



# Energy Conservation (Theme 8)<sup>1</sup>

## *Statement of Ideal*

***Address our local energy consumption through efficiency, conservation and sustainability.***

### ***What does this Theme address:***

- 8.1 - Alternative Energy and Energy Reductions***
- 8.2 - Sustainable Land Use Patterns***
- 8.3 - Clean Alternative Transportation Options***
- 8.4 - Building Energy Efficiencies***
- 8.5 - Infrastructure***

## **Why is this theme addressed?**

At first glance, it may seem odd to discuss energy conservation in a comprehensive plan – a document typically reserved for governing land uses within a community. However, in considering that transportation and buildings constitute 95% of the community’s energy impacts, the linkage is clear. In order to meaningfully effect energy usage and emissions in the long term, land uses, energy use and transportation planning must be comprehensively addressed.

The community believes that climate change imposes unacceptable impacts on our wildlife and natural resources. Stewardship of wildlife and the natural environment is the community’s top priority and the basis of sustainability. As the climate changes it enables the invasion of non-native species and weakens

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<sup>1</sup> Rec 50: (County 4-0, Town 7-0) Add a Theme: Energy Conservation - and have Staff compile principles and policies that belong in the new theme and relocate principle 1.3 into the new theme

the ability of native species to thrive. Stewardship of natural resources requires that we focus on how the community and region can avoid, accommodate and aid in ecosystem adaptation in the face of a changing climate. The community must limit climate-changing activities by conserving energy and water; but also by preserving habitat to give wildlife the best chance to adapt to a changing climate.

The use of non-renewable energy sources contributes to climate change by increasing greenhouse gas emissions. Energy costs to the community will continue to increase if we continue to rely on diminishing non-renewable energy supplies. A land use and transportation strategy that relies on diminishing energy resources will be particularly difficult on lower income and working families as energy costs rise. Energy costs are also greatly impacted by the energy demand generated by development patterns. Sprawling development patterns increase infrastructure, service delivery and transportation costs for residents. Further, by reducing energy consumption the community reduces its reliance on foreign non-renewable energy sources. Thereby increasing our energy security position and creating benefit to our national security.

With approximately 3-million visitors a year, we have the opportunity to increase Jackson Hole's value as an international destination by combining our outstanding natural beauty with a world class energy sustainability model. Jackson Hole's global destination value will be enhanced by maximizing energy efficiency and demonstrating the "how and why" for the millions of people who travel through this valley every year.

Jackson Hole's awareness of the importance of energy conservation has recently gained momentum with the signing of the U.S. Mayors Climate Protection Agreement. This was followed by the establishment of the 10 X 10 initiative and then the creation of the Energy Efficiency Advisory Board. The leaders of this community then entered into an unprecedented agreement with Lower Valley Energy; committing both to meeting community energy reduction goals. This venture resulted in a community wide energy and emissions inventory that will help the community plan going forward. Moving forward the community realizes it has a local responsibility to address the impacts of climate change on our ecosystem.

## Principles and Policies

### Principle 8.1— Reduce use of non-renewable energy

*Reduced consumption of non-renewable resources for climate and financial reasons can be addressed on a daily basis by each member of the community. In addition, the community will increase the use and production of alternative energies to further reduce our use of non-renewable energy.*

#### Policy 8.1.a: Shift community energy consumption behavior

Energy conservation means demanding less output from our energy sources. Achieving community wide energy conservation is the task of every member of the community with each energy use decision made. The community commits to shifting its behaviors to demand less energy. Modern technological devices such as home area networks raise awareness of the amount of energy being used so people know what behaviors need to change. The Town and County will encourage the distribution and use of such devices.

#### Policy 8.1.b: Encourage energy conservation through energy pricing

A significant motivator in all decisions including energy conservation is money. The town and county will work with local energy providers to develop a sliding scale energy pricing structure. The pricing structure will be set

up to reward energy consumers contributing to the community goals of conservation and efficient use of energy.

**Policy 8.1.c: Increase local use and generation of alternative energy**

Solar, Wind, Geothermal, Hydro and Waste-to-Energy are all available local energy resources, that are renewable and reduce consumption of nonrenewable energy. The community will work with the local electrical utility and other local agencies, non-profits, and businesses to identify local renewable energy generation opportunities. The Town and County will support the development and integration of renewable energy into the community energy portfolio.

**Policy 8.1.d: Allow and encourage home based alternative energy generation.**

Production of energy from renewable sources at each home will have the cumulative effect of reducing reliance on nonrenewable energy. The Town and County will avoid regulatory barriers to the generation of renewable energy at home so long as other community values are not sacrificed. This may include exempting solar panels from non-reflectivity requirements or exempting certain home based wind turbines from height restrictions. Both jurisdictions should also create incentives for the provision of home based alternative energy.

**Principle 8.2— Increase energy efficiency through land use**

*The community is aware of the importance of land use planning and land use patterns as they affect our wildlife natural resources. In addition, land use choices also have a great effect on the community's overall energy consumption. Energy efficiency achieves the same result through use of less energy. Compact mixed-use development and redevelopment requires less energy consumption and will assist the community in meeting our energy conservation goals.*

**Policy 8.2.a: Protect Critical Habitat and Natural Resources for Ecosystem Adaptation**

The community has always acknowledged the importance of protecting wildlife habitat and natural resources. This has heightened importance given that human activities to date have already resulted in some measure of climate change that is affecting the community's goal of maintaining healthy populations of all native species. This raises the importance of protecting remaining habitats and natural resources such as large intact forest stands and wetlands that help the ecosystem adapt to the effects of climate change. The community commits to maximizing the protection and enhancement of wildlife habitat and natural resources that aid in ecosystem adaptation.

**Policy 8.2.b: Encourage mixed use, compact and connected land use patterns**

Mixed-use neighborhoods contain the greatest potential for low energy consumption living because of the close proximity of residences to services and jobs. Preservation and enhancement of this land use pattern in the Town and County will lead to energy conservation through the reduction of motor vehicle miles traveled and consolidation of waste disposal requirements.

**Policy 8.2.c: Guide future development into already developed areas**

The community will encourage infill and redevelopment within or adjacent to the Town of Jackson and existing County mixed-use neighborhoods that is consistent with the community's growth management policies (Themes 2, 3 and the FLUP) over leap-frog and sprawling development in the undeveloped areas of the unincorporated County. Infill and redevelopment consolidates population near existing services; preserving open areas and

avoiding expansion of infrastructure. It also reduces the waste and resources consumed during construction and the carbon emissions and cost of service delivery associated with commuting and sprawl.

### **Principle 8.3— Increase energy efficiency through transportation**

*Ground Transportation and Aviation make up for approximately 80% of the total carbon emissions in the community. Reducing fuels consumed for transportation and using renewable fuels has the largest potential to reduce the community's overall consumption of nonrenewable resources and carbon emissions.*

#### **Policy 8.3.a: Adopt and Implement Complete Streets**

Traffic is the largest carbon emitter in Jackson and Teton County, and congested traffic leads to idling cars emitting more carbon. To reduce the carbon emission associated with transportation, complete street improvements will be made. Designs including provisions for cycling, pedestrian transit, fast and efficient roadways and intersections will be prioritized when allocating transportation funding.

#### **Policy 8.3.b: Promote alternate modes of transportation**

Walking, cycling, ride-sharing, and transit are the most energy efficient modes of transportation. The community has adopted a number of transportation policies to encourage the use of alternate modes of transportation and discourage the use of single occupancy motor vehicles (the least energy efficient mode of transportation). The community will fund and implement a Transportation Demand Management (TDM) program administered by a trip reduction coordinator to influence the community's transportation behavior

### **Principle 8.4— Increase energy efficiency in buildings**

*The construction and operation of buildings accounts for close to 15% of energy use in Jackson and Teton County. In order to achieve carbon neutral buildings by 2030 the community will reduce the energy used in the construction of buildings and use energy more efficiently in building operation. Publicly funded construction projects will lead by example in implementing this policy, but existing and new private developments should also work toward a reduction of emissions.*

#### **Policy 8.4.a: Construct Energy Efficient Buildings**

Energy efficient buildings with tight building envelopes increase the efficiency of operation of a building by minimizing energy loss. The Town and County will adopt the most recent energy codes in order to ensure maximum efficiency in all new construction and improvements on existing buildings and provide financial incentive for the design of energy efficient homes and businesses. The Town and County will also adopt energy policies that require existing building stock to meet certain improved energy performance standards at the time a remodel or addition is done; and create incentives and financing options for owners of existing buildings to participate in a community-wide energy retrofit program.

#### **Policy 8.4.b: Renovate and Reuse Existing Buildings**

The energy required to extract, produce, transport, and assemble building materials is referred to as the embodied energy of a building. The easiest way to reduce the embodied energy of a structure is to use a structure that already exists. The community will encourage the reuse, repurposing and renovation of existing buildings and building materials.

**Policy 8.4.c: Construction Material**

The embodied energy of construction activities and materials will also be considered. Where practical, the community will encourage the use of sustainably harvested and/or locally produced goods that have less embodied energy. The town and county will lead by example when constructing public buildings and affordable housing units by giving preference to local materials and contractors within reasonable performance and cost limits. The community will develop an awareness program describing the benefits of local material use for the community.

**Policy 8.4.d: Energy Efficient Building Systems and appliances**

The embodied energy and efficiency of a building's design are elements that remain static once a building is constructed. The town and county will provide standards for furnaces and HVAC equipment, lighting fixtures, appliances and other high efficiency items, that will actually reduce consumption and demand of energy throughout the habitation of the building. Where possible, programs will encourage the use of these items.

**Principle 8.5—Conserve energy through waste management and water conservation**

*The energy required to distribute, clean, and dispose of water and waste can be easily reduced through conservation efforts. The long-term impacts of our water consumption and waste water management will have local environmental impacts and require future greater energy consumption to continue delivering this service..*

**Policy 8.5.a: Encourage water conservation**

Conservation of water saves aquifer supplies for future generations, protects habitat, and respects downstream users. Readily available, inexpensive water does not encourage water conservation. In order to encourage water conservation, municipal pricing will reflect the true long-term cost of production. The Town and County will also allow, incent, and require land uses that use less water such as landscaping with native species.

**Policy 8.5.b: Increase recycling and composting**

The disposal of solid waste in a landfill involves not only long term decomposition but also long distance transportation. The community will adopt a "cradle to grave" recognition of the costs of waste generation and disposal. The community will increase opportunities for recycling, reuse, and composting to minimize the solid waste that must be hauled to a landfill outside of the County, and encourage such actions.

**Policy 8.5.c: Reduce wastewater pollution**

The community will develop and promote innovative sewage and septic treatment systems that discharge effluent meeting or exceeding federal drinking water standards while minimizing or eliminating the use of chemicals. The Town and County will encourage wastewater to be cleaned, conserved and reused at the on-site, neighborhood or community level reducing the need for large expensive collection systems and regional processing facilities. Where possible, the Town and County will pursue methane recapture for wastewater and landfill operations.

**Strategies**

The Town of Jackson and Teton County will undertake the following strategies to implement the policies of this theme. The town and county should periodically update strategies as tasks are completed or when additional action is necessary, based on monitoring of the Theme's indicators.

**Strategy 8.1: Amend Land Development Regulations (LDRs)**

- Amend LDRs to accommodate infill developments
- Amend LDRs to focus on creating ‘walkable’ communities which encourage alternate transit and mixed use development.
- Amend LDRs to support the integration of renewables into the community energy portfolio for both public and small private providers.
- Develop regulations and incentives for maximizing habitat retention, enhancement of wildlife habitat and natural resource protections.

**Strategy 8.2: Develop a Comprehensive Sustainable Building Program<sup>2</sup>**

- Develop a sustainable, energy efficient building program to apply to all governmental operations in the Town and County.
- Develop a sustainable, energy efficient residential and commercial building program to the greater community which reflects the standards that are being implemented by the Town and County government.
- Encourage commercial buildings over 5000 square feet to be built to a LEED Certified standard or equivalent.
- Develop a Green Building Pilot Program including incentives from the county and/or town Energy Mitigation Program.
- Develop energy efficiency requirements for affordable housing possibly the Home Energy Rating System (HERS).
- Adoption of the most recent International Energy Conservation Code.
- Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system.

**Strategy 8.3: Education**

- Educate the public, schools, governmental agencies, professional associations, business and industry about reducing global warming pollution.
- Develop educational programs to encourage CC&R's to be drafted to better accommodate renewable and energy efficient practices.
- Public education on the long term monetary, environmental, and national security value of energy conservation.
- Develop an awareness program describing the benefits of local material use.
- Increase awareness and opportunities for recycling, reuse, and composting.
- Encourage the use of energy efficient building systems and appliances.

**Strategy 8.4: Partner with Energy Providers, Non-profits, Governmental Agencies and others**

- Deploy modern technological devices such as home area networks into the community.
- Work with local energy providers to develop a sliding scale energy pricing structure.
- Develop a sliding scale water pricing structure.
- Encourage local fuel providers to offer alternative vehicle fuels.
- Convert governmental vehicle fleets to alternative fuels.

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<sup>2</sup> Rec 118: (County 5-0, Town 3-2) Strategy 1.4 third bullet: remove beginning of sentence and start with “Establish requirements...”

- Use energy use and emissions inventory data and the JHESP partnership to support the wide array of organizations already working on reducing emissions from transportation.
- Actively pursue creating incentives and financing options for owners of existing buildings to participate in a community-wide energy retrofit program.

## Indicators

The community will use<sup>3</sup> the following indicators to monitor achievement of this theme’s values. Planning staff will compile the best available data from any appropriate agencies on each indicator in the period stated below and present the methods and results to the public and appointed and elected officials as detailed in the Administration chapter of this Plan. With indicator data as a guide, amendments to Plan policy or implementation may be pursued.<sup>4</sup>

Energy Conservation Indicators	Baseline <sup>5</sup>	Goal	Review Period
1. Green House Gas Emissions		Reduce	5 yr
2. Carbon Neutral Buildings by 2030		reduce	5 yr
3. Town and County building construction certified to a minimum of LEED standard		Comply	Annual
4. Per capita vehicle miles travelled		Reduce	5 yr
5. Increase waste diversion to recycling		>25%	5 yr
6. Water usage		Reduce	Annual
7. Mitigate the additional 30 megawatts of energy needed to meet Jackson Hole’s load growth for the next 20 years by 33% through resource conservation		Reduce	Annual
8. Develop local renewable energy options that generate 2 megawatts of additional energy over the next 20 years			5 yr

<sup>3</sup> Rec 139 (County 2-3, Town 4-1) Under “indicators” heading in all Themes: change “will use” to “should consider using”

<sup>4</sup> Rec 199 (County 4-0, Town 3-1) Conservation alliance 11/12 Action #5: Add language that clearly explains how indicators will be used to draft and amend land development regulations. Language should be added that explains how a science-based monitoring program will be further developed with appropriate agencies and partners. A baseline column, with quantifiable documentation of existing conditions, should be added to all indicator tables in the new Plan.

<sup>5</sup> Rec 199 (County 4-0, Town 3-1) Conservation alliance 11/12 Action #5: Add language that clearly explains how indicators will be used to draft and amend land development regulations. Language should be added that explains how a science-based monitoring program will be further developed with appropriate agencies and partners. A baseline column, with quantifiable documentation of existing conditions, should be added to all indicator tables in the new Plan.

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