

2009

**Wisconsin Energy Independent
Community Partnership**

25 x 25 Plan for Energy Independence

Town of Fairfield

Issue Date: December 21 , 2009

Wisconsin Office of Energy Independence

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Overview

Introduction to the Energy Independent Community Program



The Wisconsin Office of Energy Independence (OEI) administers energy programs to assist Wisconsin to profitably and sustainably promote energy efficiency and renewable energy resources. The goal of the Wisconsin Energy Independent Community Partnership administered by the OEI is to effectively increase energy independent assessments for Wisconsin communities. Currently, there are many communities across the State of Wisconsin interested in implementing and adopting renewable energy and energy efficient projects. This program assisted 10-15 communities that could be potential pilots or models for completing an energy independence assessment, allowing the community to then move forward with energy efficiency and/or renewable energy projects.

Definition

- Energy Independent Community (EIC) – a community that is willing to set a goal of “25 by 25”¹ to increase our energy independence, and promote a sustainable energy policy for the State of Wisconsin

Objectives

The objectives of the Wisconsin Energy Independent Community Partnership are to:

- Increase the use of renewable energy and renewable fuels by 25% by 2025 in across the State of Wisconsin.
- Increase and promote public awareness regarding the benefits of increased energy conservation, energy efficiency, and renewable energy use by counties and municipalities around the state. These benefits include and are not exclusive to: clean air and water, intelligent land management, rural and urban economic development, as well as state and national energy independence.

Eligible Participants

Applicant must be a Wisconsin county, city, village or town that has shown willingness to improve the community’s efforts related to energy conservation, efficiency and potential renewable opportunities. Applicants, if they are responsible for their own municipal water, sewer, or electrical system, must be in compliance with all appropriate state and federal regulations.

¹ The community will source 25% of its energy from renewable sources by 2025.

Introduction to the Town of Fairfield Energy Independence Initiative

History

Fairfield is a small town in Sauk County, Wisconsin. Although the Town's population is only 1,071² people, the Town has a long legacy of being a leader in innovative community planning, especially at the town level.

Recent planning efforts have included an independent zoning plan, adopted in 1995 and the 2005-2025 Comprehensive Plan, adopted in 2004. In addition, the Town has developed a Planning and Zoning Review Board (one of a handful of Towns that work independently from their County Planning and Zoning Board) in order to be more directly involved with the facilitation of the Comprehensive Plan.

These planning efforts are coupled with, and enhanced by, two nationally-revered environmental organizations, located within the Town of Fairfield: the Aldo Leopold Foundation and the International Crane Foundation.

Recently, the Town of Fairfield created an Energy Independent Team and adopted Wisconsin's 25x25 goal, thus merging the Town's proud history in planning and community advocacy with these esteemed organizations' passion and commitment to sustainability. The Energy Team is comprised of representatives from the Aldo Leopold Legacy Center and the International Crane Foundation, as well as elected town officials, a representative from the Adams-Columbia Electric Cooperative, a community development specialist from the University of Wisconsin Extension, and residential and business representatives.

Priorities

The Energy Independent Team began this planning process by establishing three broad-based priorities, and some associated action steps. These goals and actions have been refined throughout the planning process, and the list below merely demonstrates the goals and objectives with which the Energy Team began the process. The remainder of this Plan documents how the Energy Team took these preliminary "big picture" priorities, and created a strategic plan that will fulfill the Town of Fairfield's 25x25 commitment.

The preliminary priorities for the Town of Fairfield Energy Independent Community Initiative are:

- **Reduce energy consumption for the Fairfield Town Hall and School.**
 - Reduce energy consumption for the Fairfield Town Hall and School through energy efficiency and conservation measures
 - Source 25% of the energy consumed at the Town Hall and the School from renewable sources
 - Reduce net heat and electric consumption for the Fairfield Town Hall to net zero
- **Reduce the energy consumption for all Town residents (includes non-profits and farm businesses)**
 - Help Fairfield residents reduce their energy consumption through conservation and efficiency measures, beginning first with educational measures and perhaps leading to other types of assistance in the future
 - Encourage the Town of Fairfield to extend its 25x25 Initiative to all Town residents and businesses.
- **At least 10% of the fuel utilized for municipal use by the Town of Fairfield will come from biofuel sources by 2030.**

² Wisconsin Department of Administration 2008 estimate

Action Steps

The Energy Team also drafted some preliminary action steps with which the Town could pursue its three “big picture” goals. As with the preliminary goals, these actions steps have been further defined and honed throughout the process; specific action steps may be found in the **Action Steps – Immediate & Longterm** section of this plan.

- **Conduct baseline energy assessments for Fairfield Town Hall and Fairfield School**
 - Quantify current and past energy usage for the Fairfield Town Hall and the School
 - Quantify fuel/energy use for Town road maintenance, including contracted vehicles
 - Identify the top ten energy users in the Town of Fairfield
- **Determine the renewable energy resources available for the Town of Fairfield**
- **Develop educational programs to help private residents and businesses reduce energy consumption**
 - Create a demonstration site for renewable energy fuels and technologies
 - Host energy fairs to promote the latest energy-efficiency, energy conservation, and renewable energy techniques and technologies
- **Incorporate energy conservation and renewable energy policies into existing plans and regulations**
 - Review and adopt new Town ordinances to allow and encourage energy-efficient building design and renewable energy generation
 - Incorporate the 25x25 goals into the Comprehensive Plan

The subsequent sections of this Plan provide more detailed information on how the Energy Team has worked to cultivate these preliminary action steps into a strategy that could be both financially and logistically feasible for the Town of Fairfield.

What was measured? Why?

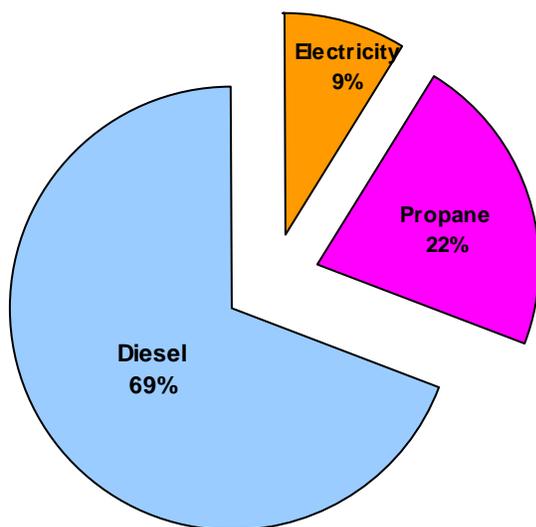
The Town of Fairfield wanted to examine the two largest emitters of green house gases—vehicles and buildings—when determining our baseline energy consumption. Currently, municipally-owned operations for the Town are limited to just the Town Hall. As mentioned before, there is also an elementary school located within the Town of Fairfield; however, the District plans to sell the school within two years. Because the school is simply being used for storage for the School District, the building was not included in the baseline analysis and for the purpose of this Plan, the Town of Fairfield’s only municipal building is the Town Hall.

Because the Town contracts with Sauk County for all municipal vehicle-use, information for one mower/tractor is included in the baseline (this is assumed to be equivalent to the portion of the Sauk County fleet which is used by the Town of Fairfield). All of the diesel fuel included in the Town of Fairfield’s baseline is from the services the Town contracts with Sauk County. This includes snow plowing, mowing, and general maintenance and patrol.

Several metrics were used to establish a baseline:

- Type of energy consumed
- Amount of energy consumed
- Total consumption by end use
- Total CO2 emissions by energy type

Figure 1: Total Consumption by Energy Type



In 2008, the baseline energy usage for the Town of Fairfield was **201 million Btus (MMBtus)**.

This baseline was comprised of the following:

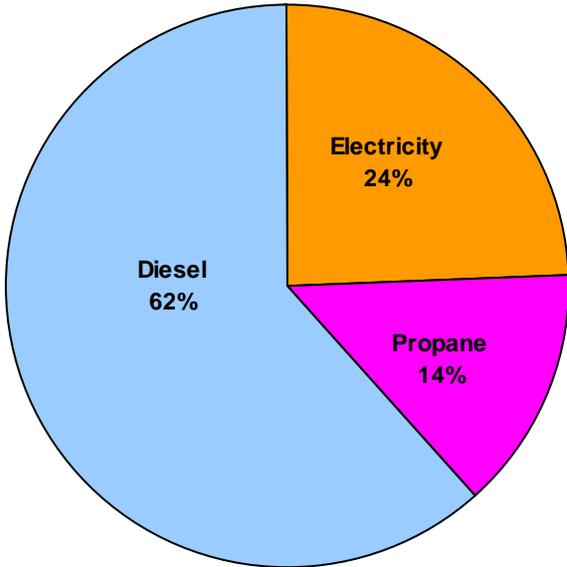
- 5,227 KWh (electricity)
- 440 therms (propane)
- 0 gallons of gasoline
- 1,001 gallons of diesel

Because the Town Hall is Fairfield’s only municipal building, the majority of the energy consumption was from vehicular use. Indeed the Town Hall accounted for only 32% of the total energy consumption. Because the Town does not maintain

any vehicles, it is surprising that vehicular use makes up such an overwhelming proportion of the Town’s baseline energy consumption. It is important to note that vehicular use seems to dominate the Town’s baseline because the Town Hall uses so little energy. In general, the Town of Fairfield has low levels of energy consumption.

In today’s society, energy consumption and greenhouse gas emissions are unfortunately, inextricably linked: the more fossil fuels consumed, the more greenhouse gas emitted. The amount of carbon dioxide emitted from the consumption of energy is proportional to fuel consumption. Different types of fossil fuels emit different amounts of carbon dioxide: coal has the highest carbon content, and natural gas has the lowest.

Figure 2: Total CO2 Emissions by Energy Type



In 2008, the Town of Fairfield municipal operations produced 36,384 lbs of CO2.

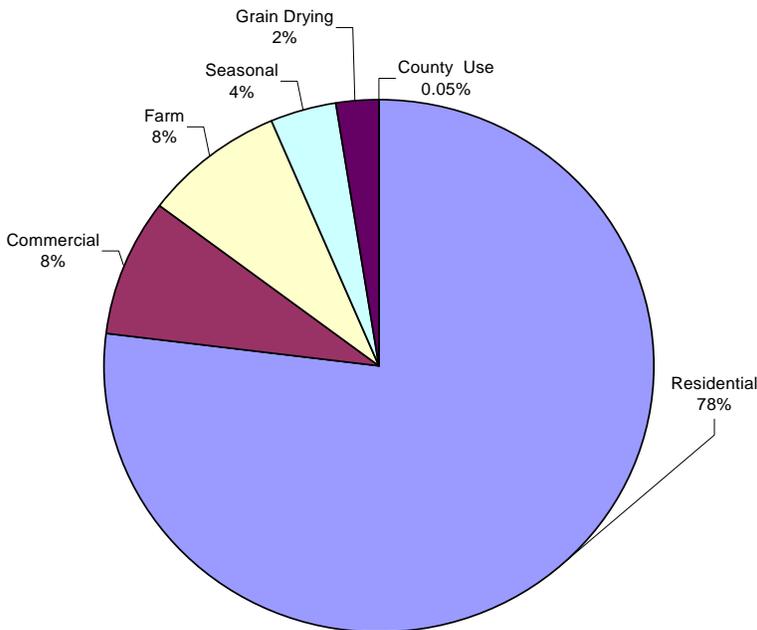
- Electricity – 8,844 lbs CO2
- Propane – 5,148 lbs CO2
- Gasoline – 0 lbs CO2
- Diesel – 22,392 lbs CO2

Obviously, the Town of Fairfield municipal operations are not a large consumer of energy. Because the Energy Independent Team firmly believes that the

25x25 resolution is applicable beyond the boundaries of municipal government and because the Energy Independent Team wants to ultimately enlarge the potential project possibilities, we chose to include all of the energy consumed by buildings within the Town. For more information on how the Town is considering including all energy consumers in the 25x25 goal, please see the section on **Action Steps – Immediate and Long-term.**

The Town lies within the service area of the Adams-Columbia Electric Cooperative and Alliant Energy.

Figure 3: Town of Fairfield Electricity Usage by Type of Facility



The Town of Fairfield (all users) consumes 5,527,482 kWh of electricity, more than 1,000 times the total Town government usage. This 18,860 MMBtus produces more than 9,352,500 lbs of CO2. Residential uses account for almost 80% of this consumption.

It is easy to see why targeting the 25x25 goal to all Fairfield users will result in a much greater reduction in energy and greenhouse gas production than simply targeting the municipal operations. In addition, by including all energy consumers, the Town will have more opportunities for creative funding mechanisms, and more financial leverage.

Discoveries/Surprises

As with any planning process, there are always challenges, opportunities, discoveries, and surprises. The Town of Fairfield recognizes that it is uniquely positioned to be a model of how renewable energy resources can be embraced within a small, rural setting, and is therefore striving to capitalize upon the opportunities available. While we strive to be a leader in renewable energy consumption and production, we also realize that we must work within the boundaries of our size and available resources.

Challenges

The Town of Fairfield is a rural municipality that lacks staff and monetary resources. There was an initial challenge to motivate the political will of the Town towards adopting the 25x25 goal, and there was a subsequent challenge to get the Energy Independence Team to recognize the benefit of the data outputs that are being produced by the Energy Center and Focus on Energy.

Because of the Town of Fairfield's small size, deciding what to include in the baseline was also a challenge: in reality, the only energy consumer that the Town has sole control over is the Town Hall; however, the Town does contract other services with the County, so it seemed appropriate to include data from the County vehicle fleet. This will pose an ongoing challenge for the Town, as including some County operations will make it more difficult for the Town to achieve our 25x25 commitment.

There is, and will be, an ongoing challenge to figure out creative funding mechanisms to enable the Town to install renewable energy technologies. This specific challenge, and some possible solutions, is detailed in the **Action Steps – Immediate and Long-term** section of this Plan.

Opportunities

The Town of Fairfield has two world-renowned environmental organizations located within our municipal boundaries: the Aldo Leopold Foundation and the International Crane Foundation. The presence of these environmental organizations provides the opportunity for the Town of Fairfield Energy Independence Initiative to become an exemplar for how municipal government and non-profits organizations can partner and collaborate in order to finance and implement energy efficiency and renewable energy measures.

In addition, many of the residents who were willing to be involved with the Energy Independence process have extensive experience in conservation and energy efficiency. The Town has a successful history in innovative planning, and the Town views the 25x25 process as a stepping stone to increasing the energy efficiency and renewable energy production for the entire Town, not just municipal operations.

Discoveries

As the Town of Fairfield moved through the prescribed model EI community process, there were several immediate discoveries:

- The Town does not have the layers of bureaucracy that a larger municipality has
- Because of our minimal operations, the Town does not have as much data to collect
- Based upon the community survey, Town residents overwhelmingly supported the 25x25 Initiative

At first glance, these discoveries may seem like opportunities for the Town; however, as the Town moved through the process, we discovered that our small size can be a benefit, but also a drawback: because the Town has minimal energy consumption, there are minimal infrastructure improvements that will result in substantive energy savings. This has led us to the conclusion that in order to be a leader in renewable energy and energy efficiency, the Town of Fairfield will need to strategically partner with citizens, organizations, and other municipal governments.

Surprises

As the 25x25 process unfolded, there were four surprises for the Town of Fairfield:

- The Town Hall and the School are already very efficient
- Because the Town Hall consumes very little energy, the vehicular use that the Town contracts from Sauk County accounts for an overwhelming portion of the energy consumed.
- The School District plans on selling the Fairfield School within the next two years, so it is not a viable option for improvements, and has been removed from the baseline.
- It is very difficult to develop cost effective renewable energy projects within the typical no-frills town government structure.

When Focus on Energy conducted their walk-through energy audit of the Town Hall, there were no obvious “low-hanging fruit” to make this relatively new facility more energy efficient. The secondary Town facility was the Fairfield School. Focus on Energy recommended a couple of small projects that the School District has already implemented. The Town then found out that the School District plans on selling the building within the next two years, leaving the Town Hall as the sole municipal building.

Without any obvious “low-hanging fruit” the Town is realizing how difficult it can be to find funding sources. The Energy Team is exploring many different creative funding mechanisms including partnering with strategic government and non-profit partners in order to continue the Town’s 25x25 Initiative.

Because the baseline analysis revealed that vehicular use, contracted with Sauk County, dominates the Town’s energy baseline, it is apparent that the Town must continue to encourage the County to increase the sustainability of its vehicular fleet.

Total Projects Considered

- **Photovoltaic array for the Fairfield Town Hall**

Install a 22 Kyocera KD 210 (watt) GX-LP panel fixed-tilt array on a UniRac roof-mounted system on the Fairfield Town Hall.

It is estimated that this project will cost \$36,2000 (in 2009 dollars). Currently, Focus on Energy would provide approximately \$11,256 in financial incentives. This project would generate approximately 5,628 kWh per year. The Town Hall only consumes 5,227 kWh per year, so implementing this project would effectively make the Town Hall carbon netrual in terms of electrical consumption. In general, this PV array would have a life span of approximately 35 years.

- **Solar hot-water system to assist the current LP heating system at the Fairfield Town Hall**

Install three 4x10' flat plate solar hot water collectors, and a 120 gallon solar storage tank at the Town Hall.

It is estimated that this project will cost \$24,290.00 (in 2009 dollars). Currently, Focus on Energy would provide approximately \$4,372.50 in financial incentives. This project would save the Town approximately 43% of the propane currently used to heat the Town Hall.

- **Convert fleet vehicle to biofuel**

Replace the Sauk County tractor that is used for maintainence in the Town of Fairfield with a Ford/New Holland t16020 tractor and mower to be operated using 100% biodiesel (B100) fuel.

In 2009 dollars, this would cost \$46,500. Purchasing a t16020 tractor would effectively remove at least one diesel tractor from the County's fleet.

Potential Project Timetable

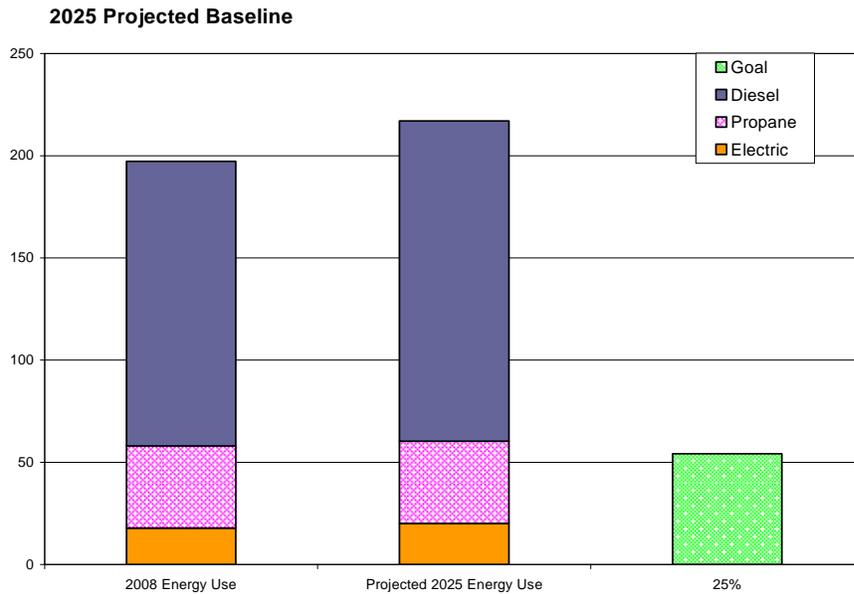
Because the Town of Fairfield is a small municipality, it is appropriate to only examine these three potential projects³. Even with only three potential projects, there are variables that will determine if the Town will be able to meet our 25x25 energy goals: these variable may include **which** projects are implemented and **when** the projects are implemented. The following table shows the proposed phasing of the three potential projects. As mentioned before, the Town of Fairfield does not have the capital resources to implement any of these projects immediately. For the purpose of this Plan, we are assuming that the PV array would be slowly phased in, adding panels every five years beginning in 2012. The other two projects would be completed in 2018 and 2020. As we will discuss in the **Project Selection – Explanation** section of the Plan, it may not prove feasible to implement the potential projects on this timeline; however, this is the timeline that was used for the Energy Center’s analysis that is found in the following section **Pathways to 25x25**.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Install PV array on Town Hall			25%					50%					100%				
Install solar hot water assist on Town Hall									100%								
Replace tractor/mower with a biofuel vehicle											100%						

³ Note: all of the analyses contained in this section only examine the energy consumption from municipal operations.

Pathways to 25 x 25

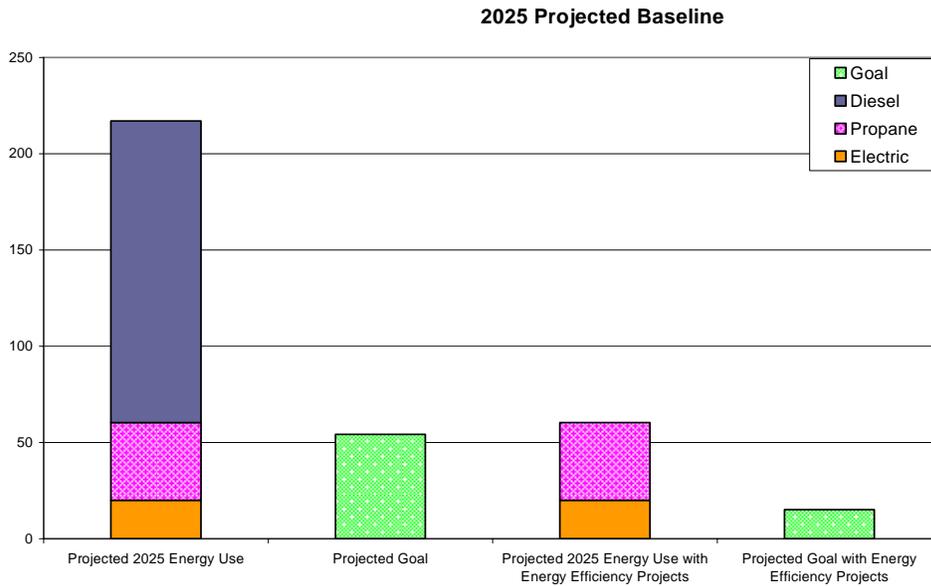
As shown in the section **What was Measured? Why?**, the Town of Fairfield has a baseline 2008 energy usage of 201 MMBtus. For this analysis we assumed an overall annual growth rate of 0.7%. This represents the population growth rate for the Town of Fairfield discounted by the percent of energy attributable to buildings. With an annual growth rate of 0.7%, the Town of Fairfield will have a baseline energy consumption of 226 MMBtus in 2025. In order to achieve the Town’s 25x25 commitment, we would need to source and/or reduce energy consumption by 57 MMBtus. This translates into 16,577 kWh or 566 therms or 407 gallons of diesel or some combination of these fuels.



The above chart shows the 2008 energy baseline and the 2025 projected baseline if the Town were to continue its current patterns: it assumes that we will not implement any of the proposed projects.

Of the three potential projects, two of the projects are classified as **Renewable Energy** projects: the PV array and the solar hot water-assist project. The third project, replacing the diesel vehicle with a biofuel vehicle, is considered an **Energy Efficiency** project, because it effectively eliminates the amount of diesel consumed by the Town. Energy efficiency is often considered the “first fuel” because increasing our energy efficiency is widely acknowledged as the fastest, cheapest, cleanest way to meet our future energy needs.

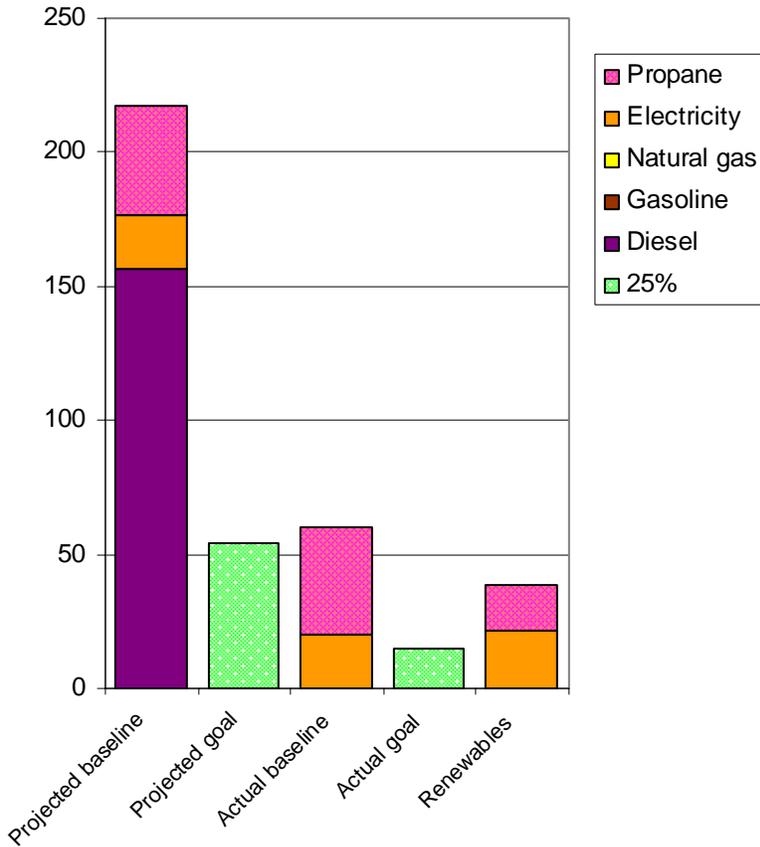
If the Town of Fairfield replaces the diesel vehicle with a biofuel vehicle, it would drastically change the 2025 baseline projection, thereby requiring the Town to generate significantly less energy from renewable sources in order to meet our 25x25 goal. The following chart demonstrates the power and practicality of addressing energy efficiency first.



In addition to variables such as project timing, there are variables that are beyond the control of the Town of Fairfield, specifically the Wisconsin Renewable Portfolio Standards. The WI RPS currently mandates that 10% of all energy generated within the State is sourced from renewable sources by 2015. There is much discussion that the State may increase the RPS to 25%. As such, we are presenting two different scenarios: Scenario One assumes the 10% RPS; Scenario Two assumes the 25% RPS. The RPS in Wisconsin may have an affect on which renewable energy measures the Town implements.

Scenario One – 10% Renewable Portfolio Standards

2025 Energy Use



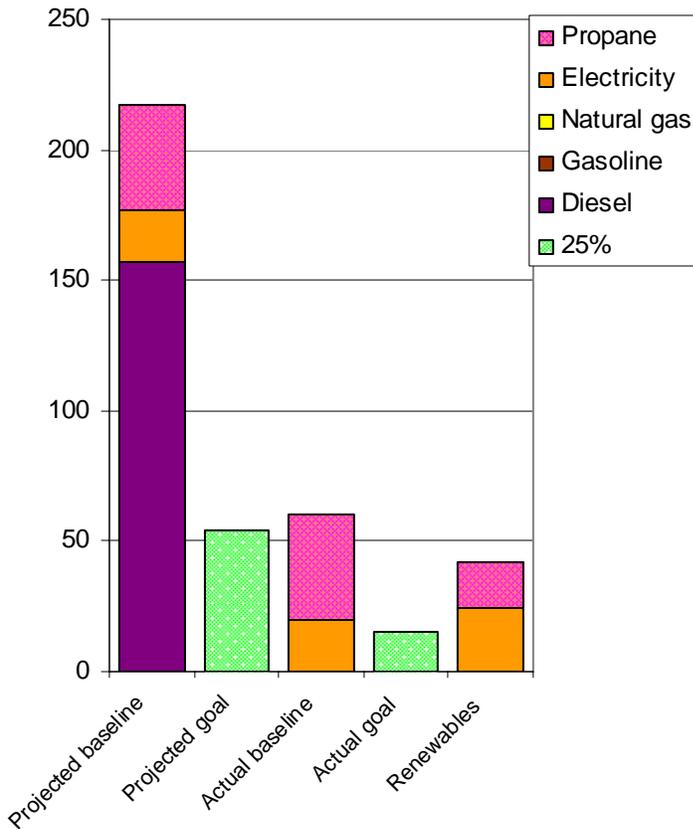
In the preceding chart, the “projected baseline” shows energy consumption for the Town of Fairfield if we would continue our current patterns, and experience a municipal growth of 0.7%. The “projected goal” represents 25% of this. The “actual baseline” shows the energy consumption if proposed energy efficiency projects were implemented (in the case of Fairfield, the conversion of a diesel tractor/mower to a biofuel vehicle). The “actual goal” shows 25% of this modified baseline. This chart clearly demonstrates the power and practicality of improving energy efficiency first.

In Scenario One, if the Town of Fairfield were to **implement all three projects, we would attain 256% of our 25x25 goal** (shown in the chart above). If the town were to replace the tractor with a biofuel vehicle and install the PV array, we would still attain 141% of our 25x25 goal.

Scenario Two – 25% Renewable Portfolio Standards

In Scenario Two, if the Town of Fairfield were to implement all three projects, we would attain 276% of our 25x25 goal (shown in the chart below). If the town were to replace the tractor with a biofuel vehicle and install the PV array, we would still attain 160% of our 25x25 goal.

2025 Energy Use



Projects Selected – Explanation

As mentioned in other sections of this Plan, the Town of Fairfield has limited resources available to us; however, we have a strong commitment to fulfilling and exceeding our 25 x 25 commitment. At this time, we do not have the financial resources to implement any of the potential projects.

The analysis presented in the preceding section demonstrated that 69% of the municipal energy consumption is from vehicular use. This is a result of the Sauk County fleet vehicle that the Town included in our baseline analysis. The Town will continue to work with Sauk County on improving its vehicle fleet.

When it becomes financially feasible, the Town anticipates the implementation of the PV array on the roof of the Town Hall. This project shows the highest savings-to-investment ratio of the proposed projects, and it aligns with the more encompassing goals of the Town eventually becoming an energy producer (See **Action Steps – Immediate and Long-term**)

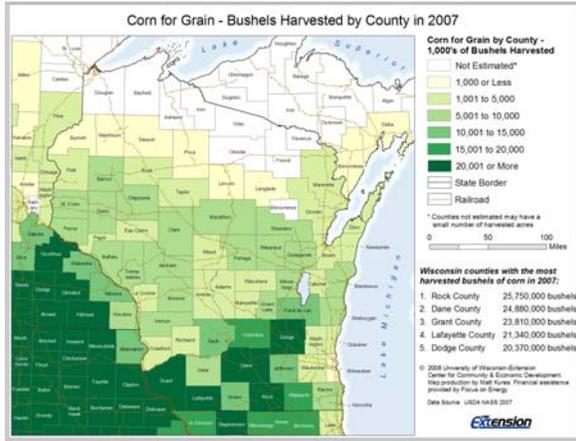
The implementation of the solar hot water assist on the Town Hall is not necessary for the Town to achieve its 25x25 energy goals. In addition, the savings-to-investment ratio for the solar hot water is 7% less than the savings-to-investment ratio for the PV array. At this time, the Town does not anticipate implementing the solar hot water project.

The Town has also discussed the possibility of purchasing green power from their local utility as a contingency option if all other projects prove to not be feasible. While the Adams-Columbia Electric Coop has a green power purchasing program, it is still in its infancy, and does not define a price per kWh.

The **Action Steps – Immediate and Long-term** section of this Plan gives more detail on the implementation of these potential projects; however, at this time it appears that a phasing of these projects will be the most financially feasible.

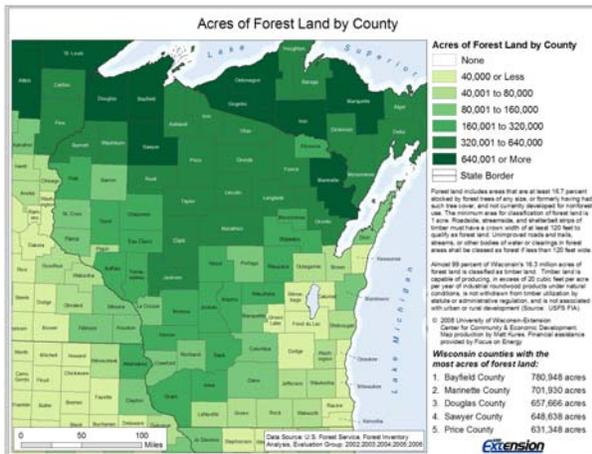
Narrative – Potential Renewable Feedstocks

Figure 4: Corn for Grain in Wisconsin



In general, the Midwest is well suited to capture the benefits of biomass conversion: converting the energy from the sun that is captured and processed by plants and turning it into the energy that is consumed by humans. There are many different sources of biomass, also called feedstocks, which are available for this conversion. In Wisconsin, agricultural resources and logging resources are the two prime categories of renewable feedstocks. Thus far, corn ethanol and biodiesel have dominated the biofuels market in Wisconsin, but as conversion technology advances, there will be expanded opportunities to utilize other sources of renewable energy.

Figure 5: Forestland in Wisconsin



In 2008, the University of Wisconsin Extension and Focus on Energy began a Wisconsin Bioenergy project that provides information relevant to siting and operating facilities for producing biofuels and energy from sources of biomass in Wisconsin.

Generally, the Town of Fairfield falls in the middle of the range of potential productivity found in Wisconsin. While the Town's agricultural and forest product productions are relatively average, there are also other important situational factors when considering biomass as a renewable energy source: location, transportation infrastructure, environmental and aesthetic considerations, and community interactions. In the

Town of Fairfield, smaller-scale biofuel projects would be the most feasible.

Existing Unknowns – Necessary Information for Future Initiatives

The Town of Fairfield is in a unique position as we have minimal municipal operations, and thus limited opportunities to advance the statewide energy independence goals. For much of the planning process, the Town incorporated into its baseline calculations several private entities: the Aldo Leopold Foundation, the International Crane Foundation, and private agri-businesses, as well as Sauk County and Baraboo School District projects in order to bring the potential projects up to a magnitude that could garner grant funding. The original baseline, which can be found in Appendix A, included the Fairfield Town Hall, the Fairfield School, the Aldo Leopold Center, and the International Crane Foundation, and two agri-businesses that agreed to participate.

While it is tempting to include those organizations already interested in energy independence, it is important that the Town consider and incorporate all energy consumers – private, commercial, public, and non-profit – within the Town of Fairfield. The baseline found in the second section of this Plan contains two portions: a baseline assessment for the municipal operations of the Town of Fairfield, and a baseline assessment of electrical use throughout the Town, including all residents, commercial businesses, industries, and non-profits. Although this baseline includes the electrical usage throughout the entire Town, but does not include the energy consumed for heating or transportation. As the Town moves forward toward our energy independence goals, private heating and transportation fuel data should be collected.

Because the Town of Fairfield contracts municipal vehicular use with Sauk County, as the Town moves forward on the 25x25 Initiative, we will continue to communicate with Sauk County about purchasing a vehicle or tractor that uses a renewable fuel source. As shown in the **Pathways to 25x25** section of this Plan, this is a key project for the Town to meet our 25x25 energy goals. Indeed, because municipal operations are so small, the Town will need to convert the fleet vehicle to biodiesel in order to attain our 25x25 energy goals.

Action Steps – Immediate & Long - Term

In order to better understand the proposed immediate and long-term action steps, we need to revisit the priority goals for the Town of Fairfield, and assign a time-frame in which the Town will address these priority goals.

Energy Independence Goals

1. Reduce energy consumption for the Fairfield Town Hall and School.

- Reduce energy consumption for the Fairfield Town Hall and School through energy efficiency and conservation measures (**short term and continual**)
- Source 25% of the energy consumed at the Town Hall and the School from renewable sources (**mid term**)
- Reduce net heat and electric consumption for the Fairfield Town Hall to net zero (**long term**)

2. Reduce the energy consumption for all Town residents (includes non-profits and farm businesses)

- Help Fairfield residents reduce their energy consumption through conservation and efficiency measures, beginning first with educational measures and perhaps leading to other types of assistance in the future (**short term through long term**)
- Encourage the Town of Fairfield to extend the 25x25 Initiative to all Town residents and businesses. (**mid term to long term**)

3. At least 10% of the fuel utilized for municipal use by the Town of Fairfield will come from biofuel sources by 2030.

If and when the Town of Fairfield acquires any vehicles, the Town will prioritize this goal and come up with appropriate actions. (long term)

Energy Independence Action Steps

1. Increase the public awareness of the Town's 25x25 Initiative

Priority: Goal #2

Status: Completed on October 4, 2009

On October 4, 2009 the Fairfield Energy Independence Team hosted an Energy Fair in order to increase community awareness and support for the 25x25 Initiative. More than 150 attendees were able to learn about a variety of different energy-efficiency and renewable energy options: Focus on Energy presented information on the incentives and rebates that they offer; the Adams-Columbia Electric Coop provided educational materials; Green Plan-it demonstrated several of their products; and there were activities specifically designed to get children involved. In addition, everyone enjoyed a delicious pig roast.



Participants were asked to fill out a brief survey, and in appreciation

received a compact-fluorescent lightbulb to help their household

become more energy efficient. Survey respondents were also entered into a drawing for a residential energy audit.

There were 67 survey respondents. They expressed overwhelming support for the Town's 25x25 Initiative, and many were individually pursuing energy efficiency or renewable energy generation on their own. For the most part, survey respondents are currently focusing their energy conservation efforts on reducing the amount of light, heat and water that they use. Many have already converted to compact-fluorescent lightbulbs, or are considering it. Other popular personal actions include insulation improvements, weatherization, and upgrading to Energy Star appliances.



Survey respondents stated that the following resources would help reduce [their] energy consumption or increase [their] power generation at [their] home or business: financial incentives, general information on energy conservation and renewable energy options, and technical information on renewable energy installations.

Full survey results can be found in Appendix B.

2. Adopt the 25x25 Plan

Priority: *Goals #1, 2, & 3*

Status: *Anticipated completion on January 2010*

The Fairfield Town Board will adopt this Plan, ensuring the Town's continued commitment to the 25x25 Initiative. Because the Town has limited resources, it is not possible at this time for the Town to annually update this plan; however, because the Town recognizes that this is indeed a living document, we will strive to update this plan every five years, ensuring that we remain on track to achieve our 25x25 commitment.

3. Establish the Fairfield Sustainability Committee

Priority: *Goals #1, 2, & 3*

Status: *Recommend as an immediate action step*

The Energy Team recommends that the Town of Fairfield form a Sustainability Committee, as an official standing Town committee. The Energy Team appreciates that the focus of the Sustainability Committee may be broader than solely fulfilling the Town's 25x25 commitment. The Energy Team believes that there must be a formalized vehicle through which the Town may advance the priorities established by the Energy Team. The Sustainability Committee will work to further the educational goals, and also to secure funding for the implementation priorities of the Energy Team, thereby working towards both all of the Energy Independence goals.

4. Promote the involvement and education of Town residents

Priority: *Goals #1, 2, & 3*

Status: *Short term*

The continued success of any energy independence initiative will involve not only the support of the Town Board (see Action Steps 2 & 3) but also the Fairfield community as a whole. The Energy Independent Team encourages and supports many different educational measures that will increase the involvement and education of Town residents. This will help the recommended Sustainability Committee bring together volunteers, find local champions, and help ensure the longevity of the energy independence initiative within the Town of Fairfield.

There are several educational measures which are specifically supported by the Energy Independence Team⁴:

- Coordinate with non-profits such as Focus on Energy to provide educational materials on energy efficiency and renewable energy at the Town Hall on voting day
- Purchase a *Kill-a-Watt*⁵ and have it available for loan to Town residents
- Continue to host community events such as the Energy Fair throughout the next 15 years, as resources are available
- Use the Town's website⁶ to provide information and educational materials on energy efficiency and renewable energy to Town residents. A Town website could also be used to reduce paper use within the Town government.

5. Coordinate with Sauk County to replace its diesel fleet vehicle with a biofuel vehicle.

Priority: *Goal #3*

Status: *Recommended as a long-term action step*

The Town of Fairfield will continue to work with Sauk County to encourage the purchase of a biofuel tractor/mower. Because the Town's energy consumption is so low, the inclusion of one Sauk County vehicle accounts for 69% of the energy consumption within the Town. In order to achieve our 25x25 energy goals, we will need to decrease our transportation fuel use by coordinating with the County.

6. Find funding for the proposed renewable energy projects

Priority: *Goal #1*

Status: *Recommended as a mid-term action step*

Because the Town of Fairfield has limited resources, and the Energy Committee has concerns about mandated funding for the 25x25 Initiative, we are currently exploring alternative funding sources in order to implement the proposed projects. It is anticipated that it may take several years to secure funding for the proposed projects. One of the tasks for the recommended Sustainability Committee would be the continued pursuit of appropriate funding sources.

⁴ The Energy Independence Team is not recommending that all of these measures occur immediately; however, they are actions which are specifically supported.

⁵ A Kill-a-Watt Meter™ is a simple device that can assist residents in determining how much energy specific appliances consume which will help residents with decisions such as if it is worth their money to keep inefficient appliances plugged in; if it is time to purchase a new refrigerator, or if using that old airconditioning unit is saving them money, or costing them money. A Kill-a-Watt™ can be purchased for less than \$50.

⁶ Although the Town of Fairfield does not maintain a website currently, it is anticipated that in the future the Town will have our own website. The Energy Independence Team views a website as an excellent tool to promote the energy independence goals of the Town, as well as an excellent tool to encourage more sustainable dispersion of information between the Town government and residents.

Currently, the Town of Fairfield Energy Independence Team is exploring many non-traditional, innovative funding mechanisms; specifically, the possibility of creating a renewable energy corporation that supplies energy to the Town's residents. This would possibly be done in conjunction with Adams-Columbia Electric Cooperative and/or Alliant Energy. There would be two basic mechanisms by which the Town would gather the initial money necessary to install the system: collect voluntary donations from Town residents and offer Town residents the opportunity to purchase and own one of the photovoltaic panels located on the Town Hall.

7. Install proposed projects

Priority: *Goal #1*

Status: *Recommended as a long-term action step*

Once funding has been secured, the Town will install the PV array. If possible, the Town will ideally install a larger photovoltaic array, and become a supplier of renewable energy to Town residents, thus addressing Goal 2 as well.

Energy Independence Team Members

Tim Stone, Town of Fairfield Chair

Buddy Huffaker, Director of the Aldo Leopold Foundation

Dave Chesky, Facility Director for the International Crane Foundation

Gene Larsen, Local agri-business owner

Harold Spink, Town Zoning Administrator

Krisi DuBois, local resident and professional engineer

Carolyn Moon, Adams-Columbia Electric Coop Board of Directors

Andrew Skwor, professional engineer

Jennifer Erickson, UW-Extension representative

Appendix A: Baseline Energy Consumption Data – Spreadsheets

Energy Independent Communities Baseline Assessment

Fairfield - this baseline includes municipal operations as well as the Aldo Leopold Foundation, the ICF, and selected agribusinesses

Using data collected by Fairfield about its municipal energy usage, the Energy Center of Wisconsin has calculated their **current energy use baseline**. From this baseline, we have estimated Fairfield's **2025 energy use baseline** and **25x25 goals**. These calculations are dependent on Fairfield's estimate of its growth rate for municipal energy usage, as explained on the following tab.

In order to determine Fairfield's 2025 municipal energy use baseline, we need to estimate the rate at which we can expect municipal energy usage to grow.

This value will differ for every community.

Possible values are listed below. To run this baseline tool, please select one of those values, or determine your own, and enter it (as a percent) into the green box.



0.7%

- 1.0% Fairfield's estimated population growth rate
- 0.2% Population growth rate discounted by percent of energy attributable to buildings
- 7.0% Annual growth rate of Fairfield municipal energy usage, 2006 to 2008

(As a way to perform a reality check on your estimate, an annual growth rate of 4.2% would mean doubling your energy consumption by 2025.)

Once you have entered a growth rate, please proceed to the next tab.

Your 2008 energy usage baseline is

That baseline is comprised of

and

2,732 million (MM) Btus.

464,092 kWh,

6,097 therms,

1,774 gallons of gasoline,

2,295 gallons of diesel.

By assuming an annual growth rate of
in 2025 your energy use baseline will be

0.70% ,

3,076 MMBtu.

Your 25% energy reduction goal
for 2025 is therefore

or

This translates into

769 MMBtu,

28% of your 2008 consumption.

225,397 kWh or

7,691 therms or

6,202 gallons gas or

5,533 gallons diesel or

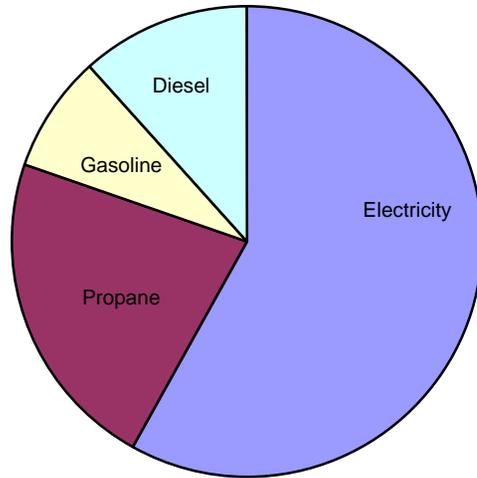
some combination

of those fuels.

Fairfield 2008 Energy Baseline: Additional Info

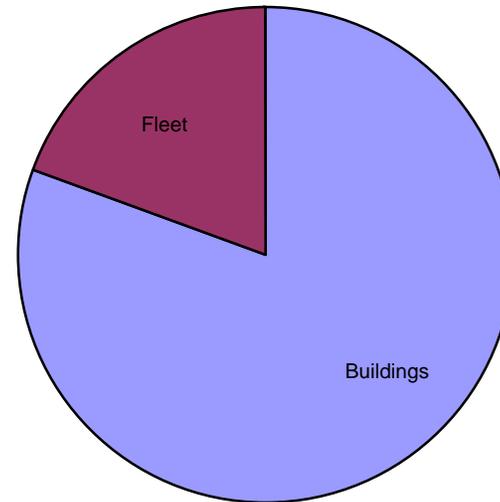
Total Consumption by Energy Type

<i>Energy type</i>	<i>Percent of total Btus</i>
Electricity	58%
Propane	22%
Gasoline	8%
Diesel	12%



Total Consumption by End Use

<i>Energy end use</i>	<i>Percent of total Btus</i>
Buildings	81%
Fleet	19%



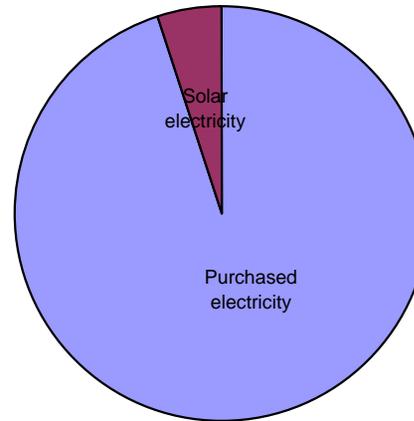
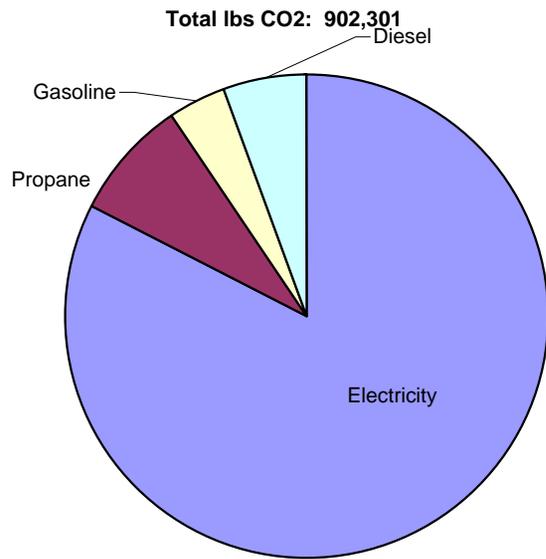
Fairfield 2008 Energy Baseline: Additional Info

Total CO2 Emissions by Energy Type

Energy type	Percent of total CO2
Electricity	83%
Propane	8%
Gasoline	4%
Diesel	6%

Existing Renewable Electricity Generation

Electricity type	Percent of total electricity consumed
Purchased electricity	95%
Solar electricity	5%



INSTRUCTIONS

Buildings

Information about municipal buildings should be filled in on two tabs -- "Buildings" and "Bldgs-Add'l Energy."

Buildings tab

Each row begins with a unique ID number which should not be changed.

Please supply the name/purpose, address and square footage for each building.

For each building, please supply the following information from the past 36 months of utility bills:

- Electric usage (kWh) per month
- Electric demand (kW) per month (if part of rate structure)
- Electric cost (\$) per month, including all taxes and fees
- Heating fuel usage per month [if natural gas, 10 therms = 1 MMBtu = 1 million Btus]
- Heating fuel cost (\$) per month, including all taxes and fees

Please use the drop-down list to select the correct heating fuel.

- If the correct heating fuels do not appear, they can be entered in cells A1037-A1050 on the *Buildings* tab.

If monthly data are not available, please include the total consumption for each of the past three years in the appropriate "Total" column

- Please note that when entering monthly data, the "Total" columns will automatically sum up that year's consumption.

If three years of data are not available, please include as many months/years of data as are available.

Bldgs-Add'l Energy tab

If the building has additional energy consumption or generation, please record it on the "Bldgs-Add'l Energy" tab,

- Be sure to use the corresponding unique building ID number.
- Only include one type of consumption/generation per building per row. The same building ID can be used on as many rows as is necessary.
- Examples of energy uses to consider for this tab:
 - Secondary heating fuels
 - Purchased chilled water
 - Electricity from solar photovoltaic
 - Hot water from solar thermal
 - Electricity from biogas from wastewater treatment
 - Heat from municipal garages burning waste motor oil

Any building on the *Add'l Energy* tab must also be on the *Buildings* tab.

If the energy generated by your building is not separately metered but instead just reduces how much energy you purchase, create a line for that building in this tab and describe the generation source but leave the monthly data fields empty.

Building information				Utility billing data		Monthly data												2006 total		
Building ID	Building name/purpose	Street address	Building area (square feet)	Type of energy consumed	Name of utility	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	2006 total		
FA-001	FAIRFIELD TOWN HALL	E12891 COUNTY ROAD U BARABOO, WI 53913		kWh	ADAMS COLUMBIA ELECTRIC CO-OP	545	472	383	419	337	311	309	373	412	389	476	635	5061		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	1	1	1	1	0	0	0	0	1	0	1	1	7		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$69	\$67	\$57	\$61	\$52	\$46	\$50	\$59	\$60	\$59	\$64	\$76	\$718		
				propane (gallons)	HOHL'S PROPANE INC.	100	151			100										
FA-002	FAIRFIELD SCHOOL			heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$120	\$210			\$140								\$470		
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	6180	6360	6180	6000	6000	5220	3420	2760	4920	5640	5820	6240	64740		
				kW	ALLIANT	8.3	9.5	8.3	8.3	8.1	7.3	4.6	3.7	6.8	7.6	8.1	8.4	89		
				electric \$ (inc. tax, fees)	ALLIANT	\$526	\$546	\$532	\$522	\$526	\$483	\$337	\$274	\$479	\$519	\$508	\$544	\$5,795		
FA-003	International Crane Foundation,	1206-02-012 E11376 Shady Lane Rd, Baraboo, WI 53913		propane (gallons)	HOHL'S PROPANE INC.	1129	801	900	875	640	1173	467	299	570	170	215	994	8232		
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$734	\$521	\$585	\$569	\$416	\$762	\$419	\$269	\$512	\$153	\$193	\$893	\$6,026		
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	1110	1250	1290	550	230	170	230	300	140	210	300	900	6860		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	1.5	1.9	1.7	0.8	0.3	0.2	0.3	0.4	0.2	0.3	0.7	1.2	9.5		
FA-004	International Crane Foundation,	1206-02-013 E11376 Shady Lane Rd, Baraboo, WI 53913		electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$108	\$129	\$132	\$70	\$43	\$35	\$43	\$51	\$34	\$41	\$67	\$96	\$850		
				Select a heating fuel															0	
				heating \$ (inc. tax, fees)																\$0
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	1057	1182	1056	1418	1659	2038	2849	2870	2032	1918	1803	1091	20973		
FA-005	International Crane Foundation,	1206-02-014 E11376 Shady Lane Rd, Baraboo, WI 53913		kW	ADAMS COLUMBIA ELECTRIC CO-OP	1.4	1.8	1.4	2.0	2.2	2.8	3.8	3.9	2.8	2.6	2.5	1.5	2.9		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$104	\$124	\$113	\$137	\$150	\$166	\$242	\$263	\$190	\$176	\$167	\$109	\$1,942		
				Select a heating fuel																0
				heating \$ (inc. tax, fees)																\$0
FA-006	International Crane Foundation,	1206-02-015 E11376 Shady Lane Rd, Baraboo, WI 53913		kWh	ADAMS COLUMBIA ELECTRIC CO-OP	4600	4160	5320	4560	6840	7480	7640	6800	4800	5800	4640	4400	67040		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	6.2	6.2	7.2	6.3	9.2	10.4	10.3	9.1	6.7	7.8	6.4	5.9	92		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$443	\$369	\$459	\$388	\$509	\$520	\$580	\$572	\$416	\$470	\$392	\$356	\$5,474		
				Select a heating fuel																0
FA-007	International Crane Foundation,	1206-02-016 E11376 Shady Lane Rd, Baraboo, WI 53913		heating \$ (inc. tax, fees)														\$0		
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	5560	6040	4600	1880	2520	1840	1160	1200	960	1280	1960	3920	32920		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	7.5	9.0	6.2	2.6	3.4	2.6	1.6	1.6	1.3	1.7	2.7	5.3	45		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$501	\$481	\$387	\$172	\$212	\$154	\$116	\$127	\$105	\$128	\$180	\$302	\$2,864		
FA-008	International Crane Foundation,	1206-02-019 E11376 Shady Lane Rd, Baraboo, WI 53913		Select a heating fuel														0		
				heating \$ (inc. tax, fees)															\$0	
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	1300	1620	1390	1320	1530	1660	1870	2010	1530	1490	1510	1370	18600		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	1.7	2.4	1.9	1.8	2.1	2.3	2.5	2.7	2.1	2.0	2.1	1.8	26		
FA-009	International Crane Foundation,	1206-02-020 E11376 Shady Lane Rd, Baraboo, WI 53913		electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$121	\$159	\$140	\$129	\$141	\$141	\$169	\$193	\$150	\$144	\$145	\$129	\$1,761		
				Select a heating fuel															0	
				heating \$ (inc. tax, fees)																\$0
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	2090	2510	1980	2070	2210	3240	3750	4330	2830	2220	1930	1750	30910		
FA-010	International Crane Foundation,	1206-02-021 E11376 Shady Lane Rd, Baraboo, WI 53913		electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$177	\$229	\$188	\$187	\$189	\$246	\$303	\$371	\$253	\$200	\$177	\$156	\$2,676		
				Select a heating fuel															0	
				heating \$ (inc. tax, fees)																\$0
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	2090	2510	1980	2070	2210	3240	3750	4330	2830	2220	1930	1750	30910		
FA-011	International Crane Foundation,	1206-02-022 E11376 Shady Lane Rd, Baraboo, WI 53913		electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$28	\$32	\$28	\$24	\$29	\$26	\$29	\$31	\$28	\$30	\$28	\$28	\$342		
				Select a heating fuel															0	
				heating \$ (inc. tax, fees)																\$0
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	81	99	84	53	74	69	75	98	75	90	76	78	952		
FA-012	Aldo Leopold Foundation Legacy Center	E13701 Levee Rd, Baraboo, WI 53913		kW	ADAMS COLUMBIA ELECTRIC CO-OP	0.1	0.1	0.1	0.1	\$140	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$28	\$32	\$28	\$24	\$29	\$26	\$29	\$31	\$28	\$30	\$28	\$28	\$342		
				Select a heating fuel																0
				heating \$ (inc. tax, fees)																\$0
FA-013	William R Turner	1207-06-001 S2466 Gillem Rd, Baraboo, WI 53913		kWh	ADAMS COLUMBIA ELECTRIC CO-OP	637	302	300	600	600	2000	1400	1200	4416	600	300	288	12643		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	0.9	0.4	0.4	0.8	0.8	2.8	1.9	1.6	6.1	0.8	0.4	0.4	17		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$81	\$51	\$53	\$78	\$78	\$174	\$141	\$134	\$388	\$80	\$52	\$46	\$1,356		
				Select a heating fuel																0
FA-014	John J Turner	1207-06-002 S2640 Gillem Rd, Baraboo, WI 53913		heating \$ (inc. tax, fees)														\$0		
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1332	1516	4300	7148
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	2.1	5.8	10
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP												\$143	\$149	\$349	\$641
FA-015	John J Turner	1206-01-003 S2715A Gillem Rd, Baraboo, WI 53913		Select a heating fuel														0		
				heating \$ (inc. tax, fees)															\$0	
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	4030	3760	3650	3170	3200	3170	4000	4260	3270	3090	2670	3580	41850		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	5.4	5.6	4.9	4.4	4.3	4.4	5.4	5.7	4.5	4.2	3.7	4.8	57		
FA-016	Aldo Leopold Foundation Legacy Center	E13701 Levee Rd, Baraboo, WI 53913		electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$305	\$321	\$316	\$272	\$262	\$244	\$325	\$371	\$290	\$270	\$233	\$284	\$3,493		
				Select a heating fuel															0	
				heating \$ (inc. tax, fees)																\$0
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	1820	1420	1460	1340	1230	1150	1910	2130	1280	1330	1210	1460	17740		
FA-017	John J Turner	1207-06-002 S2640 Gillem Rd, Baraboo, WI 53913		kW	ADAMS COLUMBIA ELECTRIC CO-OP	2.4	2.1	2.0	1.9	1.7	1.6	2.6	2.9	1.8	1.8	1.7	2.0	24		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$158	\$142	\$145	\$133	\$122	\$109	\$178	\$204	\$133	\$136	\$121	\$135	\$1,717		
				Select a heating fuel																0
				heating \$ (inc. tax, fees)																\$0
FA-018	John J Turner	1206-01-003 S2715A Gillem Rd, Baraboo, WI 53913		kWh	ADAMS COLUMBIA ELECTRIC CO-OP	5390	4100	3440	2850	2930	2710	3540	3860	3160	3130	2590	3250	40950		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	7.2	6.1	4.6	4.0	3.9	3.8	4.8	5.2	4.4	4.2	3.6	4.4	56		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$404	\$358	\$313	\$260	\$252	\$222	\$302	\$349	\$289	\$280	\$238	\$275	\$3,541		
				Select a heating fuel																0
FA-019	John J Turner	1206-01-003 S2715A Gillem Rd, Baraboo, WI 53913		heating \$ (inc. tax, fees)														\$0		
				kWh	ADAMS COLUMBIA ELECTRIC CO-OP	1820	1420	1460	1340	1230	1150	1910	2130	1280	1330	1210	1460	17740		
				kW	ADAMS COLUMBIA ELECTRIC CO-OP	2.4	2.1	2.0	1.9	1.7	1.6	2.6	2.9	1.8	1.8	1.7	2.0	24		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$158	\$142	\$145	\$133	\$122	\$109	\$178	\$204	\$133	\$136	\$121	\$135	\$1,717		
FA-020	Aldo Leopold Foundation Legacy Center	E13701 Levee Rd, Baraboo, WI 53913		Select a heating fuel														0		
				heating \$ (inc. tax, fees)															\$0	
				kWh purchased													1332	1516	4300	7148
				kWh generated													0	0	0	0
FA-021	Aldo Leopold Foundation Legacy Center	E13701 Levee Rd, Baraboo, WI 53913		purchased electric \$ (inc. tax																

Building information			Monthly billing data or measured energy generation																										
Building ID	Type of energy consumed	OR Type of energy generated (include source/fuel: e.g. hot water from solar thermal, or electricity from biogas from wastewater treatment)	Type of energy consumed/generated (enter units here)	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007 total	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	2008 total
				energy \$ (if consumed)																									
Aldo	Electric		kwh/solar			680	1040	4160	4520	5080	2920	2920	2240	1120	0	24680	80	40	2120	2680	3720	3240	2520	3480	3160	1880	860	40	23840
Leopold	Electric		energy \$ (if consumed)	\$47	\$72	\$287	\$312	\$351	\$201	\$201	\$155	\$77	\$0	\$1,703	\$6	\$3	\$178	\$225	\$312	\$272	\$212	\$292	\$265	\$158	\$74	\$3	\$2,001		

Lighting information _NA				Utility billing data					
Lighting ID	Type	Total pole wattage (W)	Number of poles	Types of energy consumed	Name of utility	Utility monthly cost per pole (if applicable)	2006 total	2007 total	2008 total
FA-L01	Streetlights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L02	Traffic lights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L03	Area lights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L04	Decorative lights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L05	Other lighting 1			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L06	Other lighting 2			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0

INSTRUCTIONS

Infrastructure

Information about municipal infrastructure should be filled in on two tabs -- "Infra Lighting" and "Infra Water"

Lighting tab

Each row begins with a unique ID number which should not be changed.

We have identified four main types of municipal lighting: streetlights, traffic lights, area lights (e.g., parks, parking lots, sports fields) and decorative lights.

If all examples of a certain type can be considered together (e.g. all streetlights are the same), then they may be entered in one row.

If all examples of a certain type cannot be considered together, or if an additional type is discovered, use the provided "Other Lighting" rows.

- **Please change the name** from "Other Lighting" to something descriptive about the lights in question.
- The names given for records L01 through L04 (street, traffic, area, decorative) can also be changed if necessary.

For each type, please supply the following information from the past 36 months of utility bills:

- Total electric usage (kWh) per month for all poles if available
- Total electric demand (kW) per month for all poles if available
- Total electric cost (\$) per month for all poles, including all taxes and fees

If the poles are not separately metered and monthly data are not available, we will use the information you provide about rate schedules, number of poles, etc.

Water tab

Each row begins with a unique ID number which should not be changed.

We have identified three main types of municipal water energy usage: wastewater treatment plants, freshwater pumphouses and sewage lift stations.

If all examples of a certain type can be considered together (e.g. all pumphouses are the same), then they may be entered in one row.

If all examples of a certain type cannot be considered together, these can be entered in the provided rows.

- Ten pumphouse rows and 10 lift station rows have been provided, as well as "Other Water" rows.
- If two or more instances of a type are essentially the same, they can be entered on the same row. Please change the quantity in the Number column.

If a pumphouse is not metered separately from the municipal building in which it resides, you do not need to enter billing data on this tab.

NOT APPLICABLE

Water information				Utility billing data				
Infrastructure ID	Type	Gallons per month	Number of stations	Types of energy consumed	Name of utility	2006 total	2007 total	2008 total
				kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
				Select a heating fuel		0	0	0
FA-W01	Wastewater treatment plant			heating \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W02	Freshwater pumphouse 1			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W03	Freshwater pumphouse 2			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W04	Freshwater pumphouse 3			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W05	Freshwater pumphouse 4			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W06	Freshwater pumphouse 5			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W07	Freshwater pumphouse 6			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W08	Freshwater pumphouse 7			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W09	Freshwater pumphouse 8			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W10	Freshwater pumphouse 9			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W11	Freshwater pumphouse 10			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W12	Sewage lift station 1			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W13	Sewage lift station 2			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W14	Sewage lift station 3			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W15	Sewage lift station 4			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W16	Sewage lift station 5			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W17	Sewage lift station 6			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W18	Sewage lift station 7			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W19	Sewage lift station 8			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W20	Sewage lift station 9			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W21	Sewage lift station 10			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W22	Other water 1			electric \$ (inc. tax, fees)		\$0	\$0	\$0
				kWh		0	0	0
				kW		0	0	0
FA-W23	Other water 2			electric \$ (inc. tax, fees)		\$0	\$0	\$0

INSTRUCTIONS

Fleet

Information about the municipal fleet should be filled in the "Fleet" tab.

Fleet tab

At the top of the spreadsheet is a table to record total liquid fuel consumption for the past three years, as well as total number of plug-in vehicles in service.

Beneath this is a table into which you can enter all of the municipality's vehicles.

Please select the appropriate vehicle type from the drop-down list.

- If the correct vehicle type does not appear, or if you want to be more specific, new types can be entered in cells A529-A530 on the *Fleet* tab.

If all examples of a certain type can be considered together (e.g. all fire trucks are the same make and model), then they may be entered in one row.

- In this event, please change the quantity in the "Number of ..." column and **sum the mileage and fuel consumed** for all vehicles of that type.
- If the vehicles are *essentially* the same but might have different models, they can be included in the same column.

If records are available regarding gallons of fuel consumed per vehicle, please include this information as well.

If three years of data are not available, please include as many years of data as are available.

Fleet information

	2006	2007	2008
Total gasoline purchases (gallons)	340.76	1263.24	1774.25
Total diesel purchases (gallons)	1994	2143	2295
Total number of plug-in electric vehicles in operation			

Vehicle type/ category	Make	Model	Number of vehicles of this model	Total miles traveled 2006	Total miles traveled 2007	Total miles traveled 2008	Fuel type	Total gallons per year	location	year
Private passenger	Chev	Equinox	1				unleaded	349.135	ALF	2007
Pickup/Van/Light truck	Chev	Silverado	1				unleaded	226.599	ALF	2007
Private passenger	Ford	Windstar	1				unleaded	135.362	ALF	2007
Other medium truck	Ford	F-350	1				diesel	15.43	ALF	2007
Small diesel/Groundskeeping	misc		1				unleaded	181.163	ALF	2007
Small diesel/Groundskeeping	misc diesel		1				diesel	97.892	ALF	2007
Small diesel/Groundskeeping	Tractor		1				unleaded	35.472	ALF	2007
Small diesel/Groundskeeping	Gator/mower	mower	1				unleaded	29.216	ALF	2007
Small diesel/Groundskeeping	saw mix		1				unleaded	1,001	ALF	2007
								922.476		
Private passenger	Chev	Equinox	1				unleaded	152.814	ALF	2008
Pickup/Van/Light truck	Chev	Silverado	1				unleaded	446.746	ALF	2008
Private passenger	Ford	Windstar	1				unleaded	194.624	ALF	2008
Other medium truck	Ford	F-350	1				diesel	108.55	ALF	2008
Pickup/Van/Light truck	GM	truck	1				unleaded	15.554	ALF	2008
Private passenger	Rental	car	1				unleaded	55.159	ALF	2008
Private passenger	Toyota	Camry hybrid	1				unleaded	346.882	ALF	2008
Small diesel/Groundskeeping	misc		1				unleaded	162.845	ALF	2008
Small diesel/Groundskeeping	misc diesel		1				diesel	59.171	ALF	2008
Small diesel/Groundskeeping	Tractor		1				diesel	133.696	ALF	2008
Small diesel/Groundskeeping	Gator/mower	mower	1				unleaded	19.683	ALF	2008
Small diesel/Groundskeeping	saw mix		1				unleaded	21.847	ALF	2008
Small diesel/Groundskeeping	brushsaw mix		1				unleaded	17.338	ALF	2008
Small diesel/Groundskeeping	drip torch		1				diesel	12.009	ALF	2008
								1433.492		
Pickup/Van/Light truck	Ford	F-250	1	317.2			unleaded	26.4	BPS	2006
Pickup/Van/Light truck	Ford	F-250	1	292.8			unleaded	24.4	BPS	2006
Pickup/Van/Light truck	Ford	F-250	1	146.4			unleaded	12.2	BPS	2006
Pickup/Van/Light truck	Chev	VAN	1	1024.8			unleaded	68.32	BPS	2006
Pickup/Van/Light truck	Chev	VAN	1	183			unleaded	10.17	BPS	2006
Pickup/Van/Light truck	Chev	VAN	1	73.2			unleaded	4.88	BPS	2006
Pickup/Van/Light truck	Chev	VAN	1	73.2			unleaded	4.07	BPS	2006
Pickup/Van/Light truck	GM	VAN	1	109.8			unleaded	7.32	BPS	2006
Pickup/Van/Light truck	Chev	VAN	1	2196			unleaded	183	BPS	2006
								340.76		
Pickup/Van/Light truck	Ford	F-250	1	317.2			unleaded	26.4	BPS	2007
Pickup/Van/Light truck	Ford	F-250	1	292.8			unleaded	24.4	BPS	2007
Pickup/Van/Light truck	Ford	F-250	1	146.4			unleaded	12.2	BPS	2007
Pickup/Van/Light truck	Chev	VAN	1	1024.8			unleaded	68.32	BPS	2007
Pickup/Van/Light truck	Chev	VAN	1	183			unleaded	10.17	BPS	2007
Pickup/Van/Light truck	Chev	VAN	1	73.2			unleaded	4.88	BPS	2007
Pickup/Van/Light truck	Chev	VAN	1	73.2			unleaded	4.07	BPS	2007
Pickup/Van/Light truck	GM	VAN	1	109.8			unleaded	7.32	BPS	2007
Pickup/Van/Light truck	Chev	VAN	1	2196			unleaded	183	BPS	2007
								340.76		
Pickup/Van/Light truck	Ford	F-250	1			317.2	unleaded	26.4	BPS	2008
Pickup/Van/Light truck	Ford	F-250	1			292.8	unleaded	24.4	BPS	2008
Pickup/Van/Light truck	Ford	F-250	1			146.4	unleaded	12.2	BPS	2008
Pickup/Van/Light truck	Chev	VAN	1			1024.8	unleaded	68.32	BPS	2008
Pickup/Van/Light truck	Chev	VAN	1			183	unleaded	10.17	BPS	2008
Pickup/Van/Light truck	Chev	VAN	1			73.2	unleaded	4.88	BPS	2008
Pickup/Van/Light truck	Chev	VAN	1			73.2	unleaded	4.07	BPS	2008
Pickup/Van/Light truck	GM	VAN	1			109.8	unleaded	7.32	BPS	2008
Pickup/Van/Light truck	Chev	VAN	1			2196	unleaded	183	BPS	2008
								340.76		
Dump truck	INTERNATIONAL	PATROL TRK	1	3376			diesel	936	Sauk Co.	2006
Dump truck	INTERNATIONAL	PATROL TRK	1	2657			diesel	487	Sauk Co.	2006
Dump truck	INTERNATIONAL	PATROL TRK	1	2082			diesel	423	Sauk Co.	2006
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	65	Sauk Co.	2006
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	83	Sauk Co.	2006
								1994		
Dump truck	INTERNATIONAL	PATROL TRK	1		3376		diesel	936	Sauk Co.	2007
Dump truck	INTERNATIONAL	PATROL TRK	1		2657		diesel	487	Sauk Co.	2007
Dump truck	INTERNATIONAL	PATROL TRK	1		2082		diesel	423	Sauk Co.	2007
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	65	Sauk Co.	2007
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	83	Sauk Co.	2007
								1994		
Dump truck	INTERNATIONAL	PATROL TRK	1			3376	diesel	936	Sauk Co.	2008
Dump truck	INTERNATIONAL	PATROL TRK	1			2657	diesel	487	Sauk Co.	2008
Dump truck	INTERNATIONAL	PATROL TRK	1			2082	diesel	423	Sauk Co.	2008
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	65	Sauk Co.	2008
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	83	Sauk Co.	2008
								1994		

Select a vehicle type:

Type of energy consumed	Data		
	Sum of 2006 total	Sum of 2007 total	Sum of 2008 total
electric \$ (inc. tax, fees)	33171.5	41210.22	44800.23
heating \$ (inc. tax, fees)	6496.39	7744.22	11593.07
kW	505.0123573	631.5748425	636.8441385
kWh	368407	460618	464092
propane (gallons)	8582.8	6352	6656.4
Select a heating fuel	0	0	0
Grand Total	417162.7024	516556.0148	527778.5441

06-08 increase

35%

78%

26%

-22%

07-08 increase

9%

50%

1%

5%

Energy use by year

		2006	2007	2008
kWh	Buildings	368,407	460,618	464,092
<i>kWh generated</i>	<i>Buildings</i>	<i>0</i>	<i>24,680</i>	<i>23,840</i>
Propane (gallons)	Buildings	8,583	6,352	6,656
Gasoline	Vehicles	341	1,263	1,774
Diesel	Vehicles	1,994	2,143	2,295
Dollars	Buildings	39,668	48,954	56,393
	Gasoline	22,650	18,110	21,700
	Diesel	955	3,815	6,937
<i>MMBtus</i>		<i>2,435</i>	<i>2,661</i>	<i>2,788</i>

Annual changes in MMBtu consumption

% growth	2006	2007	2008
2006 --		9%	15%
2007	--		5%
2008		--	

2008 energy use baseline in MMBtus

	energy consumption of given type	in MMBtus	% of total	in lbs CO2		
kWh	464,092	1583	58%	744,906	83%	1.5
Therms	6,097	610	22%	71,387	8%	1.6577
Gasoline	1,774	220	8%	34,669	4%	1.287517
Diesel	2,295	319	12%	51,339	6%	2.44949
Dollars	85,030					
<i>Totals</i>		<i>2732</i>		<i>902301</i>		

2008 energy use baseline by end use

	MMBtu	
Buildings	2,249	80.67%
Fleet	539	19.33%
<i>Total</i>	<i>2,788</i>	

Energy Independent Communities

Baseline Assessment

Fairfield - MUNICIPAL OPERATIONS ONLY

Using data collected by Fairfield about its municipal energy usage, the Energy Center of Wisconsin has calculated their **current energy use baseline**. From this baseline, we have estimated Fairfield's **2025 energy use baseline** and **25x25 goals**. These calculations are dependent on Fairfield's estimate of its growth rate for municipal energy usage, as explained on the following tab.

In order to determine Fairfield's 2025 municipal energy use baseline, we need to estimate the rate at which we can expect municipal energy usage to grow.

This value will differ for every community.

Possible values are listed below. To run this baseline tool, please select one of those values, or determine your own, and enter it (as a percent) into the green box.



0.7%

- 1.0% Fairfield's estimated population growth rate
- 0.7% Population growth rate discounted by percent of energy attributable to buildings
- 3.5% Annual growth rate of Fairfield municipal energy usage, 2006 to 2008

(As a way to perform a reality check on your estimate, an annual growth rate of 4.2% would mean doubling your energy consumption by 2025.)

Once you have entered a growth rate, please proceed to the next tab.

Your 2008 energy usage baseline is

That baseline is comprised of

and

201 million (MM) Btus.

5,227 kWh,

440 therms,

0 gallons of gasoline,

1,001 gallons of diesel.

By assuming an annual growth rate of
in 2025 your energy use baseline will be

0.70% ,

226 MMBtu.

Your 25% energy reduction goal
for 2025 is therefore

or

This translates into

57 MMBtu,

28% of your 2008 consumption.

16,577 kWh or

566 therms or

456 gallons gas or

407 gallons diesel or

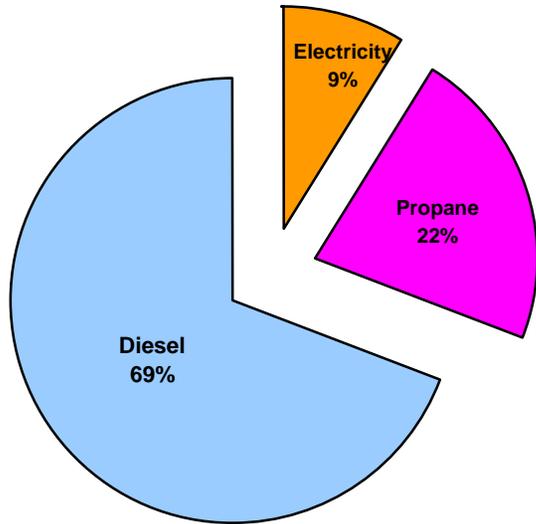
some combination

of those fuels.

Fairfield 2008 Energy Baseline: Additional Info

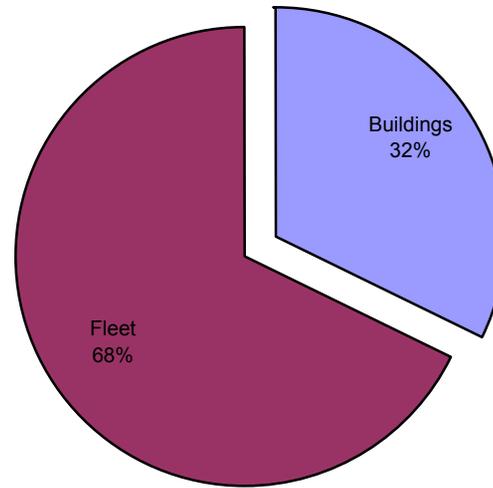
Total Consumption by Energy Type

<i>Energy type</i>	<i>Percent of total Btus</i>
Electricity	9%
Propane	22%
Diesel	69%



Total Consumption by End Use

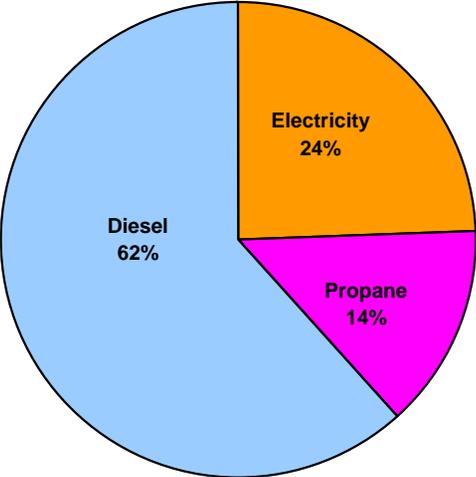
<i>Energy end use</i>	<i>Percent of total Btus</i>
Buildings	32%
Fleet	68%



Fairfield 2008 Energy Baseline: Additional Info

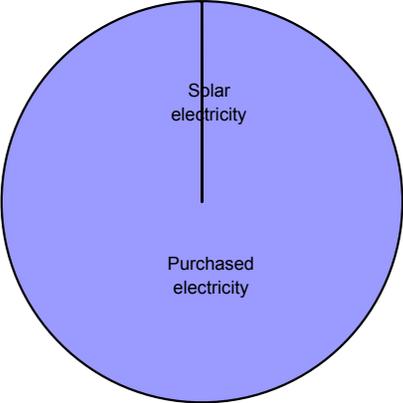
Total CO2 Emissions by Energy Type

<i>Energy type</i>	<i>Percent of total CO2</i>
Electricity	24%
Propane	14%
Gasoline	0%
Diesel	62%



Existing Renewable Electricity Generation

<i>Electricity type</i>	<i>Percent of total electricity consumed</i>
Purchased electricity	100%
Solar electricity	0%



INSTRUCTIONS

Buildings

Information about municipal buildings should be filled in on two tabs -- "Buildings" and "Bldgs-Add'l Energy."

Buildings tab

Each row begins with a unique ID number which should not be changed.

Please supply the name/purpose, address and square footage for each building.

For each building, please supply the following information from the past 36 months of utility bills:

- Electric usage (kWh) per month
- Electric demand (kW) per month (if part of rate structure)
- Electric cost (\$) per month, including all taxes and fees
- Heating fuel usage per month [if natural gas, 10 therms = 1 MMBtu = 1 million Btus]
- Heating fuel cost (\$) per month, including all taxes and fees

Please use the drop-down list to select the correct heating fuel.

- If the correct heating fuels do not appear, they can be entered in cells A1037-A1050 on the *Buildings* tab.

If monthly data are not available, please include the total consumption for each of the past three years in the appropriate "Total" column

- Please note that when entering monthly data, the "Total" columns will automatically sum up that year's consumption.

If three years of data are not available, please include as many months/years of data as are available.

Bldgs-Add'l Energy tab

If the building has additional energy consumption or generation, please record it on the "Bldgs-Add'l Energy" tab,

- Be sure to use the corresponding unique building ID number.
- Only include one type of consumption/generation per building per row. The same building ID can be used on as many rows as is necessary.
- Examples of energy uses to consider for this tab:
 - Secondary heating fuels
 - Purchased chilled water
 - Electricity from solar photovoltaic
 - Hot water from solar thermal
 - Electricity from biogas from wastewater treatment
 - Heat from municipal garages burning waste motor oil

Any building on the *Add'l Energy* tab must also be on the *Buildings* tab.

If the energy generated by your building is not separately metered but instead just reduces how much energy you purchase, create a line for that building in this tab and describe the generation source but leave the monthly data fields empty.

Building ID	Building name/purpose	Street address	Building area (square feet)	Type of energy consumed	Name of utility	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	2006 total			
FA-001	FAIRFIELD TOWN HALL	E12891 COUNTY ROAD U BARABOO, WI 53913		kWh		545	472	383	419	337	311	309	373	412	389	476	635	5061			
				kW		1	1	1	1	0	0	0	0	1	0	1	1	1	7		
				electric \$ (inc. tax, fees)	ADAMS COLUMBIA ELECTRIC CO-OP	\$69	\$67	\$57	\$61	\$52	\$46	\$50	\$59	\$60	\$59	\$64	\$76	\$718			
				propane (gallons)		100	151			100											351
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$120	\$210			\$140											\$470
FA-002	FAIRFIELD SCHOOL			kWh		6180	6360	6180	6000	6000	5220	3420	2760	4920	5640	5820	6240	64740			
				kW		8.3	9.5	8.3	8.3	8.1	7.3	4.6	3.7	6.8	7.6	8.1	8.4	8.9			
				electric \$ (inc. tax, fees)	ALLIANT	\$526	\$546	\$532	\$522	\$526	\$483	\$337	\$274	\$479	\$519	\$508	\$544	\$5,795			
				propane (gallons)		1129	801	900	875	640	1173	467	299	570	170	215	994	8232			
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$734	\$521	\$585	\$569	\$416	\$762	\$419	\$269	\$512	\$153	\$193	\$893	\$6,026			
FA-003	total			kWh		6725	6832	6563	6419	6337	5531	3729	3133	5332	6029	6296	6875	69801			
				kW		9.0	10.1	8.9	8.9	8.5	7.7	5.0	4.2	7.4	8.1	8.8	9.2	95.8			
				electric \$ (inc. tax, fees)		\$595	\$613	\$588	\$583	\$578	\$529	\$387	\$333	\$539	\$578	\$572	\$620	\$6,513			
				Select a heating fuel		1229	952	900	875	740	1173	467	299	570	170	215	994	8583			
				heating \$ (inc. tax, fees)		\$854	\$731	\$585	\$569	\$556	\$762	\$419	\$269	\$512	\$153	\$193	\$893	\$6,496			

Building information				Utility billing data																
Building ID	Building name/purpose	Street address	Building area (square feet)	Type of energy consumed	Name of utility	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007 total		
FA-001	FAIRFIELD TOWN HALL	E12891 COUNTY ROAD U BARABOO, WI 53913		kWh		545	560	505	448	322	275	335	475	347	351	354	578	5095		
				kW		1	1	1	1	0	0	0	1	0	0	1	1	1	7	
				electric \$ (inc. tax, fees)	ELECTRIC CO-OP	\$68	\$68	\$72	\$62	\$52	\$47	\$53	\$69	\$58	\$58	\$54	\$73	\$735		
				propane (gallons)		494														494
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$691														
FA-002	FAIRFIELD SCHOOL			kWh		6240	5940	6480	4860	5580	4860	2220	3720	5460	4440	5880	6120	61800		
				kW		8.4	8.8	8.7	6.8	7.5	6.8	3.0	5.0	7.6	6.0	8.2	8.2	85		
				electric \$ (inc. tax, fees)	ALLIANT	\$528	\$518	\$565	\$428	\$501	\$463	\$229	\$382	\$530	\$454	\$562	\$602	\$5,761		
				propane (gallons)		440	810	310	450	175	220	1499	150	400	220	150	1034	5858		
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$660	\$1,214	\$465	\$675	\$262	\$330	\$540	\$225	\$600	\$330	224.85	\$1,529	\$7,053		
FA-003	total			kWh		6785	6500	6985	5308	5902	5135	2555	4195	5807	4791	6234	6698	66895		
				kW		9.2	9.7	9.4	7.4	7.9	7.2	3.4	5.6	8.1	6.4	8.7	9.0	91.9		
				electric \$ (inc. tax, fees)		\$595	\$586	\$636	\$489	\$554	\$510	\$283	\$451	\$588	\$512	\$616	\$675	\$6,495		
				Select a heating fuel		934	810	310	450	175	220	1499	150	400	220	150	1034	6352		
				heating \$ (inc. tax, fees)		\$1,351	\$1,214	\$465	\$675	\$262	\$330	\$540	\$225	\$600	\$330	\$225	\$1,529	\$7,744		

Building information				Utility billing data																
Building ID	Building name/purpose	Street address	Building area (square feet)	Type of energy consumed	Name of utility	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	2008 total		
FA-001	FAIRFIELD TOWN HALL	E12891 COUNTY ROAD U BARABOO, WI 53913		kWh		593	503	518	555	477	344	248	420	360	313	464	432	5227		
				kW		1	1	1	1	1	0	0	1	0	0	1	1	1	7	
				electric \$ (inc. tax, fees)	ELECTRIC CO-OP	\$75	\$72	\$73	\$81	\$73	\$60	\$48	\$72	\$59	\$54	\$70	\$65	\$803		
				propane (gallons)		480														480
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$736														
FA-002	FAIRFIELD SCHOOL			kWh		2460	2580	2100	1500	1620	2100	3060	1860	4620	4740	7140	5580	39360		
				kW		3.3	3.8	2.8	2.1	2.2	2.9	4.1	2.5	6.4	6.4	9.9	7.5	54		
				electric \$ (inc. tax, fees)	ALLIANT	\$254	\$275	\$224	\$162	\$177	\$242	\$291	\$180	\$434	\$422	\$600	\$471	\$3,477		
				propane (gallons)		949	987	1171									1020	675	1375	6176
				heating \$ (inc. tax, fees)	HOHL'S PROPANE INC.	\$1,403	\$1,459	\$1,732									\$2,081	\$1,377	\$2,805	\$10,857
FA-003	total			kWh		3053	3083	2618	2055	2097	2444	3308	2280	4980	5053	7604	6012	44587		
				kW		4.1	4.5	3.6	2.8	2.9	3.3	4.5	3.1	6.9	6.8	10.5	8.1	61.1		
				electric \$ (inc. tax, fees)		\$329	\$347	\$297	\$243	\$250	\$302	\$339	\$252	\$493	\$476	\$670	\$536	\$4,280		
				Select a heating fuel		1429	987	1171	0	0	0	0	0	0	1020	675	1375	6656		
				heating \$ (inc. tax, fees)		\$2,139	\$1,459	\$1,732	\$0	\$0	\$0	\$0	\$0	\$0	\$2,081	\$1,377	\$2,805	\$11,593		

NOT APPLICABLE

Building information		Monthly billing data or measured energy generation			
Building ID	Type of energy consumed OR Type of energy generated (include source/fuel; e.g. hot water from solar thermal, or electricity from biogas from wastewater treatment)	Type of energy consumed/generated	2006 total	2007 total	2008 total
		(enter units here)	0		
		energy \$ (if consumed)	\$0		
		(enter units here)	0	0	0
		energy \$ (if consumed)	\$0	\$0	\$0
		(enter units here)	0	0	0
		energy \$ (if consumed)	\$0	\$0	\$0
		(enter units here)	0	0	0
		energy \$ (if consumed)	\$0	\$0	\$0
		(enter units here)	0	0	0
		energy \$ (if consumed)	\$0	\$0	\$0

NOT APPLICABLE

Lighting information				Utility billing data					
Lighting ID	Type	Total pole wattage (W)	Number of poles	Types of energy consumed	Name of utility	Utility monthly cost per pole (if applicable)	2006 total	2007 total	2008 total
FA-L01	Streetlights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L02	Traffic lights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L03	Area lights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L04	Decorative lights			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L05	Other lighting 1			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0
FA-L06	Other lighting 2			kWh			0	0	0
				kW			0	0	0
				electric \$ (inc. tax, fees)			\$0	\$0	\$0

INSTRUCTIONS

Infrastructure

Information about municipal infrastructure should be filled in on two tabs -- "Infra Lighting" and "Infra Water"

Lighting tab

Each row begins with a unique ID number which should not be changed.

We have identified four main types of municipal lighting: streetlights, traffic lights, area lights (e.g., parks, parking lots, sports fields) and decorative lights.

If all examples of a certain type can be considered together (e.g. all streetlights are the same), then they may be entered in one row.

If all examples of a certain type cannot be considered together, or if an additional type is discovered, use the provided "Other Lighting" rows.

- **Please change the name** from "Other Lighting" to something descriptive about the lights in question.
- The names given for records L01 through L04 (street, traffic, area, decorative) can also be changed if necessary.

For each type, please supply the following information from the past 36 months of utility bills:

- Total electric usage (kWh) per month for all poles if available
- Total electric demand (kW) per month for all poles if available
- Total electric cost (\$) per month for all poles, including all taxes and fees

If the poles are not separately metered and monthly data are not available, we will use the information you provide about rate schedules, number of poles

Water tab

Each row begins with a unique ID number which should not be changed.

We have identified three main types of municipal water energy usage: wastewater treatment plants, freshwater pumphouses and sewage lift stations.

If all examples of a certain type can be considered together (e.g. all pumphouses are the same), then they may be entered in one row.

If all examples of a certain type cannot be considered together, these can be entered in the provided rows.

- Ten pumphouse rows and 10 lift station rows have been provided, as well as "Other Water" rows.
- If two or more instances of a type are essentially the same, they can be entered on the same row. Please change the quantity in the Number column.

If a pumphouse is not metered separately from the municipal building in which it resides, you do not need to enter billing data on this tab.

NOT APPLICABLE**Water information****Utility billing data**

Infrastructure ID	Type	Gallons per month	Number of stations	Types of energy consumed	Name of utility	2006 total	2007 total	2008 total
				kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W01	Wastewater treatment plant			Select a heating fuel		0	0	0
				heating \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W02	Freshwater pumphouse 1			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W03	Freshwater pumphouse 2			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W04	Freshwater pumphouse 3			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W12	Sewage lift station 1			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W13	Sewage lift station 2			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W14	Sewage lift station 3			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W22	Other water 1			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W23	Other water 2			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0
FA-W24	Other water 3			kWh		0	0	0
				kW		0	0	0
				electric \$ (inc. tax, fees)		\$0	\$0	\$0

INSTRUCTIONS

Fleet

Information about the municipal fleet should be filled in the "Fleet" tab.

Fleet tab

At the top of the spreadsheet is a table to record total liquid fuel consumption for the past three years, as well as total number of plug-in vehicles in service. Beneath this is a table into which you can enter all of the municipality's vehicles.

Please select the appropriate vehicle type from the drop-down list.

- If the correct vehicle type does not appear, or if you want to be more specific, new types can be entered in cells A529-A530 on the *Fleet* tab.

If all examples of a certain type can be considered together (e.g. all fire trucks are the same make and model), then they may be entered in one row.

- In this event, please change the quantity in the "Number of ..." column and **sum the mileage and fuel consumed** for all vehicles of that type.
- If the vehicles are *essentially* the same but might have different models, they can be included in the same column.

If records are available regarding gallons of fuel consumed per vehicle, please include this information as well.

If three years of data are not available, please include as many years of data as are available.

Fleet information

	2006	2007	2008
Total gasoline purchases (gallons)	0	0	0
Total diesel purchases (gallons)	1001	1001	1001
Total number of plug-in electric vehicles in operation			

Vehicle type/ category	Make	Model	Number of vehicles of this model	Total miles traveled 2006	Total miles traveled 2007	Total miles traveled 2008	Fuel type	Total gallons per year	location	year
Dump truck	INTERNATIONAL	PATROL TRK	1	3376			diesel	936	Sauk Co.	2006
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	65	Sauk Co.	2006
					1001					
Dump truck	INTERNATIONAL	PATROL TRK	1		3376		diesel	936	Sauk Co.	2007
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	65	Sauk Co.	2007
						1001				
Dump truck	INTERNATIONAL	PATROL TRK	1			3376	diesel	936	Sauk Co.	2008
Small diesel/Groundskeeping	Ford New Holland	mower	1				diesel	65	Sauk Co.	2008
								1001		

Type of energy consumed	Data		
	Sum of 2006 total	Sum of 2007 total	Sum of 2008 total
electric \$ (inc. tax, fees)	13026.52	12990.8	8559.32
heating \$ (inc. tax, fees)	12992.78	15488.44	23186.14
kW	191.5917972	183.7469585	122.1858833
kWh	139602	133790	89174
propane (gallons)	8582.8	6352	6656.4
Select a heating fuel	8582.8	6352	6656.4
Grand Total	182978.4918	175156.987	134354.4459

06-08 increase

-34%

78%

-36%

-22%

07-08 increase

-34%

50%

-33%

5%

Energy use by year

		2006	2007	2008
kWh	Buildings	5,061	5,095	5,227
<i>kWh generated</i>	<i>Buildings</i>	0	0	0
Propane (gallons)	Buildings	351	494	480
Gasoline	Vehicles	0	0	0
Diesel	Vehicles	1,001	1,001	1,001
Dollars	Buildings	26,019	28,479	31,745
	Gasoline	926	1,408	1,565
	Diesel	2,807	2,807	2,807
MMBtus		192	206	205

Annual changes in MMBtu consumption

% growth	2006	2007	2008
2006 --		8%	7%
2007	--		0%
2008		--	

2008 energy use baseline in MMBtus

	energy consumption of given type	in MMBtus	% of total	in lbs CO2		
kWh	5,227	18	9%	8,844	24%	1.5
Therms	440	44	22%	5,148	14%	1.6577
Gasoline	0	0	0%	0	0%	1.287517
Diesel	1,001	139	69%	22,392	62%	2.44949
Dollars	36,117					
<i>Totals</i>		201		36,384		

2008 energy use baseline by end use

	MMBtu	
Buildings	66	32.12%
Fleet	139	67.88%
<i>Total</i>	205	

Electricity Consumed for the Town of Fairfield - Alliant Energy customers

Sum of Use kWh or CF		Revenue Class Year					BILLED CO USE (100) Total
Fuel Type	Month	BILLED CO USE (100)					
		2004	2005	2006	2007	2008	
E	1	566	1780	813	934	1142	5235
	2	936	1416	531	1789		4672
	3	622	1244	732	1111	1022	4731
	4	389	923	285	714	262	2573
	5	170	545	208	248	47	1218
	6	51	174	69	56	16	366
	7	54	51	61	51	15	232
	8	48	55	48		17	168
	9	59	58	89		35	241
	10	178	59	35	105	18	395
	11	665	165	567	30		1427
	12	1007	842	1051	851		3751
E Total		4745	7312	4489	5889	2574	25009
Grand Total		4745	7312	4489	5889	2574	25009

Electricity Consumed for the Town of Fairfield - Alliant Energy customers

Sum of Use kWh or CF		COMMERCIAL (20)					COMMERCIAL (20) Total
Fuel Type	Month	2004	2005	2006	2007	2008	
E	1	7438	7674	2742	1931	4429	24214
	2	7389	6959	2977	8259	4312	29896
	3	7154	7859	2807	4205	3490	25515
	4	7351	6663	2959	2610	2651	22234
	5	8105	6956	2218	2262	2711	22252
	6	7590	7441	2476	4594	4053	26154
	7	6137	4958	3394	2852	2411	19752
	8	4714	5140	1456	2996	2190	16496
	9	7942	6726	1362	2534	2880	21444
	10	7621	2077	4782	4723	3573	22776
	11	7047	1239	3986	3036	3854	19162
	12	7199	1208	1902	4845	3658	18812
E Total		85687	64900	33061	44847	40212	268707
Grand Total		85687	64900	33061	44847	40212	268707

Electricity Consumed for the Town of Fairfield - Alliant Energy customers

Sum of Use kWh or CF		FARM (10)					FARM (10) Total
Fuel Type	Month	2004	2005	2006	2007	2008	
E	1	42657	45824	41412	39483	43612	212988
	2	40351	32076	34591	42049	41071	190138
	3	31990	36074	29148	35681	32683	165576
	4	28854	25046	27432	27356	23131	131819
	5	24869	24419	24475	22806	22161	118730
	6	24299	27299	29749	29921	26773	138041
	7	28005	39599	34874	32874	31552	166904
	8	29609	32364	35625	37727	29927	165252
	9	32284	34735	28175	29558	29742	154494
	10	24836	26875	24699	34628	17793	128831
	11	26938	38533	28312	28585	30124	152492
	12	30076	32344	32757	31378	28569	155124
E Total		364768	395188	371249	392046	357138	1880389
Grand Total		364768	395188	371249	392046	357138	1880389

Electricity Consumed for the Town of Fairfield - Alliant Energy customers

Sum of Use kWh or CF		RESIDENTIAL (1)					RESIDENTIAL (1) Total	Grand Total
Fuel Type	Month	2004	2005	2006	2007	2008		
E	1	80797	87343	73543	78725	82806	403214	645651
	2	74065	62556	63296	79474	77184	356575	581281
	3	63077	70660	57791	65388	61470	318386	514208
	4	58958	50108	54037	55977	57339	276419	433045
	5	54178	51420	50702	53586	55127	265013	407213
	6	56709	57221	64925	64546	55137	298538	463099
	7	64649	86055	77454	74435	76836	379429	566317
	8	69067	70253	74376	80106	73962	367764	549680
	9	64466	69624	60833	63045	69136	327104	503283
	10	52114	59059	52549	70763	49349	283834	435836
	11	57543	57915	57013	57765	61796	292032	465113
	12	68720	68376	67837	65329	70497	340759	518446
E Total		764343	790590	754356	809139	790639	3909067	6083172
Grand Total		764343	790590	754356	809139	790639	3909067	6083172

Electricity Consumed for the Town of Fairfield - Adams Columbia Electric Coop Customers

Fairfield Township kWh Usage 2008

No.	Rate Code	Total kWh		
322	21 Residential	3,462,364.0	Residential	3462364
24	23 Commercial	426,326.0	Commercial	426326
1	34 General 3 Phase	128,240.0	Electrical Transformers	128240
36	42 Seasonal	201,423.0	Seasonal	201423
2	DF Dairy Farms	101,604.0	Dairy Farm	101604
	Totals	4,454,359.0		

Appendix B: Community Survey Results

Town of Fairfield Pig Roast and Energy Fair

October 4, 2009

Survey Results

N = 67

1.) What future energy conservation or renewable energy opportunities are you considering for your home or business?

38 Reduce light, heat, and water use	29 Energy Star appliances
33 CFL light bulbs	18 Solar
18 Programmable thermostat	21 Wind
19 Energy assessment/evaluation	12 Geo-thermal
25 Weatherization	0 None
26 Insulation improvements	10 Other
	Wood furnace - 2 Garden - 1
	Solar tubes - 2 Compost - 1
	Drive less - 1 Less prepared food - 1
	Recycle - 1 Wall meter - 1

The efforts already completed

31 Reduce light, heat, and water use	21 Energy Star appliances
32 CFL light bulbs	1 Solar
14 Programmable thermostat	0 Wind
5 Energy assessment/evaluation	1 Geo-thermal
18 Weatherization	0 None
30 Insulation improvements	13 Other
	Wood furnace - 4 Compost - 1
	Pellet burner - 2 Less prepared food - 1
	Drive less - 1 LED bulbs - 1
	Recycle - 1 New windows - 1
	Garden - 1

2.) What resources would help you reduce your energy consumption or increase your power generation at your home or business? (Please check all that apply.)

35 General information on energy conservation and renewable energy options

24 Technical information on installation etc.

48 Financial incentives (i.e. rebates, tax incentives)

3 None

4 Other New outside door - 2; On-site audit - 1; D.C. Facilities Management - 1

3.) Do you support the Town of Fairfield's current efforts to reduce energy consumption and utilize renewable energy sources? Yes - 62 No - 3 N/A - 2

- Need more information
- Do not know too much of what they have done.
- What are they doing to reduce energy consumption?

What additional energy initiatives (if any) should the Town consider?

- Wind and solar geothermal
- Expand "time of day" service that Alliant/WP&L offers
- Legalize electric golf carts/cars here and in Baraboo
- Stop mowing shoulders of roads (huge waste)!
- Wind? Cow manure?
- Could the Town have a monitor like Kathy available at the Town Hall instead of just the library?
- Making it legal to reuse gray water
- Yard lights - change to high energy efficiency
- Wind turbines (2)
- Wind and solar power
- Discourage 24 hour outdoor lighting (2)
- Require electric company to spend some of share money to help people set up their own windmill or solar panel. Also furnish specific hands-on help and buy excess energy from private customers.
- Geothermal at Town Hall
- Reuse "gray water" (i.e. bathtub, washing machine)
- Stop or reduce lawn mowing and maintenance
- Wind mills/turbines (2)

Other comments:

- We have replaced our 23 year old furnace (tax incentive) and water heater! Also now use dishwasher. Installed energy light bulbs.
- Thank you - nice program!
- Great event - thank you!

Names/Addresses/E-mail addresses of attendees:

Craig Payne		cpayne@jvl.net
Tom Luther		
		dkusyk@centurytel.net
Ron Lehman		
Harlan Knoop	E11923 Bent Tree Drive	
R & J Peterson		
Diane & Bob Asam		
John & Josefina Schreck	E13780 Levee Road	
Steve & Diana Haertel	E13514 Levee Road	dhaertel@centurytel.net
Kevin & Carol Olson		olsonfam44@centurytel.net

Rob Fichter		fichterrob@jvlnet.com
Jeffory & Maria Buchacher		
Rod & Jackie Sprecher	E12166 Side Road	
Delbert & Judy Olson		judy_o@centurytel.net
Aleasha Anderson		writealeasha@yahoo.com
Matt Anderson		matta33178@yahoo.com
Ken & Pat Carlson		pckc@gmail.com
Brian & Theresa Krusko		krusko@jvlnet.com
Mark Gumz		markgumz@hotmail.com
Mrs. Joe Litscher		
Clyde Moon		clydemon@barabooawning.com
Philip & Lolita Lehman		
Paul Quinn		quinner53@hotmail.com
Jamie & Jacqi Rumels		
Jerry Cummings		
Henry Wedekind	E12654 Twin Oaks Road	
John, Deb, Michaela & Krista Turner		
Gil & Eleanor Fennie		eleanorfennie@centurytel.net
Robert Sloan	S2921A CTH T	
Tom Kriegl		tkriegl1@centurytel.net
Steve & Libby Rundio		srundio@jvlnet.com
Albert Daniel		
Al Follendorf		
Ron Munneke		munneke@centurytel.net
John Schultz		columnistbettylee@centurytel.net
David & Sharon Gritzmacher		
Terry & Pam Putman		twoputs@centurytel.net
Scott Carlino		scars64@netscape.net
Jim & Joan Fedkenheuer		
Neil Caflich	S3607 Gillem Road	
Dave & Gretchen Considine		gretchenflo@yahoo.com
Lynda Lawler		lmlawler@hotmail.com
Duane Hohl		lhohl@stjohnsportage.com
Samuel Goodall & Laura Huttner		sr.goodall@hotmail.com
Mike & Sandy Gavin		gavinfamily@centurytel.net
Rick & Nancy Meiller		rmband@centurytel.net
Patsy Rau		
Al DuBois		
Harold Spink		hspink@centurytel.net
John Labeots	S3843 Fairfield Road	
Tom Strachan		williamstrachan@centurytel.net

Appendix C: Energy Center Analysis

Energy Independent Communities

Measure Analysis Inputs

Fairfield

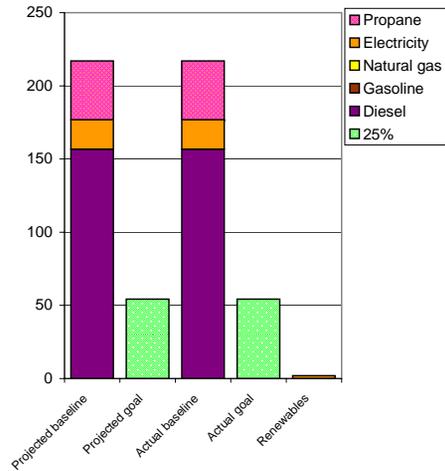
This spreadsheet contains templates into which you can input the information you've gathered about your energy independence measures.

Each template should only contain one measure. A measure can be inputted on a STANDARD or ADVANCED template.

The Energy Center of Wisconsin will perform an economic analysis on these measures based on your inputs.

Be sure to also check the "Assumptions" page for accuracy and completeness. You will need to enter the growth rate you previously determined.

2025 Energy Use

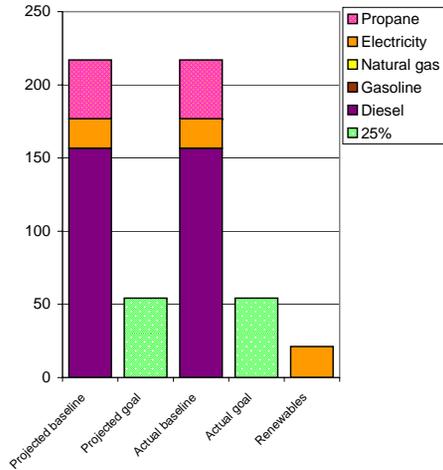


Percent of 25% goal achieved: 4%

Measures

			Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
10%	R	Wisconsin RPS	--	2 kWh	--	--	--	3	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
Off	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
Off	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
Off	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ -	\$ -	\$ -	3
					Baseline lbs CO2:	31,236			
					New lbs CO2:	31,233			
					Reduction:	0%			

2025 Energy Use

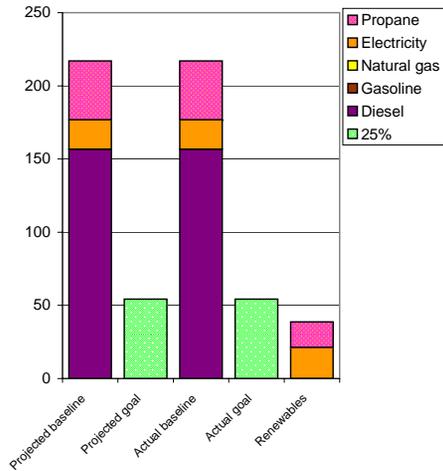


Percent of 25% goal achieved: 39%

Measures

			Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
10%	R	Wisconsin RPS	--	2 kWh	--	--	--	3	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
On	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
Off	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
Off	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ -	\$ -	\$ -	9,526
					Baseline lbs CO2:	31,236			
					New lbs CO2:	21,710			
					Reduction:	30%			

2025 Energy Use

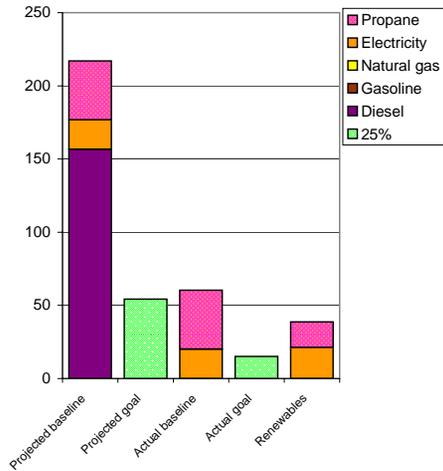


Percent of 25% goal achieved: 71%

Measures

		Name	Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
10%	R	Wisconsin RPS	--	2 kWh	--	--	--	3	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
On	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
On	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
Off	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	11,945
					Baseline lbs CO2:	31,236			
					New lbs CO2:	19,291			
					Reduction:	38%			

2025 Energy Use

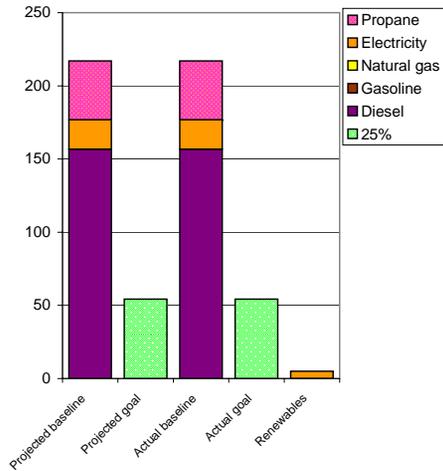


Percent of 25% goal achieved: 256%

Measures

		Name	Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
10%	R	Wisconsin RPS	--	2 kWh	--	--	--	3	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
On	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
On	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
On	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ 106,990.00	\$ 15,628.50	\$ 83,816.94	34,338
					Baseline lbs CO2:	31,236			
					New lbs CO2:	-3,101			
					Reduction:	110%			

2025 Energy Use

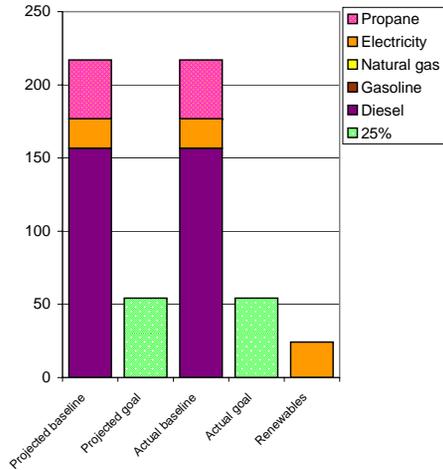


Percent of 25% goal achieved: 9%

Measures

		Name	Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
25%	R	Wisconsin RPS	--	5 kWh	--	--	--	8	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
Off	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
Off	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
Off	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ -	\$ -	\$ -	8
					Baseline lbs CO2:	31,236			
					New lbs CO2:	31,228			
					Reduction:	0%			

2025 Energy Use

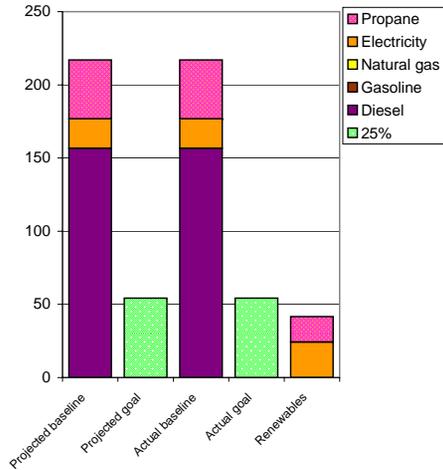


Percent of 25% goal achieved: 45%

Measures

			Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
25%	R	Wisconsin RPS	--	5 kWh	--	--	--	8	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
On	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
Off	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
Off	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ -	\$ -	\$ -	9,531
					Baseline lbs CO2:	31,236			
					New lbs CO2:	21,705			
					Reduction:	31%			

2025 Energy Use

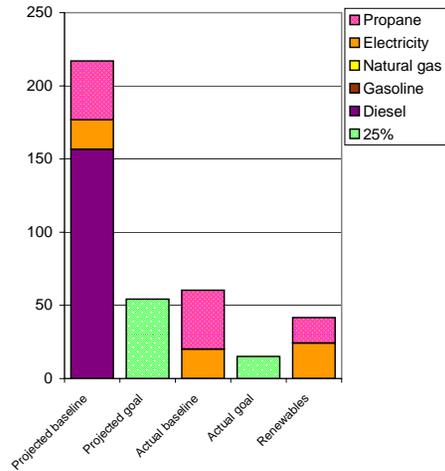


Percent of 25% goal achieved: 77%

Measures

		Name	Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2	
25%	R	Wisconsin RPS	--	5 kWh	--	--	--	8	
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-	
On	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523	
On	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419	
Off	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392	
					Total:	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	11,950
					Baseline lbs CO2:	31,236			
					New lbs CO2:	19,286			
					Reduction:	38%			

2025 Energy Use



Percent of 25% goal achieved: 276%

Measures

			Savings-to-investment ratio	Savings	Installed cost before incentives	Incentive amounts	Present value cost with incentives	lbs CO2
25%	R	Wisconsin RPS	--	5 kWh	--	--	--	8
0	R	Purchased renewable electricity	#DIV/0!	0 kWh	\$ -	--	\$ -	-
On	R	Photovoltaic Panels on Town Hall	0.23	5628 kWh	\$ 36,200.00	\$ 11,256.00	\$ 33,506.03	9,523
On	R	Solar Hot Water Assist on Town Hall	0.16	191 gallons propane	\$ 24,290.00	\$ 4,372.50	\$ 15,714.91	2,419
On	E	Convert Fleet to Biofuel Vehicle	0.01	1001 gallons diesel	\$ 46,500.00	\$ -	\$ 34,596.00	22,392
Total:					\$ 106,990.00	\$ 15,628.50	\$ 83,816.94	34,343
					Baseline lbs CO2:	31,236		
					New lbs CO2:	-3,106		
					Reduction:	110%		

Assumptions

2008 Energy Usage, Rates and Generation - Municipal Use ONLY!

	Usage	Index	2008 rates	Existing generation
electricity	5,227 kWh	4	\$ 0.0965 /kWh	kWh
natural gas	therms	7	/therm	therms
unleaded gasoline	0 gallons	9	\$ 3.2600 /gal	gallons
diesel fuel	1,001 gallons	5	\$ 3.9100 /gal	gallons
gallons propane	440 gallons	10	\$ 1.7416 /gal	gallons

Factors

Estimated annual growth rate for municipal energy 0.7%

Purchase renewable electricity from utility

Block size 0 kWh

Incremental cost per block \$ -

Measure name	Photovoltaic Panels on Town Hall		
Measure description	Install 22 Kyocera KD 210 (watt) gX-LP panels (4.62 kW) on a UniRac roof mounting system		
Total installed cost	\$ 36,200.00	In 2009 dollars	What it costs to install this measure. If it's an upgrade to something already planned—i.e., building a library but now building it to LEED standards—then this is the difference between the costs of the standard design and the energy-efficient design.
Financial incentives	\$ 11,256.00	Focus on Energy	If you expect financial incentives such as grants to be applied to this measure, you can include their sum here. (<i>Total installed cost</i> should <i>not</i> include any potential grants.)
Annual energy savings		units	The energy saved by an energy efficiency measure or the energy generated by a renewable measure, stated in whichever units are appropriate—kWh, therms, etc. This will typically be either/or.
Annual energy generated	5628	kWh	
Measure life	35	years	How long the measure will accrue energy savings or generate energy before it must be replaced.
Measure install date	Year	% completion	
		2012	25%
		2017	50%
		2022	100%
			The year you expect energy savings/generation from the measure to come online. If completed in one year, enter just one year, and 100% beside the year. Otherwise, use the table (i.e., streetlights replaced over many years).

Measure name	Solar Hot Water Assist on Town Hall		
Measure description	Install three 4x10 flat plate panel collectors on roof mounted array with stand off legs (Alternative Energy Technologies AE-40 is the specific panel on which this analysis is based). Also installed would be a 120 gallon solar storage tank, and all other associated materials - this is included in the cost.		
Total installed cost	\$ 24,290.00	In 2009 dollars	What it costs to install this measure. If it's an upgrade to something already planned—i.e., building a library but now building it to LEED standards—then this is the difference between the costs of the standard design and the energy-efficient design.
Financial incentives	\$ 4,372.50	Focus on Energy	If you expect financial incentives such as grants to be applied to this measure, you can include their sum here. (<i>Total installed cost</i> should <i>not</i> include any potential grants.)
Annual energy savings		units	The energy saved by an energy efficiency measure or the energy generated by a renewable measure, stated in whichever units are appropriate—kWh, therms, etc. This will typically be either/or.
Annual energy generated	190.9388646	gallons propane	
Measure life	40	years	How long the measure will accrue energy savings or generate energy before it must be replaced.
Measure install date	Year	% completion	The year you expect energy savings/generation from the measure to come online. If completed in one year, enter just one year, and 100% beside the year. Otherwise, use the table (i.e., streetlights replaced over many years).
	2018	100%	

Measure name	Convert Fleet to Biofuel Vehicle	
Measure description	Replace the Sauk County tractor that is used for maintenance in the Town of Fairfield with a Ford/New Holland t6020 tractor	
Total installed cost	\$46,500	What it costs to install this measure. If it's an upgrade to something already planned—i.e., building a library but now building it to LEED standards—then this is the difference between the costs of the standard design and the energy-efficient design.
Financial incentives		If you expect financial incentives such as grants to be applied to this measure, you can include their sum here. (<i>Total installed cost</i> should <i>not</i> include any potential grants.)
Annual energy savings	1001	The energy saved by an energy efficiency measure or the energy generated by a renewable measure, stated in whichever units are appropriate—kWh, therms, etc. This will typically be either/or.
Annual energy generated	diesel fuel units	
Measure life	20 years	How long the measure will accrue energy savings or generate energy before it must be replaced.
Measure install date	Year	% completion
	2020	100%

The year you expect energy savings/generation from the measure to come online. If completed in one year, enter just one year, and 100% beside the year. Otherwise, use the table (i.e., streetlights replaced over many years).