

What can we do for you?

Dover Energy Commission

c/o City of Dover, Planning Department
288 Central Ave Dover NH 03820
(603) 516-6008

<http://www.dover.nh.gov/government/boards-and-commissions/energy-commission/index.html>

email: e.piekut@dover.nh.gov

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What We Do

What We Do

The Dover Energy Commission was founded in 1997 as part of the Mayors' Agreement on Climate.

The Commission supports energy efficiencies, renewable energy, and green building in Dover. We advised the City closely in developing the [NAME] with Johnson Controls, which has saved Dover more than [SUM]. We are currently advising the City on solar-generated energy projects. None of us is an expert, but we are all thoughtful researchers.

We have developed some ideas about energy and would like to work with you to explore other ways Dover can reduce its carbon footprint and prepare for the future. [Read our brochure.](#)

Solar Energy

Green Building

LED Lighting

Heat Pumps

No-Idling Policies

Some Ideas

Solar Energy

The DEC is assisting the City in negotiating a solar power agreement to [PLEASE STATE]. Here's what some other NH communities are doing.

DURHAM: The 99.45kw grid tied solar photovoltaic array on the Churchill Ice Rink was financed through a power purchase agreement. The rink's lifetime energy output (145 MWh) offsets nearly 13,000 gallons of gasoline. The town also installed panels on the police station and town library, which together are estimated to avoid nearly 24 tons of Co2 emissions over their lifetimes.

EXETER: A 465 solar panel array atop Exeter High School will generate 100 kilowatt hours of energy offset 5% of the high school's energy requirements. In addition to the estimated savings of more than \$200,000 a year, the project offers students great educational opportunities.

PETERBOROUGH: Once completed, the Monadnock Collaborative Solar project will power a wastewater treatment plant in addition and offset other municipal energy costs. A long-term agreement guarantees fixed energy purchase rates. Estimated cost savings to Peterborough over the next 20 years range from \$250,000 to \$500,000.

Some Ideas

Green Building: Key Principles

Green Building is “a holistic concept that starts with the understanding that the built environment can have profound effects, both positive and negative, on the natural environment, as well as the people who inhabit buildings every day. Green building aims to amplify the positive and mitigate the negative effects throughout a building’s entire life cycle.” --US Green Building Council

While there are many different definitions of green building out there, it is generally accepted as the planning, design, construction, and operations of buildings with several central and foremost considerations:

- energy use,
- water use,
- indoor environmental quality,
- material selection and
- the building's effects on its site.

Some Ideas

Green Building: Children's Museum

A building doesn't have to be certified in order to have implemented green building principles, The Children's Museum (LEED-Silver) showcases many adaptable principles.

- **Water efficient landscaping** techniques with no potable water use or irrigation and a cistern for rain water collection.
- During renovation, **building materials were reused or repurposed**, yielding substantial savings. The Director estimates the building cost about \$48 per square foot, compared with \$300 to \$500 per square foot for comparable museums..
- **Low flow faucets and toilets, high-performance windows, and efficient building insulations** further contribute to cost savings while having a lesser impact on the environment.

Some Ideas

NH Children's Museum, Dover, NH

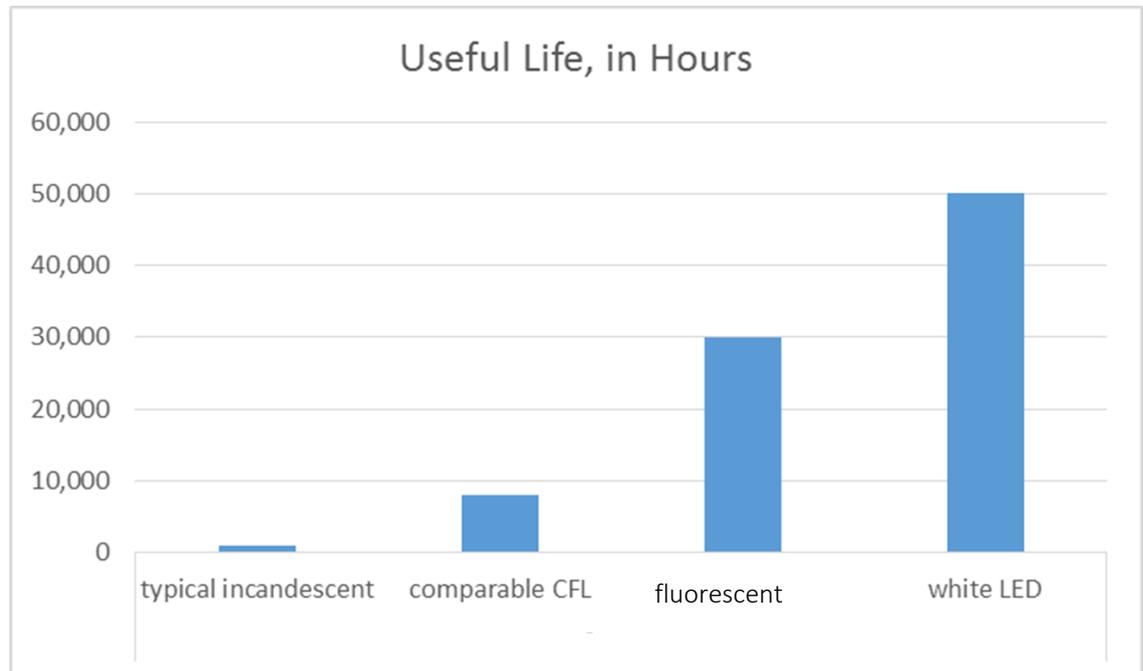


Some Ideas

LED Lighting

Lighting options vary widely by useful life.

- Incandescent bulbs have very brief useful lives. White LED bulbs outlast even fluorescent bulbs by 40%.



Some Ideas

LED Lighting: Dover Ice Arena

A project to replace conventional lighting with LED lighting received final City Council approval in [DATE]. It will pay for itself in 40 months [DATE].

Eversource Energy will pay up-front costs (about \$123,000).

The arena will pay the same monthly energy bills as before.

Savings realized from using the more efficient LED lights will repay the utility for its investment.

After that time, the arena will save about \$2,700 a month on electricity bills that currently average about \$15,000 a month.

In addition, maintenance on these (LED lights) is lower. Less frequent light replacement will free employees for other tasks.

Some Ideas

Dover Ice Arena



Some Ideas

LED Lighting

Solid-state lighting (SSL) includes:

- light-emitting diode (LED) and
- organic light-emitting diode (OLED) technologies.

Switching to SSL could almost halve national lighting electricity use by 2030. This is equivalent to saving 3,000 trillion Btus, worth \$26 billion in today's dollars (US Department of Energy), every year.

Some Ideas

Heat Pumps

Consider heat pumps when upgrading heating/cooling systems.

- Dual purpose: producing heat and cooling
- Ductless: minimal space requirements
- Efficient: potential savings

For more information:

<http://energy.gov/public-services/homes/heating-cooling/heat-pumps>

Some Ideas

Heat Pumps: Two Basic Types

Air-to-Air

How it works: Extracts heat from the air and moves it outside (in the summer) and indoors (winter). Typically used for AC and supplemental heat.

Drawback: Less efficient or inoperable at temperature extremes.

Ground Source

How it works: Extracts heat from the ground. More efficient because of Earth's constant temperature; not liable to temperature extremes.

Drawback: More expensive.

Some Ideas

No-Idling Policies

An engine running while standing still is idling. Idling burns fuel needlessly and adds to air pollution, health problems, and global warming.

Examples:

- Picking up or dropping off passengers
- “Running in” to the store
- Warming the car up

FACTS ABOUT IDLING:

- 30 seconds of idling uses more fuel than turning the engine off and restarting
- Idling is not an effective way to warm an engine. The best way to warm an engine is to drive.
- Every gallon of gas burned produces about 20 pounds of carbon dioxide, a major contributor to global warming.
- Breathing exhaust fumes increases the risk of cancer, heart and lung disease, asthma and allergies.

Some Ideas

No-Idling Policies

Most states, including New Hampshire, have anti idling laws (emergency vehicles exempted). The **Dover Police Department** installed ant-idling equipment on vehicles assigned to construction and traffic projects. This equipment allows vehicles to power lights without running the engine. The department also has an explicitly recognized policy of powering down vehicles in all non-emergency conditions.

The **City of Dover** is studying traffic flows to time traffic light sequences. New timing sequences will level traffic throughput and reduce idling.

School buses are a concern because the emissions can be especially harmful to children, whose respiratory systems are not fully developed.

In 2010 the **Dover School District** formally prohibited school buses, passenger, and delivery vehicles from idling beyond short periods of time in all but the most severe weather conditions.

Invitation

Let's Talk

We believe in collaboration and community-building through a shared interest in reducing energy costs and environmental harms in sustaining our lives. We can help your commission or developer find ways to use energy efficiently to lower energy costs, CO₂ emissions, and risk.

OTHER AREAS OF INTEREST:

- Tree-planting
- Rain gardens
- Transportation policy
- Bicycle infrastructure

thank you

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