

Case Study: Town of Fairfield, CT

Fairfield has an impressive number of solar installations on (or next to) a diverse range of public buildings. In total, the town has over 30 photovoltaic projects in operation or under development. Through power purchase agreements (PPA), the town has avoided the risks and obligations of ownership, while locking in advantageous electricity rates with the solar companies who are responsible for the solar systems. These companies build, design, finance, insure and agree to maintain each installation. In each case, the town negotiated PPA's that are guaranteed to cost less than \$0.15/K WH for 20 years. Since \$0.14/K WH was the cost of electricity to Fairfield in 2014, taxpayers are guaranteed to save money during the term of all contracts.



Carport at Fairfield Recreation Center

Among the facilities that now have PV are the town's library, transfer station, Marina, maintenance building, firehouse and an elementary school, to name a few. One PV system was built as a carport in the parking lot of the recreation center and provides nearly 100% of the center's electrical needs. The largest installation may be at the town's landfill, which will provide approximately 1,600,000 kWh annually for the Wastewater Pollution Control Facility (WPCF). With the solar array, plus about 1,000,000 kWh in planned annual energy conservation, and 4,000,000 kWh provided by a fuel cell, the WPCF will soon become a net zero energy facility.

Fairfield has also created a microgrid to provide electricity to key facilities in times of emergency. According to town documents, "Microgrids provide electricity to critical facilities and town center on a 24/7 basis. They include a system of "trips" and "transfers" to isolate the microgrid and provide power within its network even when there is a large-scale outage". Fairfield's Police and Fire Headquarters, the Emergency Communications Center, the nearby Cell Phone Tower, and Operation Hope's Homeless Shelter will all be part of the microgrid, which received a \$1.1 million grant from the State. The town is now in the process of installing a second microgrid at the WPCF for nearby facilities.

Energy efficiency has played a crucial role in Fairfield’s energy planning. According to its 2014 Clean Energy Action Plan, “*Between 1996 and 2013, Fairfield has lowered its electricity consumption in Town buildings by 32% and nearly eliminated the use of heating oil. These efforts have resulted in significant saving to the Town – in excess of \$1M*”. The town plans on an additional 20% reduction in energy use by 2018, which will be more challenging than it sounds given its accomplishments to date.

How has Fairfield accomplished so much? Here are three ingredients: first, someone (and later a small group) who championed the cause of renewable energy and energy efficiency; second, a manageable, successful first project, which created political and public support; and third, saving money for the town in a way that minimized risk. People involved also mentioned it was useful to create a solid power purchase agreement, through a process that involved a number of town officials. This provided a tool that could be used over and over again. It’s worth noting too that none of this happened overnight.

Fairfield	
Population	60,855 (2013)
Energy Efficiency	From 1996 to 2013, achieved a 32% reduction in energy use. Goal of 20% reduction by 2018. Benchmarking, pursuing a variety of efficiency measures, and creating a culture of conservation were key. Recently embarked on LED lighting program for 19 town buildings.
Renewable energy project(s)	Over 30 PV projects on public buildings, existing or planned (see Fairfield Clean Energy Action Plan , P31)
Own or Power Purchase Agreement (PPA)	All PPA
If PPA, price per kWh	The price on projects vary, but it is always \$0.15/kWh or less, for the 20 year contracts run. Since the town was paying \$0.14/kWh on average for its electricity in 2014, it is protected from future grid power price hikes.
Virtual net metering (VNM)	No
• Beneficial accounts	-
• Income from VNM	-
Geothermal or Heat Pumps	No

Solar carport(s)	Yes
% Municipal Electricity from Renewables	As of 2017, approximately 46%
Annual or cumulative savings	\$2.4 million annually
Solar contractor(s)	Greenskies, Skyview, Kingspan
For more information	Ed Boman, Assistant Director of Public Works, eboman@fairfieldct.org 203-256-3010

Sources and Links:

[Fairfield Clean Energy Taskforce](#)

[Fairfield Train Station Solar Project](#) (The Fairfield Board of Selectmen eventually voted not to proceed with this project).

[Going Green \(Fairfield\)](#)

[Town of Fairfield Clean Energy Action Plan](#)

[Fairfield Microgrid Project](#)

[Fairfield says thanks to town employee Ed Boman](#)

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