



# Energy Independent Communities: 25x25 Plan Grants Pilot Presentations 4<sup>th</sup> Quarter Report

Marty Anderson, Chair, Sustainable Marshfield Committee  
City of Marshfield  
Green Bay, WI  
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# City Of Marshfield Energy Independence Team

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## What was measured? Why?

- Municipal buildings, infrastructure, and fleet
- 2006-2008
- kWh, therms, cost, gallons of fuel, miles traveled, vehicle type & year
- Marshfield Utilities, WE Energies, City Staff



# City of Marshfield Energy Independence Team

## Discoveries/Surprises

- Of the City's energy use, 48% is from electricity
- 40% of consumption is by buildings
- 77% of the City's CO<sub>2</sub> emissions are from electricity

2008 Energy Baseline	Energy Use (MMBtu)	% Usage
Buildings	19,592	40%
Outdoor Lighting	6,192	13%
Water	10,630	22%
Fleet	12,628	26%
Total Usage	49,041	**
Total Cost	\$865,709	

\*\*The sum of percentages does not total 100% due to rounding.



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## Total Projects Considered (a list)

- Committee Broad Brush List-both renewable and energy reduction
- Refined to a specific list

Renewable	Energy Reduction
Geothermal @ Fire Station	Swimming Pool Cover
Geothermal @ Library	Bi-fold Doors @ Fire Station
Geothermal @ City Hall	Convert Fleet to Hybrid
Solar @ Library	Tree Plantings
Solar @ City Hall	Streetlights to LED
Solar-hot water @ Fire Station	Natural Landscaping @ Fire Station & Library
Solar-battery recharge @ Fire Station	EECBG Projects
Wind Farm	
Solar @ Zoo	
Solar @ Swimming Pool	
Convert to biodiesel	
Purchase renewable electricity	



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## Projects Selected – Explanation

### Option 1: Strong likelihood

Purchase 25 percent renewable electricity

Geothermal at Fire Station

Geothermal at Library

Solar collector at Library

Solar at Fire Station-hot water

Solar at Fire Station--battery recharge

Bi-fold doors at fire station

Tree Planting

Natural Landscaping

Geothermal at City Hall

Solar at Hefko Pool

Convert fleet to biodiesel

EECBG Projects

**Meets 25 by 25**



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## Projects Selected – Explanation

### Option 2: Lower likelihood, but goal to strive for...

Reduce amount of renewable electricity purchased to 0 and add our community wind farm to option 1

**Outcome would be exceeding goal by 2.5 fold.**



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## Potential Renewable Feedstocks

Wind—Met tower currently being explored; will determine feasibility

Solar—Definitely a resource to utilize

Biogas (landfill, agriculturally-based)

- Ethanol (Necedah plant) and biodiesel
- Methane—Marshfield is located in the largest most concentrated area of dairy farms in the state with over 10 CAFO's in the immediate area

Biomass (wood, prairie grasses, other)

- Residues from food product manufacturers
- Unused primary mill residues—Wood County has the highest dry tons available in the state
- Primary & secondary wood product manufacturers—moderate concentration

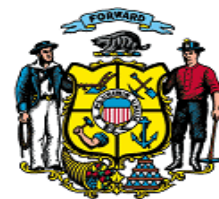
Hydro—Not an option



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## Existing Unknowns: Necessary Information for Future

- Windfarm—Met tower and feasibility
- Feasibility of medium size methane digesters
- Need more information on biofuel stock availability—could open new doors to projects not identified in the plan
- Future political climate
- Funding for projects
- Engineering studies on projects



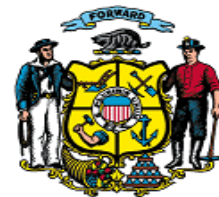
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## Action Steps – Immediate & Long – Term

### Include:

- Specific Project Implementation—Timeframe, Responsible Party, Cost
- Education & Outreach
  - Initiate a “Sustainability Corner” on City website
  - Continue successful Green Living & Energy Expo
- Internal City Operations
  - Implement Energy Star Portfolio Manager
  - Implement a cross department sustainability team
- Annual updating of this plan





# City of Marshfield Energy Independence Team

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## Energy Independence Team Members

### Sustainable Marshfield Committee

- Marty Anderson, Chair
- Georgette Frazer
- Sue Meyer
- Gordie Earl (Council Member)
- Carl Scott
- Michelle Adamski
- Randy Lueth

### City Staff

### City Council

### UW Extension

### MSA Professional Services, Inc.





# City of Marshfield Energy Independence Team

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## Additional Comments, Observations, Recommendations

- Draft Plan—will be reviewed by SMC, then Council will formally adopt in January
- Data and projects will be refined over time, but definitely gives direction

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