
 - Fleet \$136,300

Energy Use by Fuel

Electricity is 52% of energy use Natural Gas 36% Fleet Fuels 12%



Discoveries

- Waste Water Treatment Plant is central to energy independence
 - Generates 25% of its energy use currently
- **Street lights** are an opportunity for energy savings:
 - \$240,00 investment with 3.3 year payback
- Watermark Community Center is the most efficient city building
- Small hydroelectricity generation is not a feasible renewable energy option

Projects: WasteWater Treatment Plant

- Largest municipal energy user
- Has comprehensive energy study UW-M
- Generates 25% of its energy use from biogas available to city in 2020



Waste Water Treatment Plant



Grant funds for energy efficiency upgrades

Blowers - 900,000 kWh savings = 10% all city

Projects: Municipal Building

- \$62,000 grant for solar from Focus on Energy
- Solar will offset 48% of current electric use
- Energy efficiency upgrades will return more \$\$ savings as phased in
- Office of Energy grant recipient: \$257, 879 Total project amount \$299, 675 Boiler replacement and addition of controls









Projects: Watermark Community Center



67.5% Solar Offset to electricity Nearly \$12,000 annual savings From ~\$19,000 to \$7,000

Beaver Dam Energy Independent Community Goals

- Produce 25% of energy needs from renewable energy locally by 2020, and 35% by 2025
- Convert 50% of street lights to LED by 2025; 100% by 2030
- Upgrade Interior lighting: 50% by 2020; 100% by 2025
- Reduce building energy use 10% by 2018; 20% by 2020; 30% by 2025

Waste Water Treatment Plant Solar Field



Value Proposition

Energy Saving Economics

- Efficiency = \$ saved
- Competitive advantage
- Branding / marketing
- Improved health
- Retains \$ in local economy (7x roll over)
- Creates jobs
- Risk Management / Resilience
- Cleaner environment air, H20, soil, GHG reduction





ECOLOGY & GREEN ENERGY