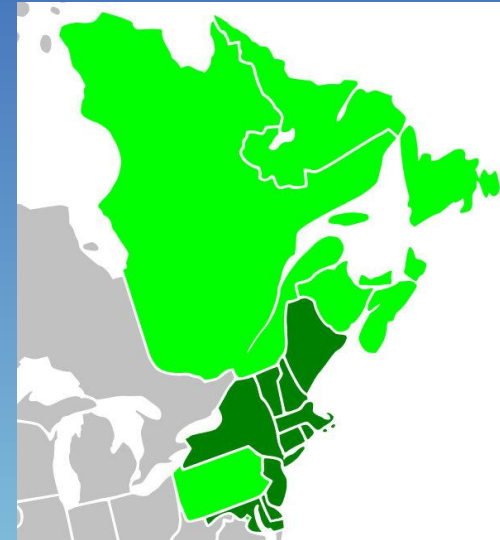


Brookline School's and Municipal High Performance Lighting Upgrades



Regional Greenhouse Gas Initiative (RGGI)

- This energy-efficiency project was made possible, in part, through RGGI. Lowering bills. Conserving energy. Creating jobs.
- RGGI is a cooperative effort by ten Northeast and Mid-Atlantic states to reduce greenhouse gas emissions from the electric power sector through individual CO2 Budget Trading Programs in each of the ten participating states.
- Learn more at www.rggi.org/home



Why Energy Efficiency?

- Keeps the cost of electricity down by reducing system wide peak demand for electricity.
- Energy efficiency is our cheapest source of electrical energy @ \$0.03 per kilo-watt hour (kWh).
- Spur economic growth through investment in our own state's economy of monies currently spent on energy imports.
- It's an uninterruptable power source.

(excerpt from the New Hampshire Climate Action Plan, March 2009)

Why Focus on Lighting?

- Improved lighting enhances visual comfort, reduces eye fatigue, and improves performance on visual tasks.
- In a typical commercial building lighting can account for up to 35% of the electric bill. That is a big piece of the pie.
- Increasing lighting efficiency = decreased electricity cost
- Improving end-use energy efficiency means burning less fossil fuels

Brookline School's and Municipal Project Goals

- Reduce electricity costs
- Improve lighting quality
- Take action to reduce the carbon footprint of the schools and town buildings

Project Scope

LighTec, Inc. engineered and installed a high efficiency lighting and lighting controls project to replace the 1990s vintage standard T-8 fluorescent lamps and ballast in the following locations:

School Buildings:

Captain Samuel Douglas Academy

Richard Maghakian Memorial School

Town Buildings:

Daniels Academy – Town Hall

Annex

Transfer Station

Chapel

Library

Brusch Hall

Recreation Department

Fire Department

Lighting Project Savings Summary: Brookline Schools

Annual Estimated Cost Savings:
\$24,198.05

Annual Estimated kWh Savings:
152,189

CO₂ Equivalent: **75 metric tons**. Equivalent to:

- Carbon absorbed by **1,923** tree seedlings grown for 10 years
- Removing emissions from **14** cars
- Removing **26** tons of trash from the landfill



Lighting Project Savings Summary: Brookline Municipal Buildings

Annual Estimated Cost Savings:
\$6,340.60

Annual Estimated kWh Savings:
39,878

CO₂ Equivalent: **19.7 metric tons**. Equivalent to:

- Carbon absorbed by **505** tree seedlings grown for 10 years
- Removing emissions from **3.9** cars
- Removing **6.9** tons of trash from the landfill

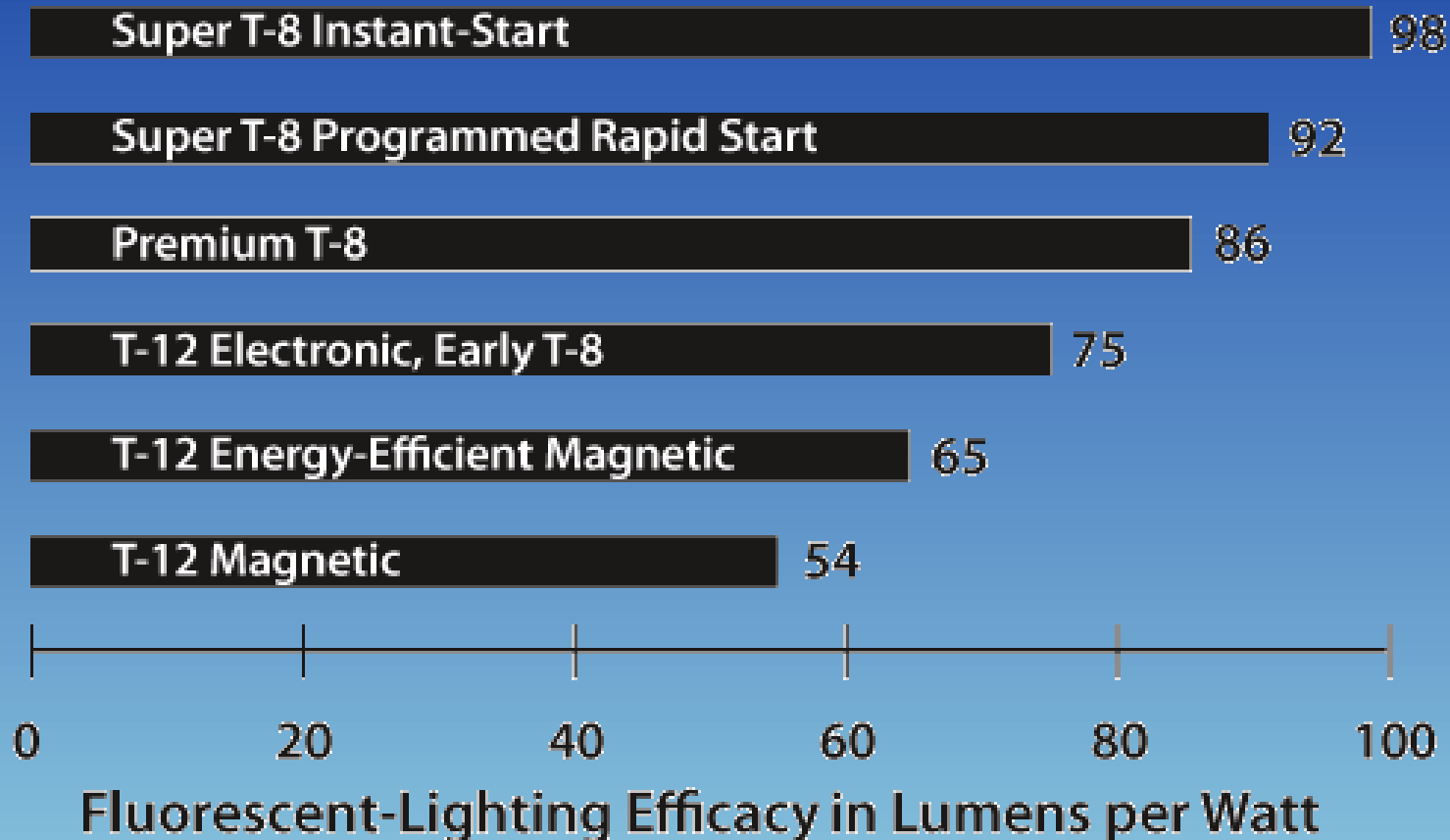


Lighting Terminology

- **Lamp (Bulb)**
- **Ballast**
- **Watt (W)**
- **Usage/Kilowatt hour (kWh)**
- **Lumens**
- **Efficacy**

Efficacy in Lumens/Watt

Fluorescent Systems



Lighting Installed in Town Buildings

Fire Station



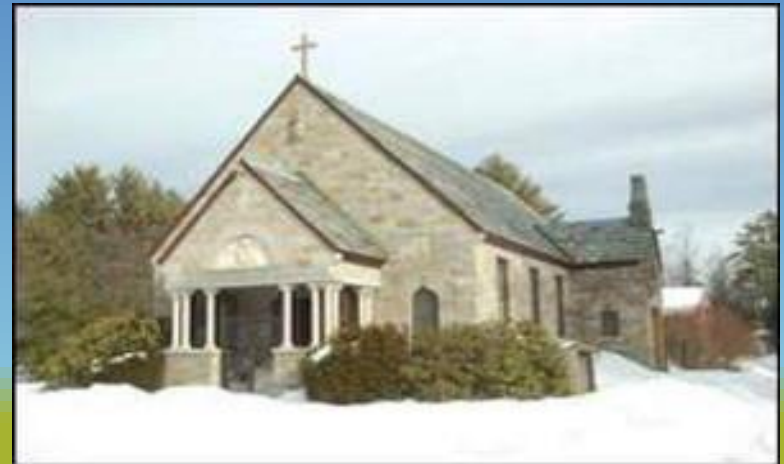
Town Hall



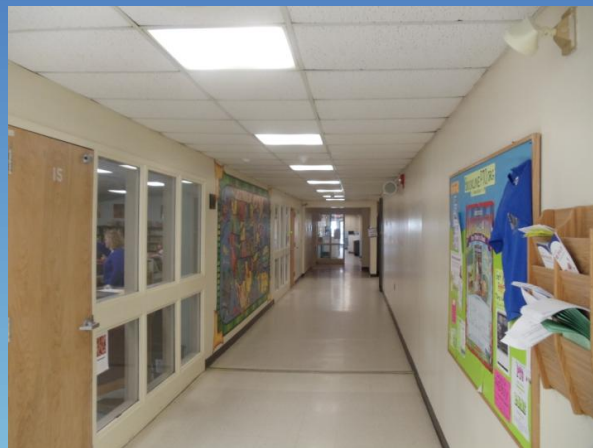
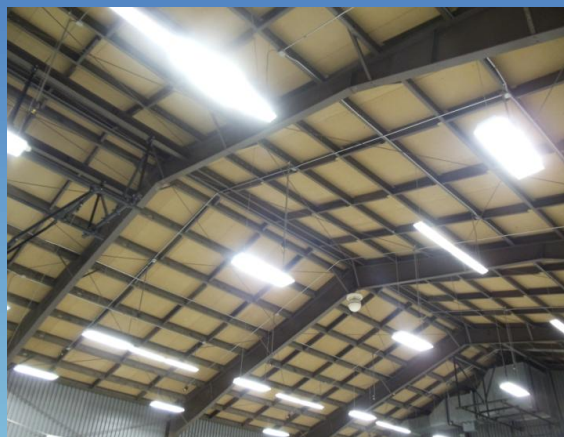
Library



Chapel



Lighting Installed in Schools



Lighting Technologies Installed



<http://www.asihome.com/images/sn-cm9r.jpg>

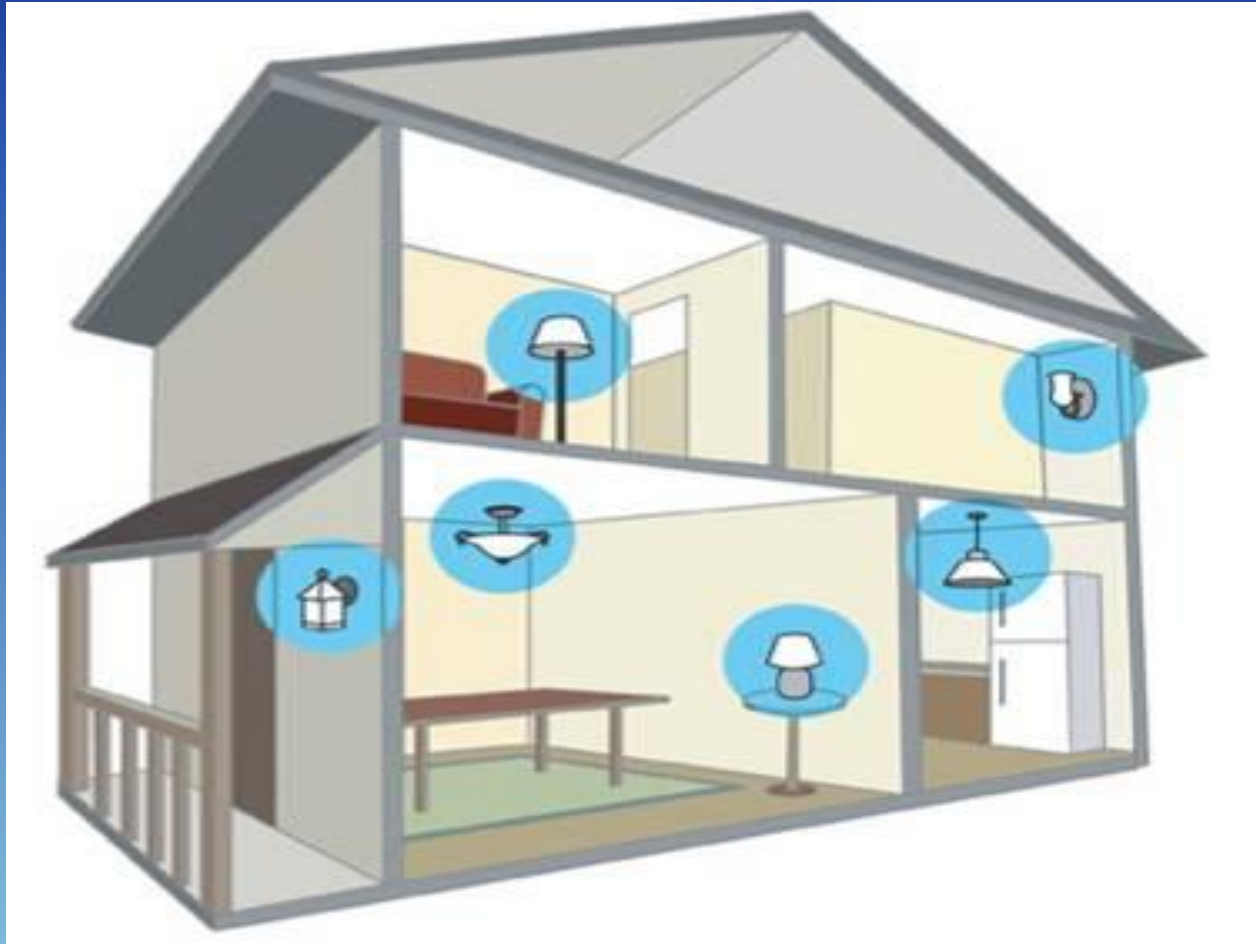
Tips for Saving Energy at Home:

Change a Light

- Replace your five most frequently used light fixtures or the bulbs in them with ENERGY STAR qualified lights, and save more than \$65 a year in energy costs.



Where to Use CFLs?



ENERGY STAR

Qualified Lighting Products



ENERGY STAR Qualified Light Bulbs

Typically purchased to replace incandescent bulbs in existing non-qualified light fixtures



ENERGY STAR Qualified Light Fixtures

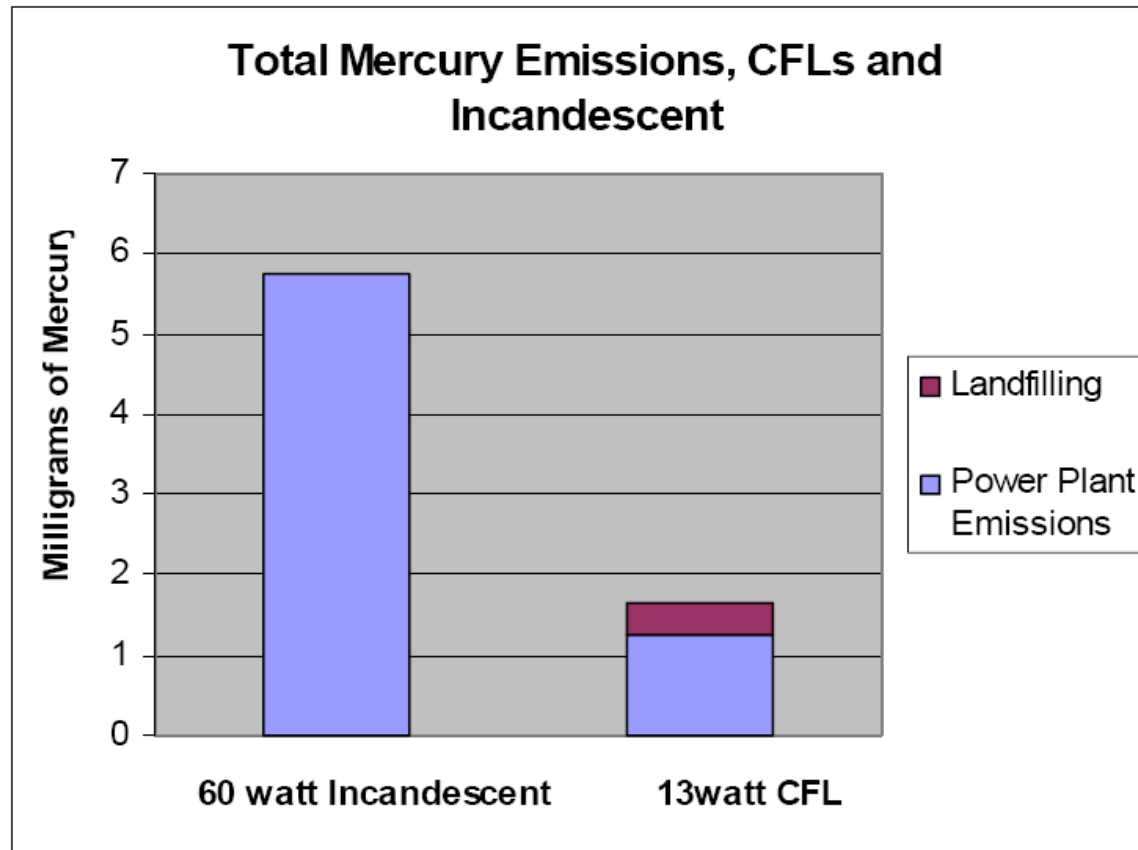
Typically purchased as a complete new fixture that includes the CFL bulb

No Cost Energy Savers



Concerns about Mercury

Figure 1



Source: http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf

Saving Energy Helps Protect the Environment



FACT:

If every American home replaced just one light bulb with an ENERGY STAR bulb, we would save enough energy to light more than 3 million homes for a year, more than \$600 million in annual energy costs, and prevent greenhouse gases equivalent to the emissions from more than 800,000 vehicles.

Learn More

- To find out more ways you can save energy at home, visit:
www.myenergyplan.net
www.nhsaves.com
www.energystar.gov
- To learn about state, local, utility and federal incentives that promote renewable energy and energy efficiency visit: <http://www.dsireusa.org>