



<b>Facility type</b>	Town/K-12 buildings
<b>Project cost</b>	\$8.8 million
<b>Annual savings</b>	\$256,920
<b>Contract term</b>	18.8 years
<b>Contract type</b>	ESPC

## TOWN OF BERLIN & BERLIN PUBLIC SCHOOLS

Berlin, CT

From a fast-tracked audit through construction, leaders at the Town of Berlin were in hot pursuit of building improvements, including use of solar energy through a guaranteed energy savings performance contract (ESPC).

After a competitive procurement process, the Town of Berlin selected NORESKO for its town-wide energy and facilities upgrade project. The town signed an investment grade audit agreement with NORESKO in June 2015 and entered construction of an \$8.8 million ESPC project within six months. The NORESKO team worked closely with town employees to meet swift approvals and deliver customer-focused scheduling for design and construction.

Performance contracting allowed the town to address building infrastructure and energy generation needs like those faced by many similarly-sized municipalities. Leaders had planned ahead, but Berlin's 2013 Facility Condition Assessment report identified major capital needs to address emerging HVAC requirements, including boilers nearing the end of useful serviceable life. Plus, leaders wanted visible ways to demonstrate the town's commitment to energy efficiency, including a Clean Energy Communities Municipal Pledge goal to purchase 18 percent of electricity from clean, renewable energy sources.

NORESCO addressed the myriad needs with a comprehensive portfolio of energy conservation measures funded from savings. The robust energy and cost savings measures improved facility infrastructure, reduced greenhouse gas emissions, bolstered comfort conditions in schools and town buildings and provided capacity to generate more than 800 kilowatts of electricity from solar photovoltaic arrays located at four schools. Supplementing the project financials is a 15-year contract for receipt of CT Zero Emissions Energy Credits (ZRECs) for all solar output produced.

By planning ahead and leveraging a bundle of energy conservation measures, town leaders delivered a self-funding and healthy mix of building system and renewable generation assets that will brighten Berlin's way for years to come.

### Technical Highlights

- ▶ Lighting improvements and controls
- ▶ Energy management control system upgrades with direct digital controls
- ▶ Premium-efficiency motors and variable frequency drives
- ▶ Walk-in refrigeration updates
- ▶ Building envelope improvements
- ▶ High-efficiency condensing boilers
- ▶ New air-handling units and fan coil units to improve HVAC systems
- ▶ Solar photovoltaics

### Environment Impact

- ▶ 1,738,189 kWh reduction in annual electricity consumption
- ▶ 25,672 CCF reduction in natural gas consumption
- ▶ 2,818,660 lbs. reduction in CO<sub>2</sub>  
1,328 lbs. reduction in SO<sub>x</sub>  
2,982 lbs. reduction in NO<sub>x</sub>
- ▶ Equivalent to removing 311 cars from the road annually