

allowed an upgrade in the Radio system from a single phone service connected antennae to a fiber-connected multiple antennae system.

CMLP added another “dark fiber” lease to its business as well, bringing this total to eight. The lease agreements provide fiber connections to telecommunication service providers who wish to gain access to serve a local business in Concord. CMLP earns revenue from the fiber leases, the service provider benefits from faster, less-expensive installations, and the businesses get access to advanced telecommunication services.

CONCORD COMPREHENSIVE SUSTAINABLE ENERGY COMMITTEE

The Comprehensive Sustainable Energy Committee was established to assist the Town with identifying, designing, and implementing programs and projects for fostering energy conservation, energy efficiency, and renewable energy generation in the Town and to track and report on the financial and environmental impacts of such programs. Programs and projects should address all forms of energy use: electricity, natural gas and heating oil, and transportation fuels, and energy use in all segments of Town: municipal, business, nonprofit, and residential.

A major responsibility of CSEC has been to identify projects and recommend funding from the Alfred H. Sawyer Trust. The Sawyer Trust was established in 2008 with a \$1.7 million gift to the Town for the purpose of promoting energy and other resource conservation in public facilities. This year, the Committee considered and recommended Sawyer Trust funding for several projects:

- Lighting design for CPW facilities (\$1,250)
- Programmable thermostats for CPW (\$1,500)
- Lighting improvements for CPW facilities (\$13,000)
- Improved dehumidification system for the Beede Center (\$175,000)

About \$200,000 remains in the Sawyer Trust for future municipal or school energy projects.

In early 2013, CSEC initiated the Concord Solar Challenge, modeled after the State-wide Solarize Mass program, to promote the installation of residential rooftop photovoltaic (PV) electric systems. 2014 saw the conclusion of this highly successful program, with 166 contracts signed and systems installed by the designated vendor, Astrum Solar. These 166 systems represent about 1.3MW

of PV capacity, which will displace over 500 tons of greenhouse gas emissions every year. This large number of contracted systems qualified Concord for an award of \$14,700 worth of additional PV capacity from the installer. This was combined with additional funding of \$12,000 from Town funds to install a PV system on a barn at McGrath (Barrett’s Mill) Farm. The system became operational in August. The success of the Concord Solar Challenge now serves as a model for other municipalities in the Commonwealth who want to promote PV adoption in their own communities. CSEC is proud of and grateful for the support of Concord citizens, as well as the Selectmen, the Historic Districts Commission, the business community, and many others for making the program an enviable success. Of particular note is the support of the Concord Municipal Light Plant (CMLP), whose rebates served as a significant incentive for its customers to adopt solar power.

In December 2013, Concord was awarded designation as a Green Community by the Massachusetts Department of Energy Resources (DOER). The Green Communities program began with the passage of the Commonwealth’s Green Communities Act of 2008, which seeks to reduce the State’s dependence on fossil fuels, reduce energy demand, promote adoption of renewable energy sources, and reduce greenhouse gas emissions. Funded through fees collected by commercial electric utilities from their customers for the State’s Renewable Energy Trust fund, the program initially excluded Concord because our electric utility is Town-owned and has not collected these fees. This changed in 2012, when DOER enabled towns, like Concord, served by municipal electricity providers to take part in the program as long as one or more residents are served by an investor-owned utility. As a Green Community, Concord must abide by five criteria:

1. Provide as-of-right siting in designated locations for renewable/alternative energy generation, research & development, or manufacturing facilities. (Concord complied with this criterion by installing ground-based PV systems, such as the one at the former landfill, by CMLP)
2. Adopt an expedited application and permit process for as-of-right energy facilities. (This applies to the permitting process for renewable energy generation, which, in Concord, was adopted by CMLP as part of the process for establishing its ground-based PV installations.)

3. Establish an energy use baseline and develop a plan to reduce municipal energy use by twenty percent within five years. (The chosen baseline year for Concord is fiscal 2011 – i.e., July 1, 2010 to June 30, 2011 - which means that municipal energy use must be reduced by 20% by fiscal 2016. By the end of FY2014, Concord had reduced energy use by about 2%; this is expected to grow substantially once projects just initiated are complete.)
4. Purchase only fuel-efficient vehicles. (A vehicle purchase plan for both municipal departments and the schools is now being established.)
5. Set requirements to minimize life-cycle energy costs for new construction; one way to meet these requirements is to adopt the Board of Building Regulations and Standards (BBRS) Stretch Code. (Concord adopted the Stretch Code by vote of Town Meeting in 2010.)

The Green Communities base grant of \$147,400 was received in March 2014. \$125,000 was used to replace the boiler at the Peabody Middle School, and \$22,000 will be used to fund part of the Green Your Heat Program (see below). We estimate that the Peabody School project will save over \$23,000 in energy costs and reduce greenhouse gas emissions by about 11,000 every year. Concord and Carlisle were awarded another DOER grant of \$85,000 to fund an Energy Manager position for two years. The Energy Manager's primary focus in Concord is to ensure that the Town achieves its 20% reduction in municipal energy use. Pamela Cady was hired in October and will spend 2 days per week on Concord schools projects, 1 day per week on CSEC projects, and 1 day per week with the town of Carlisle.

A subsequent DOER grant of \$185,000 was awarded to fund CMLP replacement of street lights with LED lamps (\$40,000) and to fund CSEC's Green Your Heat Program (\$145,000).

The Green Your Heat Program (GYHP) was conceived as an initiative to assist homeowners in making their residences more energy-efficient, helping them reduce dependence on fossil fuels (especially fuel oil) for heating, and reducing greenhouse gas emissions. GYHP seeks to educate and provide all of Concord with the knowledge of the options of residential heating efficiency measures, including weatherization, heating system upgrades, and

personal choice and actions, as well as newer high-efficiency thermal technology options such as heat pumps. In this initial stage, the program will offer free weatherization reviews for homes heated with oil, propane, or electricity, as well as rebates for weatherization actions (sealing of air leaks and added insulation). In pursuing the GYHP program, we hope to achieve the same advantages as other communities whose programs have resulted in hundreds of homeowners engaging in new weatherization actions and heating efficiency improvements. Such actions have lowered heating and cooling bills for homeowners and reduced the carbon footprints of their towns.

CSEC engaged Sagewell, Inc., an energy efficiency services firm, to conduct a thermal imaging survey of Concord homes. Subsequently, CSEC, working with CMLP, tendered a Request For Proposals for a qualified service provider to serve as GYHP Program Manager, and be responsible for the program's design, marketing, management, and implementation. Sagewell was selected as the program manager. A contract is being finalized and program design has begun. Expected program kickoff is late January 2015.

CSEC has begun a partnership with the Tufts University Mechanical Engineering Department on a student project to study air-source heat pumps. The objective of this project is to gather and consolidate data on heat pumps' costs and greenhouse gas emissions that would enable objective comparisons of heat pumps vs. more traditional heating system types like oil, propane, and electric heat systems.

CSEC is a dynamic group of citizens with a strong commitment to sponsoring policies and programs that help reduce energy consumption in a manner that works well for the Concord community. We usually meet on the second Tuesday evening of each month and welcome community input and participation.