

CHAPTER 9 ENERGY PLAN

Vision Statement: The City of Homer will be seen as a model for energy conservation, wise use of environmental resources, and development of renewable energy through the actions of local government as well as the private sector. Benefits will include energy stability, money savings, and job creation.

Overview

Access to an affordable, secure supply of energy is necessary for almost every activity of government, business and private life. Energy policies can play a crucial role in the development of a local and regional energy system that can help ensure the long-term economic viability and livability of Homer. Currently, national energy policies are beginning to reflect the need to reduce greenhouse gas emissions and establish a fair degree of independence from uncertain international energy markets. Locally, policies can facilitate responsible contributions from our community to the global human and natural environment. Progressive energy policies should strive for an energy system that is sustainable, locally and globally. On the local level, some direct

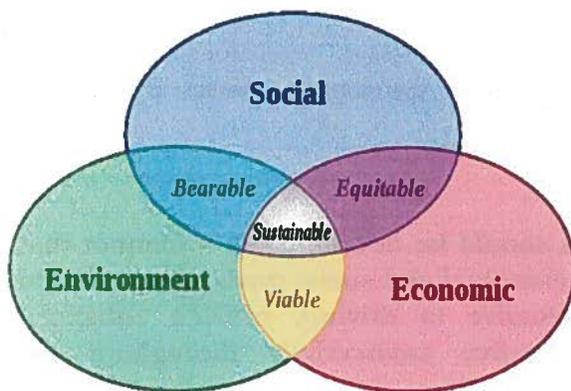


Figure 13 The three pillars of sustainability
Author: Johann Dréo

benefits of these policies can include job creation and retention of money in the community, as the need to buy energy from sellers outside the region is reduced. In addition, addressing energy use in the transportation sector can improve quality of life by reducing traffic congestion and associated impacts.

The City of Homer has a role in the broader discussion of energy resources and conservation. One major role is to ensure municipal buildings and projects are energy efficient and as sustainable as possible, in a cost efficient manner. A second role includes working with public and private parties to support the use of local renewable resources for power generation. Taking advantage of local renewable energy production is likely to lead to the creation of new jobs. The City can accomplish these and other desired goals by creating and implementing a long-range energy plan.

The City of Homer continues to develop policies that further advance the goal of contributing to a more sustainable environment, seeking to be on the forefront of sustainable thought and action. This energy chapter builds on several recent efforts. Homer citizens and the City have produced and adopted a Climate Action Plan. The goal of the Climate Action Plan is to reduce the threat of global climate change through government and community efforts. Additionally, the City has recently produced an employee sustainability handbook. The employee handbook sets operations policies for City staff and is a resource for other organizations pursuing energy conservation. Both documents

suggest actions that citizens and government can take to reduce carbon emissions and conserve energy.

Several sections of the 2008 Homer Comprehensive Plan discuss energy related policies. The following chapters and goals also relate to this chapter and can be considered as part of the City's energy policies:

Chapter 4 Land Use, Goal 1 Objective E, and Goal 3 Objective B

- **Consider the regional and global impacts of development in Homer.**

Homer is a community that understands and appreciates its place in the context of the larger, global environment. As shown by its robust environmental community and the work of the City's Global Warming Task Force, Homer residents look beyond their boundaries and have expressed the importance of acting locally as a way of addressing global issues. Specific implementation items are listed in chapter 4.

- **Encourage high quality site design and buildings.**

Implementation actions in this chapter include items such as developing policies for LEED, Sustainable Sites and Low Impact Development. *See Chapter 4.*

Chapter 5 Transportation, Goals 3 and 4

- **Homer's transportation system and services should be developed in a manner that supports community land use, design, environmental and social goals. The trail and sidewalk network should provide an alternative to driving, provide enhanced recreational opportunities, and create auto-free connectivity throughout the community. *See Chapter 5.***

Chapter 6 Public Service and Facilities, Goal 1

- **Provide and improve city-operated facilities and services to meet the current needs of the community, anticipate growth, conserve energy, and keep pace with future demands. *See Chapter 6.***

Chapter 8 Economic Vitality, Goal 7

- **Support regional renewable and non-renewable energy exploration and production.**

Implementation items include encouraging renewable energy development locally and regionally and supporting efforts to supply local energy needs with natural gas. *See Chapter 8.*

Summary of Goals

GOAL 1: Establish and implement an energy plan with emphasis on long term sustainability and affordability.

GOAL 2: Implement waste reduction, reuse and recycling program.

GOAL 3: Use technologies and operating practices that promote energy efficiency for all new and existing buildings and energy-using projects.

GOAL 4: Support renewable-energy research and development.

GOAL 5: Reduce dependence on fossil fuels used for transportation.

GOAL 6: Encourage industrial and commercial users to be energy efficient, to use renewable resources, and to make energy by-products available for use elsewhere in the community.

Goals and Objectives for Energy Planning

GOAL 1: Establish and implement an energy plan with emphasis on long term sustainability and affordability.

Energy Planning

The energy industry is changing rapidly as renewable energy sources are found and new technologies emerge. Federal and State funding sources may become available for renewable energy projects and/or energy efficiency planning and implementation. Homer should examine these funding opportunities and emerging technologies for potential use in the community.

A sound energy policy has several basic principles. There must be an understanding of the energy source, the financial and environmental implications of utilizing that source, and where and how the energy is used. In order to implement the policies outlined in this chapter, it is necessary to establish a plan for the future use of energy resources. Homer should analyze the energy systems supplying the community, potential renewable energy resources, and emerging technologies. The end goal is long term, affordable, sustainable energy supplies.

Implementation Strategies

1. Work with the State of Alaska, Kenai Peninsula Borough, Homer Electric Association, Kachemak Bay communities and other entities in planning for energy resource development and use on the Southern Kenai Peninsula.
2. Develop and implement a long-range energy plan for Homer. The plan should address the City's energy use and include management goals, objectives, and an action plan. The plan should consider renewable energy sources, emerging technologies, other plans being developed within the region and the state, and national energy policies that may impact the local market.
3. Potential renewable energy resources close to Homer should be protected. This includes projects that are permitted through the Federal Energy Regulatory Commission, including dams and tidal generation facilities.

GOAL 2: Implement a waste reduction, reuse and recycling program.

Minimizing solid waste is in the long-term interest of the community. Reducing garbage in the land fill will stretch the life of existing facilities and postpone the expensive process of constructing new disposal sites. The three R's - Reduce, Reuse and Recycle - are the pillars of solid waste reduction. Since Homer is located far from major recycling markets, it may not currently be energy efficient or economical to recycle some materials. Therefore, reuse of materials, and using less material (reducing) are especially important. Effective solid waste reduction requires coordination between the public, private, and non-profit sectors. Some programs may not be cost effective in Homer alone. The City should work with the Kenai Peninsula Borough and private entities to take advantage of recycling and waste reduction opportunities.

Implementation Strategies

1. Develop a solid waste and recycling plan for municipal facilities and operations.
2. Develop a solid waste and recycling management strategy for users of the Homer transfer station in cooperation with the Kenai Peninsula Borough.
3. Coordinate/cooperate with other Kachemak Bay communities, the Kenai Peninsula Borough, private companies and non-profit organizations within the region on solid waste management and recycling programs.
4. Develop procurement policies to reduce resource and energy consumption "upstream." *See Sustainability Guidebook.*

GOAL 3: Use technologies and operating practices that promote energy efficiency for all new and existing buildings and energy-using projects.

Objective A addresses specific actions for the City of Homer. Objective B addresses both public and private actions.

Objective A: City of Homer operations and actions will save taxpayer money and set an example for businesses and individuals in adopting cost effective energy saving technologies and operating procedures.

Implementation Strategies

1. Continue to implement the Climate Action Plan and the employee sustainability guidebook for City facilities and operations.
2. Establish and utilize a revolving fund to invest in cost effective energy-saving public projects.
3. Monitor and report energy use.
4. When designing new facilities or major renovation of City facilities, analyze life cycle costs of energy applications with consideration of energy efficiency and renewable energy sources given priority.
5. Analyze the workings of the Homer water and wastewater facilities and incorporate energy saving methods and technologies where appropriate.
6. Practice and encourage energy efficiency and conservation to reduce the amount of money leaving the community to pay for fuels.

7. Actively support the development of renewable energy projects.
8. Promote water conservation measures.

Objective B: Encourage energy efficiency in building construction and for the life of the building.

Buildings use a lot of energy over their lifecycle, and construction is a very energy and material intense activity. Building and construction design can minimize construction waste and maximize energy efficiency. *See also Chapter 4 as referenced above.*

Implementation Strategies

1. Incorporate LEED (Leadership in Energy and Environmental Design) or similar principles and standards when designing public structures and facilities. The LEED or other standards should be adapted for local climate and materials resources and should include lifecycle cost analyses (including long-term operational costs) with appropriate fuel cost sensitivity analyses over the long-term life of the project. The ratio between maximum energy efficiency and construction cost should be the primary consideration.
2. Encourage consideration of lifecycle costs, the use of energy efficient construction techniques, materials, waste reduction, and equipment that are consistent with acceptable health and safety standards and that are appropriate for local climatic conditions, while finding a balance with project costs.
3. Use materials efficiently. Use design techniques and implementation to design buildings that create less construction waste.

Objective C: Include the full costs, direct and indirect, of energy use when performing economic analyses.

The real environmental and social costs of fossil fuels are not reflected in consumer prices. Consumers pay the cost of energy production and transportation, but not directly for air pollution, health problems, or other environmental or social effects of burning fossil fuels. "True or full cost accounting" is a term used to describe how a dollar value can be attributed to these indirect costs. Wise energy production and use requires these external costs to be internalized in energy prices. Paying the true cost will increase energy prices, but also will encourage energy conservation and energy production from renewable sources. Presumably when the full cost of fossil fuels are reflected in consumer prices, renewable energy will be cost competitive.

Implementation Strategies

1. Include the full costs, direct and indirect, of energy use when performing economic analyses.
2. Use quantifiable external and indirect costs in establishing the cost of energy when conducting lifecycle cost analyses of City facilities, projects, and operations.

GOAL 4: Support renewable-energy research and development.

Homer's proximity to hydroelectric generation and potential ocean energy resources presents an opportunity to guide future energy consumption toward renewable energy sources and away from the negative economic and environmental impacts associated with fossil fuel consumption. Least-cost planning, where energy conservation investment is weighed against energy purchase investment, with life-cycle costs factored in, can provide a framework for cost-effective, responsible energy planning and conservation. Renewable-energy activities can also create high paying local jobs.

Implementation Strategies

1. Support research efforts to identify potential renewable energy sources and technologies.
2. Encourage programs and projects that will attract and/or train workers for jobs related to renewable energy research and development. *See also Chapter 8.*
3. Encourage the development of tidal, geothermal, wind and other renewable energy sources to generate energy for adjacent uses or for transmission to the electrical grid.

GOAL 5: Reduce dependence on fossil fuels used for transportation.

Objective A: Reduce vehicle miles traveled and promote a walkable and bikeable community.

Transportation can be a substantial expense for households, businesses, and local government particularly with upward trends in the price of oil. In addition, vehicle traffic in the Homer area contributes to traffic congestion, noise and air pollution, and is responsible for more than one-fifth of the community's greenhouse gas emissions. Affordable, renewable-energy transportation is a goal for the future, and until the technology is available, there are interim steps that can be taken to reduce oil dependence. Carpooling, public/private transportation (including seasonal services such as a shuttle to the Spit) and infrastructure for non-motorized transportation (walking and biking) and implementation of other Smart Growth land use practices will help reduce dependence on fossil fuels.

Implementation Strategies

1. Promote the use of public transportation and carpooling to reduce vehicle miles traveled in Homer.
2. Establish and maintain infrastructure for community-wide non-motorized transportation including sidewalks, bike paths, bike racks and trails.

GOAL 6: Encourage industrial and commercial users to be energy efficient, to use renewable resources, and to make energy by-products available for use elsewhere in the community.

Industries with large amounts of fuel or energy by-products (e.g. wood waste or steam), may be able to generate electricity to add to the utility grid. The design and operation of industrial developments

can be managed to reduce or transfer this otherwise wasted energy and also to maximize use of renewable energy. This can increase overall community energy efficiency.

Implementation Strategies

1. Encourage cost effective development of co-generated electrical energy.
2. Encourage energy efficiency and the use of renewable resources in commercial and industrial developments.

Energy Planning Implementation Table

As used below, “near-term” means one to five years; “mid-term” means five to ten years; and “long-term” means ten years or longer.

Implementation Table

Project	Timeframe			Primary Responsibility
	Near Term	Mid Term	Longer Term	
Create an energy plan.		x		City
Implement the Climate Action Plan, employee Sustainability Guidebook, and strategies to grow and maintain the Sustainably Fund.	x			City
Improve energy efficiency and conservation in City facilities.	x			City
Create a solid waste and recycling plan for City operations, and update procurement policies to reduce “upstream” waste and pollution.	x			City
Partner with public, private, and non-profit organizations to implement a plan to reduce, reuse and recycle solid waste.		x		City, Borough, public and private organizations

