MUNICIPAL ENHANCED ENERGY ELEMENT TEMPLATE

4/20/2017

Windham Regional Commission’s

Act 174Technical Assistance to Municipalities

Note: In addition to drafting this energy element, the remainder of the town plan needs to be examined so as to be consistent with the policies proposed in this energy element. For Act 174 standards compliance, the entire town plan will be checked and cross-referenced for policy consistency. Also, this should be of importance to planners in the context of how the plan would be used in the Section 248 process, which references “land conservation measures and specific policies.”

*Importance of Enhanced Energy Planning*

*Introduction*

Energy planning is important to TOWN because (town-specific examples and reasons). Though Vermont’s energy transformation may take years to implement, it will enhance the vitality of the state and local economy by reducing money spent on fuels pumped, mined or generated elsewhere, improve our health through reduced emissions and increased bicycle and pedestrian mobility options, and improve the quality of our local and global environment through reduced greenhouse gas emissions. This robust energy plan is used as a tool to advance the economic and environmental well-being of TOWN, thereby improving the quality of life for its residents. Furthermore, these energy goals will reduce TOWN’s vulnerability to energy-related economic pressures and, in the long-term, climate change-related natural disasters, and promote long-term community resiliency in a variety of contexts.

The cost of energy in TOWN, including residential, commercial and governmental use (for heating, electricity, transportation, etc.) is estimated to be \_\_(use figures from calculations)\_\_\_ per year (see *Energy Costs & Expenditures* section below). Because a large majority of this energy is imported from outside of the town and Windham Region, most of the money spent on energy does not directly benefit the local economy. Efforts to reduce the use of energy sources from outside the Town, or shift reliance to locally produced energy, can improve household financial security and strengthen the local economy.

From an environmental perspective, petroleum and other hydrocarbon-dependent energy is a significant cause of localized environmental damage where those fuels are produced and refined, and the emissions from their use is responsible for human-induced climate change, related climate-change disasters, and ecological degradation. Any efforts to reduce the use of non-renewable energy and shift to more environmentally-sound energy sources will benefit the town’s environment by \_(some town-specific examples)\_\_\_\_\_\_\_.

While TOWN can do little to shift the broader state or federal policies, we can influence energy use and production on a local level. In this energy plan, we hope to address TOWN’s local actions for increasing our energy efficiency and promoting renewable energy generation, and overall pathways to become more resilient.

*Long-Term Vision & Petroleum Dependence*

There is a trend toward factoring the “societal costs” into the price of energy; society pays for health costs associated with pollution, environmental clean-up, military protection of petroleum sources, and the continued failure of the Federal government to address the disposal of radioactive wastes. And in the long-term, communities who depend on fossil-fuels are vulnerable to risks associated with their price and production volatility.

These challenges may significantly increase the cost of conventional energy sources within the next ten to twenty years. As a result, TOWN will seek to establish reliable energy resources for townspeople and municipal operations, to hedge against the increasing volatility of hydrocarbon prices, and to reduce the environmental impact of our energy use. The role of clean, alternative energy sources will be expanded and supported.

*2. TOWN’s Current Energy Use [Londonderry]*

The following paragraphs describe TOWN’s current estimated energy demand in detail. These current use estimations provide a starting point from which the town can develop informed energy policies that directly address its current context and opportunities going forward.

In order to provide a more accurate picture of the energy planning requirements in TOWN, energy consumption, generation targets, and efficiency targets need to be broken down into three distinct energy sectors. Those sectors are *electricity, transportation*, and *heating*.

Figure *xx* shows how energy consumed in the town is divided between these sectors. The sections below break down the calculations and describe the assumptions made to arrive at these final demand figures.

*Current Electricity Demand*

TOWN’s electric energy supply comes from (sources of energy, Green Mountain Power? Central Vermont Public Service Corporation?) . *(Include any other relevant information about the transmission line or utility infrastructure that exists).*

Electricity consumption data from Efficiency Vermont was produced for each zip code in the state, and is the primary source of this information. This data set combines the energy supplied from all potential electricity providers to that town. It also separates the usage for both the *residential* and *commercial or industrial* sectors (see Figure xx below).

Though the commercial/industrial sectors use generally more electricity than residential, the two are relatively comparable. *(Include any other observations characterizing TOWN’s electricity use, as per the table above).*

To translate this energy demand into dollar amounts, we can estimate a cost of $0.1435 per kilowatt-hour (Vermont state average for electricity costs across all sectors in 2015). Based on the above data, residences in town paid almost $XXXX dollars in 2014 for XXXX kWh. Commercial and industrial facilities paid just over $XXXX dollars for their XXXXkWh of electricity. *In TOWN, electricity usage places the highest energy cost burden on its homeowners and businesses.*

*Current Transportation Use*

According to 2010 U.S. Census Bureau data, TOWN has# primary housing units, (not vacant or used for seasonal/recreational purposes). Based on that number of households, it can be estimated that there are # light-duty vehicles on TOWN’s roads, which consume XXXX gallons of fossil fuel each year. Below is a table summarizing the averages and estimates used to arrive at those figures.

|  |  |
| --- | --- |
| XXXX | Number of primary housing units. |
| XXXX | Number of fossil-fuel burning light-duty vehicles (LDV). |
| 12,500 | Estimate of the average annual number of miles travelled by an LDV in the area (for Vermont as a whole, total vehicle miles traveled per registered vehicle was around 12,500. The vast majority of LDV in Vermont can safely be assumed to drive between 9,000 and 15,000 miles annually). |
| 22 | Estimate of the average fuel economy of fossil-fuel burning LDV fleet in the area, in miles per gallon (state-wide average fuel economy). |
| **XXXX** | **Estimated number of gallons of fossil fuel consumed annually, calculated from the values above.** |
| XXXX | Number of Btu in a gallon of fossil fuel, computed as a weighted average of the individual heat contents of gasoline (95%) and diesel (5%). |
| **XXXX** | **This is the estimated total annual energy consumption of internal combustion vehicles in the area, in millions of Btu.** |

To estimate the cost of this consumed energy, we assumed a cost of $2.34 per gallon (Vermont state average in 2015). In TOWN, consumers spent over $X million on transportation related fuel costs alone.

*Current Heating Demand*

To account for the different building types and their respective uses, the following estimates divide thermal energy demand by either residential or commercial use (industrial building thermal demand is not included).

For residential buildings, it was assumed that average annual heating load of area residences is 110 million Btu, for both space and water heating (Vermont state average). With XXXX primary housing units in the town, this arrives at an estimated XXXX MMBtu annual total heat consumption.

Furthermore, census data also provides information on the home heating fuels used for both owner-occupied and renter-occupied housing units (both are considered “occupied”). Figure xx below shows a comparison of owner and renter-occupied housing units and their respective fuel use.

For both housing unit ownerships, an estimated total of just over $X MILLION was spent in home heating (roughly $X million from home owners and $XXXX from renters). *(Include any other observations about why this may be important for your town).*

In TOWN, there is also a high percentage of seasonal homes (X% of housing units are primary/“occupied” homes, while X% are seasonal/“vacant” homes). Based on the energy model projections from the state (created by the LEAP, or Long-Range Energy Alternatives Planning model), it can be assumed that seasonal homes only use about 15% of the energy of a primary home, due to more occasional use and a presumed higher energy efficiency. As such, seasonal homes in town are estimated to consume about XXXX MMBtu annually (compared to the XXXX MMBtu for primary residences).

For commercial establishments, it is estimated that the total heating load is XXXX MMBtu each year. For the state, the average is in the range of 700 MMBtu to 750 MMBtu per year but the average for any given area is very likely to be significantly higher or lower, as the mix of businesses from region to region is highly variable. Based on the types of commercial buildings in TOWN, the heating load was calculated to be less than state average. With XX commercial establishments, there is an estimated thermal energy demand of XXXX MMBtu. These businesses pay about $XX million each year in heating expenses.

*Total Energy Costs*

In sum, TOWN pays a staggering amount in energy across the three use sectors. The total estimated cost to the town for electricity, heating, and transportation is roughly $XXXX million dollars each year. There are real financial incentives for the town to move toward energy efficiency, on behalf of both the residents and its business owners (see section “*4. Energy Scarcities, Challenges, and Strategies*” of this plan for more detail about energy efficiency and conversion targets).

*Insert figure of total energy costs in the three sectors*

*3. TOWN’s Resources, Constraints, & Potential for Energy Generation*

Energy resources within TOWN are all renewable resources: wood, solar, hydro, and wind. In order to reduce dependence on conventional energy sources, of which the costs and availability are outside residents’ control (see the section above), the use and generation of alternative energy sources is encouraged.

*Resource Mapping Process and Policy Tool*

Explanation of what the overall mapping process and exercise is, and how it guides and informs policy.

*Solar Resource Maps*

Explanation of solar maps, includes raw resource potential, known and possible constraints, grid infrastructure, transmission and distribution resources and constraints, and existing generation facilities.

*Wind Resource Maps*

Explanation of wind maps, includes raw resource potential, known and possible constraints, grid infrastructure, transmission and distribution resources and constraints, and existing generation facilities.

*TOWN’s Preferred Locations*

Explanation of the specific areas or parcels for siting a generator, or a specific size or type of generator, accompanied by any specific siting criteria for these locations. Statewide preferred locations (rooftops, parking lots, previously developed sites, brownfields, gravel pits, etc), as well as any other locally-preferred sites (can be determined during municipal mapping exercise).

*Areas Unsuitable for Renewable Energy Siting*

Identification of any areas that are unsuitable for particular categories or sizes of generators, consistent with resource availability and/or land use policies in the regional or municipal plan applicable to other types of land development...

If so, support any local constraints that are supported by data or studies, that are consistent with the remainder of the town plan, and do not include an arbitrary prohibition or interference with the intended function of any particular renewable resource size or type.

*4. TOWN’s Energy Targets and Conservation Challenges]*

The Windham region was given an overall renewable energy generation target, as determined by the Department of Public Service, based on its percentage of the state’s population (which directly affects its share of statewide consumption). The Windham Regional Commission (WRC) then determined energy generation targets for each of their member-towns, based on both the resource availability in town and its population. The resulting town generation targets are an average between those two characteristics.

*Energy Generation Targets*

In TOWN, it is estimated that XXXX megawatt-hours of renewable energy should be generated each year. This figure is an average of XXXX MWh (based on the town’s share of the regional population), and XXXX MWh (based on the percent of regional resource availability). This estimated generation target serves as a starting point from which the town can develop policy to address its energy needs.

To translate this figure into what kinds of installations would be required, XXXX MWh of renewable energy each year would require a total of XXXX kilowatts of solar photovoltaic installations (using the assumption that only solar energy would contribute to the overall energy generation target, not any other generations source). *(Include here any changes, to account for a mixture of renewable energy generation sources. See the Targets\_Generation\_Towns.xls for aid in how to do these calculations).*

On the landscape, this could mean that the town identifies XXXX acres of solar-capable land. This is a very conservative figure; assuming that each mega-watt of energy requires 60 acres (on average, solar installations produce a single mega-watt over 8 acres equating to XXXX acres of actual installations). Using the 60 acres/megawatt energy production rate is for contingency; meaning that it reserves space for landowner, grid, or spatial constraints that may limit development. This ensures enough space would be delineated.

If other renewable energy sources were to be used, this amount of solar photovoltaic installations would decrease. *(Insert here more information about how your town wants to breakdown its overall MWh energy generation targets. Be specific).*

Although renewable energy generation can occur in the town and supply its residents with reliable, affordable, and clean power, the town is challenged by the current amount of energy being consumed. In order to minimize the amount of energy generation required, the town must first develop strategies to reduce the amount of energy consumed.

*Projected Energy Use: LEAP Model Results*

To help inform the town’s policies on energy conservation measures, the town used guidance from the LEAP (Long-Range Energy Alternatives Planning system) model, conducted by the Vermont Energy Investment Corporation as part of the state’s comprehensive energy planning initiative.

The LEAP model is used to guide the state’s regions towards reducing the amount of greenhouse gas emissions and consuming 90% renewable energy by 2050 (referred to as the “90x50” goal). To accomplish the state’s energy goals, there are several interim benchmarks built into the LEAP model which ensure a progressive pace in attaining that “90 x 50” goal. The state energy goals are:

Greenhouse gas reduction goals of 50% from 1990 levels by 2028 and 75% by 2050.

25% of energy supplied by renewable resources by 2025 (25 x 25).

Building efficiency of 25% of homes (80,000 units) by 2020.

Incorporating those goals into the model produced energy generation, conservation, and fuel conversion targets for benchmark dates for all regions in the state, and is informed by the region’s current energy profile. The WRC received the results from this model and was tasked with making those results relevant to its member-towns. The WRC therefore divided its region-wide benchmark targets among its towns based on their population (which is assumed to most directly impact the amount of energy the towns consume).

The following paragraphs and figures show TOWN’s LEAP model results, and how much energy could be conserved in order to reduce the burden of energy generation facilities in the region.

*Residential Heating Conservation & Fuel Conversion*

In order to determine how much energy would have to be conserved or how much fuel conversion to renewable energy, the LEAP model produced both a “Reference” and “90x50” scenarios. The Reference scenario is meant to depict energy use over decades if no major changes were made in our energy profile. It is the “business as usual” scenario. The “90x50” scenario shows one pathway that communities can adopt in order to reduce greenhouse gas emissions, conserve energy, and generate renewable energy so as to meet the state’s goals. This pathway is translated to TOWN’s use, and is shown below. It is another data estimate that serves to help inform the town to develop its own policies for energy conservation and fuel conversion.

Figure xx below shows the LEAP results for TOWN’s residential heating sector. In both the Reference and 90x50 scenarios, energy consumption is modeled to decrease (on account of technological improvements, building innovation, and home efficiency improvements).

However, the 90x50 scenario shows a sharper increase in the amount of energy conserved in residential heating. Figure xx shows how much energy should be conserved, through 2025, 2035, and 2050, to help the town arrive at these energy goals. Not only would energy need to be solely conserved by building efficiency measures, but fuel conversion to more efficient energy sources would be promoted.

In order to attain the renewable energy goals, the following targets have been established for TOWN for years 2025, 2035, and 2050.

* Percent and number of households to be weatherized over benchmark years to meet efficiency targets: XXXX, XXXX, XXXX
* Residential and Commercial Thermal Fuel:
Estimated new efficient wood heat systems overall(in units) in the LEAP 90x50 scenario (this includes both wood stoves and wood pellet burners for homes and businesses).
* Estimated residential and commercial new wood pellet systems (in units) in the LEAP 90x50 scenario: XXXX, XXXX, XXXX
* Estimated new efficient wood heat systems overallfor residential and commercial (in units): XXX,XXXX,XXXX
* Estimated new heat pumpsfor residential and commercial (in units): XXXX,XXXX,XXXX
* Percentage of fuel sourced by renewable energy: XXXX, XXXX, XXXX

 *(Include any other information relevant to your town).*

*Transportation System Changes*

The LEAP model created benchmark targets for both light and heavy duty vehicles, assuming a difference in residential and industrial energy needs and changes over time. Below are the two interpretations of these sector’s efficiencies over time.

Light-duty vehicle consumption represents a larger portion of the total amount of energy consumed by the transportation sector, and there is a large amount of energy conservation required. The LEAP model projects much of this conservation of energy comes from the electrification of the vehicle fleet, especially as market demand changes and technology improves. This reduction in gasoline consumption and electrification of the car motor comes in addition to increased cluster developments and other land use changes that improve the efficiency of our community’s transportation network. *(May be some discussion about this fuel conversion viability in your town…)* The following targets for the years 2025, 2035, 2050 are set for the town’s transportation fuel conversion:

* Estimated number of new electric vehicles for the target years: XXXX, XXXX, XXXX
* Estimated number of biodiesel-powered vehicles for the target years: XXXX,XXXX,XXXX
* Percentage of fuel sourced by renewable energy by the target years: XXXX, XXXX, XXXX

Heavy-duty vehicle consumption doesn’t show the same curves as per light-duty vehicles, since commercial and industrial applications for this vehicle fleet isn’t anticipated to change as much. However, efficiency in this sector is achieved by changing the fuel type for these vehicles from diesel to bio-diesel. *(May be some discussion about this fuel conversion viability in your town…)*

*Electricity Conservation*

Over the benchmark years, electricity rates are anticipated to increase in the Reference scenario, due to a combination of more amenities, appliances, and motors being supplied by electric power, and an increase in the number of people using those products. The 90x50 scenario promotes electricity conservation in the form of energy-efficient appliances, lighting, and heating/cooling. Pursing these upgrades, the town is targeted to save the following in electrical conservation measures for target years 2025, 2035, 2050:

* Number of kilo-watt hours to be conserved, annually, over the target years: XXXX, XXXX, XXXX
* Number of buildings to have upgraded by the target years: XXXX. XXX. XXXX

*Conservation and Efficiency Strategies*

With total energy expenditures in the town in excess of XXXX*(see Current Use, above),* there is considerable opportunity for savings from various energy conservation and improved efficiency measures. Because most of the energy use in TOWN is for private uses (home heating, commuting, etc), savings would accrue primarily to residents. Public education is one of the most effective strategies to bring about savings through energy conservation and improved efficiency, though there are some specific policies that can also move the community in that direction.

Most new construction in TOWN is required to meet or exceed the Vermont Building Energy Standards (for both residential and commercial buildings) through the use of insulation, heating systems, and weatherproof windows and doors. Current building codes provide basic energy efficiency requirements for buildings; however, technology advancements have generated higher standards such as net-zero energy construction standards in which buildings generate as much energy as they consume. Green construction and LEED Construction (Leadership in Energy and Environmental Design) standards promote the use of natural, recycled and durable building materials, as well as energy efficiency. These efficiency standards are also applied to landscaping, advocating for native plantings that are low maintenance.

The siting, design, and construction of buildings strongly influences the amount of energy needed for heating as well as the amount of electricity needed for lighting. Proper subdivision design, building orientation, construction and landscaping provide opportunities for energy conservation such as less vehicular travel, and by designs incorporating passive solar space and domestic hot water heating, natural lighting and photovoltaic electricity production.

Energy savings can be realized by retrofitting existing buildings with insulation, installing high-performance windows and doors to reduce heat loss, weather-stripping, replacing incandescent lights with fluorescent, and using energy efficient appliances. The following programs are available to residents of TOWN:

Southeastern Vermont Community Action (SEVCA): SEVCA is the service provider in Windham County that runs the Weatherization Assistance Program. Weatherization services, which include an energy audit, diagnostic tests, analysis and installation measures, are available at no cost to income-eligible homeowners and renters. SEVCA is also available to help in the event of a heating emergency. They can help purchase oil, kerosene, propane or wood. In addition, they also work with electric companies in order to prevent disconnection and help negotiate payment plans.

Efficiency Vermont: Efficiency Vermont is the State’s provider of energy efficiency services. They provide technical and financial assistance to electrical consumers for the purpose of improving the efficiency of existing and new facilities.

ENERGY STAR Home Rebates: Energy Star Homes meet strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and U.S. Department of Energy. Efficiency Vermont provides free financial, design, and technical to help build an ENERGY STAR qualified home. Benefits of being an ENERGY STAR home include financial incentives such as product rebates; utility savings; higher resale value; increased comfort and air quality; and other environmental benefits.

Vermont Housing Finance Authority’s Energy Saver Loan Program: Administered by Windham Housing Trust, this program offers low interest loan funding for homeowners for an energy audit and improvements specified in the audit.

Transportation-related efficiency strategies are a very significant part of TOWN’s efforts, since it represents a significant portion of the energy demand. Simple changes, such as ride-sharing, combining trips and using alternative transportation, will conserve fuel and reduce wear and tear and maintenance costs on individual vehicles. Fuel efficient and electric cars will use less gasoline and emit less pollution.

Effective land use planning can promote energy conservation. Targeting new development toward areas located close to the community's major roads and existing settlements will minimize the energy consumed by residents commuting, and will reduce the energy required to deliver essential services to residents and businesses.

*5. Energy Goals, Policies, and Action Steps*

**Goal 1: Overarching statement of policy about how TOWN will reduce total energy use by promoting energy conservation and efficiency measures.**

**Policy 1.1: Statement of policy on conservation by individuals and organizations.**

*Action Steps*

1. Example: Convening or sponsoring weatherization workshops.
2. Example: Establishing local energy committees.
3. Example: Encouraging the use of existing utility and other efficiency and conservation programs and funding sources.
4. etc…

**Policy 1.2: Statement of policy that promotes efficient buildings.**

*Action Steps*

1. Example: Promoting compliance with residential and commercial building energy standards for new construction and existing buildings, including additions, alterations, renovations and repairs.
2. Example: Promoting implementation of residential and commercial building efficiency ratings and labeling.
3. Example: Considering adoption of stretch codes.
4. etc…

**Policy 1.3: Statement of policy that promotes the decreased use of fossil fuels for heating.**

*Action Steps*

1. Example: Promote switching to wood, liquid biofuels, biogas, geothermal, and/or electricity.
2. Example: Promote other suitable devices such as advanced wood heating systems and cold-climate heat pumps, or other energy efficient heating systems.
3. Example: Identify potential locations for, and barriers to, deployment of biomass district heating and/or thermal-led combined heat and power systems.
4. etc…

**Policy 1.4: Statement demonstrating town’s leadership by example with respect to the efficiency of municipal buildings.**

*Action Steps*

1. Example: Conduct building audits and weatherization projects in town offices.
2. Example: Conduct building audits and weatherization projects in town offices.
3. etc…

**Policy 1.5: Any other strategies/approaches…**

*Action Steps*

1. Identify….
2. Develop…
3. Examine strategies to…
4. etc…

**Goal 2: Overarching statement of policy on reducing transportation energy demand and single-occupancy vehicle use, and encouraging use of renewable or lower-emission energy sources for transportation.**

**Policy 2.1: Statement of policy on encouraging the increased use of public transit.**

*Action Steps*

1. Example: Participation in events to identify and develop new public transit routes.
2. Example: Promote full utilization of existing routes.
3. Example: Integrate park-and-rides with transit routes.
4. etc…

**Policy 2.2: Statement of policy that promotes a shift away from single-occupancy vehicle trips through strategies appropriate to TOWN.**

*Action Steps*

1. Example: Initiatives for ride-share, vanpool, and/or car-sharing.
2. Example: Develop or increase park-and-rides.
3. Example: Enhancement of options such as rail and telecommuting.
4. etc…

**Policy 2.3: Statement of policy that promotes a shift away from gas/diesel vehicles to electric or other non-fossil fuel transportation options through strategies appropriate to TOWN.**

*Action Steps*

1. Example: Installation of electric vehicle charging infrastructure.
2. Example: Provide education and outreach to potential users.
3. Example: Support non-fossil fuel vehicle availability through outreach to vehicle dealers.
4. etc…

**Policy 2.4: Statement of policy that facilitates the development of walking and biking infrastructure through strategies appropriate to TOWN.**

*Action Steps*

1. Example: Studying, planning for, seeking funding for, and/or implementing improvements that encourage safe and convenient walking and biking.
2. Example: Adopting a “Complete Streets” policy
3. etc…

**Policy 2.5: Statement of policy that demonstrates the municipality’s leadership by example with respect to the efficiency of municipal transportation.**

*Action Steps*

1. Example: Purchasing energy efficient municipal and fleet vehicles when practicable.
2. Example: Installing electric vehicle charging infrastructure.
3. etc…

**Policy 2.6: Any other strategies/approaches…**

*Action Steps*

1. Identify….
2. Develop…
3. Examine strategies to…
4. etc…

**Goal 3: Overarching statement to promote appropriate land use patterns and development densities that result in the conservation of energy.**

**Policy 3.1: Statement of land use policy(ies) (and description(s) of current and future land use categories) that demonstrate a commitment to reducing sprawl and minimizing low-density development.**

*Action Steps*

1. Example: Adopting limited sewer service areas.
2. Example: Identifying maximum building sizes along highways
3. Example: Develop policies or zoning that require design features that minimize the characteristics of strip development.
4. Etc…

**Policy 3.2: Statement of policy that strongly prioritizes development in compact, mixed-use centers when physically feasible and appropriate to the use of the development, or identify steps to make such compact development more feasible.**

*Action Steps*

1. Example: Designate village centers, downtowns, neighborhoods, new town centers, or growth centers.
2. Example: Identify water or sewage solutions that enable compact development.
3. Etc…

**Policy 3.3: Any other strategies/approaches…**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Goal 4: Locate zones and/or areas appropriate for renewable energy generation based on resource potential and development constraints.**

**Policy 4.1: Statement of policy on** **generation potential, through the mapping exercise, to determine potential from preferred and potentially suitable areas in the municipality?**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Policy 4.2: Statement of policy that identifies sufficient land in the municipality for renewable energy development to reasonably reach 2050 targets for renewable electric generation, based on population and energy resource potential, accounting for the fact that land may not be available due to private property constraints, site-specific constraints, or grid-related constraints.**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Policy 4.3: Statement of policy that ensures any local constraints do not prohibit or have the effect of prohibiting the provision of sufficient renewable energy to meet state, regional, or municipal targets.**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Policy 4.4: Statement of policy to accompany maps (could include general siting guidelines), including statements of policy to accompany any preferred, potential, and unsuitable areas for siting generation.**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Policy 4.5: Statement of policy to maximize the potential for renewable generation on preferred locations (such as the categories outlined under 11E [Municipal Standard 12E] in the Mapping standards).**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Policy 4.6: Statement of policy to demonstrate the municipality’s leadership by example with respect to the deployment of renewable energy.**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…

**Policy 4.7: Any other strategies/approaches…**

*Action Steps*

Identify….

Develop…

Examine strategies to…

etc…