



## **PROJECT GUIDELINE: ENERGY**

**Objective:** To reduce the consumption of energy, especially from fossil fuels.

### **Background:**

Energy is power derived from the utilization of physical or chemical resources, especially to provide light and heat or to work machines.<sup>1</sup> Electric, thermal, mechanical, and other types of energy are necessary for land use and development activities, including the grading and mining of land and the construction and maintenance of structures. A portion of the energy used in the United States is derived from sources considered renewable on a human timescale, such as hydro, geothermal, solar, wind, biomass, and from nuclear sources. However, most energy comes from the burning of fossil fuels, such as coal, natural gas, and petroleum.

Fossil fuels are resources formed over hundreds of millions of years through the anaerobic decomposition of organisms. Because of the long period of time required for their creation, fossil fuels are considered non-renewable, and their conversion to energy has long been commercialized. Projected dates for depletion of the world's fossil fuels vary from tens to hundreds of years from now; in the meantime, their extraction and use as an energy source is a significant contributor to global climate change, air quality deterioration, and a variety of other environmental problems.<sup>2</sup>



In an effort to reduce these impacts, federal and state governments have developed laws and voluntary programs, many with associated incentives, to reduce the public's need for and use of fossil fuel energy. In addition, numerous non-profit organizations and for-profit companies offer programs and strategies for helping landowners reduce their energy consumption. These initiatives are often targeted at improving energy efficiency, although some also encourage or mandate energy conservation.

### **Energy efficiency:**

The goal of energy efficiency requirements and programs is to reduce the amount of energy required for a specific development or service. For example, constructing new or retro-fitting existing buildings with appropriate insulation, or using a passive solar design, can minimize the energy needed for the heating and cooling of indoor

<sup>1</sup> Oxford Dictionary. See [www.oxforddictionaries.com/us/definition/american\\_english/energy](http://www.oxforddictionaries.com/us/definition/american_english/energy).

<sup>2</sup> Other sources of energy also contribute to climate change, air quality, and other concerns. For example, while wood is considered a renewable biomass energy source and may be a preferred alternative to fossil fuels in the Adirondack context, worldwide deforestation is a major contributor to climate change, loss of habitat and biodiversity, and other environmental degradation.


temperatures. Other energy-efficiency measures for buildings include using light emitting diodes, or LEDs, and energy-efficient appliances to minimize electricity consumption. The implementation of these measures may cost more initially, but often leads to financial savings over time.

### **Energy conservation:**

Energy conservation refers to reducing energy consumption. For example, the need for energy derived from petroleum can be reduced on a regional or local scale through zoning and other requirements that create walkable downtown areas. Energy conservation measures on an individual scale include lowering indoor thermostats in winter and raising them in summer, and using lighting and other systems that turn off automatically when not in use.

### **Requirements and programs:**

The Adirondack Park Agency does not implement laws directly targeted at reducing energy consumption. Energy-related laws and programs implemented by New York State include the following:

- Within New York State, residential and commercial construction must comply with the Energy Conservation Construction Code of New York State, or ECCCNY. This code is administered and enforced by local Code Enforcement Officers, and regulates insulation, heating, cooling, lighting, and other components of new and renovated construction. Information about the requirements of the ECCCNY is available at [http://www.dos.ny.gov/dcea/energycode\\_code.html](http://www.dos.ny.gov/dcea/energycode_code.html).
- The New York State Energy Research and Development Authority, often referred to as NYSERDA, is a public benefit corporation that offers technical expertise and funding to promote energy efficiency and the use of renewable energy sources. Information on specific programs and incentives is available at <http://www.nyserda.ny.gov/>.
- ENERGY STAR  is a labelling system established to designate energy-efficiency. Products such as refrigerators, televisions, and furnaces, can display an ENERGY STAR label if they meet specifications established by the federal Environmental Protection Agency. Residential and commercial buildings can also be rated through the ENERGY STAR program.<sup>3</sup> ENERGY STAR information is available at <http://www.energystar.gov/>. Information on New York State programs using ENERGY STAR can be found at <http://www.nyserda.ny.gov/>.

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<sup>3</sup> Federal Energy Star ratings are currently available for homes, hotels, houses of worship, k-12 schools, office buildings, courthouses, retail stores, senior care facilities, supermarkets, warehouses, and wastewater treatment plants. Assessments are available for dormitories, hospitals, and medical offices. NYSERDA also offers ENERGY STAR certifications, based on the ECCCNY, for certain low-rise residential buildings.