

Public Service Electric and Gas Company (PSE&G) – A CLEAN Program Brief

PSE&G’s solar initiatives unleash utility owned wholesale distributed generation in New Jersey

Overview

This brief examines PSE&G’s success in deploying utility owned wholesale distributed generation (WDG) and its subsequent rise as one of the nation’s top ten solar-connected utilities. PSE&G’s solar initiatives combined with progressive research and forward thinking state renewable energy policies have launched PSE&G into the national spotlight as a clean energy leader while unleashing utility owned WDG.

PSE&G is one of the largest combined electric and gas companies in the United States and is also New Jersey’s oldest and largest publicly owned utility. The company serves 2.2 million electric and 1.8 million gas customers, or approximately 70% of the state’s population. PSE&G is the largest subsidiary of PSEG.

Program Details

Program sizes

1) Solar 4 All is a 125 megawatt-dc (MW-dc) program that utilizes rooftops, solar farms, utility poles, and landfills/brownfields for large-scale, grid connected solar projects. As of mid-2015, more than 120 MW-dc of the 125 MW-dc total are in service.

- The program was initially approved by the New Jersey Board of Public Utilities (BPU) in 2009 allowing PSE&G to invest up to \$515 million to install 80 MW-dc of solar capacity (all installed to date).
- The BPU approved an extension to the program in 2013 allowing PSE&G to invest up to \$247 million more to install 42 MW-dc of solar

capacity on landfills and brownfields and 3 MW-dc in solar pilot programs for storm hardening and grid resiliency.

- On May 11, 2016 PSE&G filed a request with the BPU for a second extension to the program that will allow PSE&G to invest approximately \$275 million to install another 100 MW-dc of solar capacity on additional landfills and brownfields.

Total solar capacity: 125 MW-dc

2) Solar Loan is a 178.5 MW-dc loan program that is the second piece of PSE&G's solar development strategy. This program encourages business and residential customers in the utility's electric service territory to install solar energy systems on their homes and businesses. Over 80 MW-dc of solar capacity (mostly net energy metered export) is online to-date.

Total solar capacity: 178.5 MW-dc

Project sizes

Solar 4 All: Small scale is 1-100 kW; Medium scale is 100 kW-1 MW; Utility scale is 1 MW and up; all projects are utility owned

Solar Loan: Project specific; financing to establish loan amount

Pricing

Solar 4 All: Small scale and medium scale: no pricing mechanism established; megawatts deployed is the only metric. Utility scale: competitive bids through RFP; all utility owned

Fees and deposits

Solar 4 All: no fees or deposits

Solar Loan: minimal fees

Eligible energies

Solar

Contract duration



Solar 4 All: none; all utility owned projects

Solar Loan: 15 years (standard)

Utility Highlight

PSE&G's Solar 4 All and Solar Loan programs

Solar 4 All™

PSE&G's Solar 4 All is a 125 MW-dc program that utilizes rooftops, solar farms, utility poles, and landfills/brownfields for large-scale, grid connected solar projects. Solar 4 All installations are grid-connected to PSE&G's distribution system and the power is sold into the wholesale power grid. As of May 2016, this program has helped PSE&G deploy nearly 125 MW-dc of utility owned WDG throughout its service territory.

PSE&G's Solar 4 All delivers benefits to ratepayers. The revenue PSE&G receives from the sale of Solar 4 All solar energy and capacity the sale of the solar credits and the federal investment tax credit realized is returned to ratepayers by offsetting the overall cost of the Solar 4 All program.

Solar 4 All supports clean local solar projects. It maintains the same framework and structure as CLEAN (Clean Local Energy Accessible Now) programs that are currently purveyed throughout the United States. CLEAN programs make it easier to build clean local energy projects, get them connected to the grid, and establish long-term contracts to sell the power produced to utilities. These installations will provide enough solar electricity to power about 20,000 average-size New Jersey homes annually.

Solar 4 All helps New Jersey reach its solar power goals, helps promote a cleaner environment, turns landfills and brownfields green with solar power, and spurs economic development by creating good jobs and making the state a center for solar development. These projects provide more than 30 MW-dc of solar capacity and benefit from economies of scale compared to the typical residential net metered solar project.

Solar 4 All also features 40 MW-dc of pole-attached solar, which saves space while generating highly distributed solar energy. A 40 MW-dc solar farm would require about 140 acres, or about 110 football fields, of land. The 40 MW-dc of utility pole-



mounted solar units occupies no real estate. More than 174,000 pole-attached solar units are installed in PSE&G's electric service territory around the state.

Over the next few years, PSE&G will be building an additional 21 MW-dc of solar capacity on additional landfills and brownfields in the utility's electric service territory. Solar 4 All will also support 3 MW-dc of solar generation featuring unique solar technologies centered on energy storage and grid-hardening applications.

Solar Loan

The 178.5 MW-dc Solar Loan program is the second piece of PSE&G's solar development strategy. This program encourages business and residential customers in the utility's electric service territory to install solar energy systems on their homes and businesses. PSE&G solar loans can help make solar ownership affordable by financing a major portion of the solar system and providing a unique repayment option that locks in a guaranteed value of the Solar Renewable Energy Certificates the system is expected to generate.

The Solar Loan program has granted more than \$250 million in loans and helped more than 1000 customers finance over 80 MW-dc of solar capacity on their homes and businesses.

Lessons Learned

PSE&G has figured out a way to pass on the benefits of utility owned WDG to its customers that many utility companies haven't yet. WDG refers to distributed generation systems that connect to the local distribution grid and sell the electricity they produce to the local utility. The clean local energy produced by WDG is used to serve local energy demand while enhancing grid reliability and resiliency.

PSE&G has learned that in order to remain one of the nation's top solar-connected utilities, they must continue to invest in energy efficiency, renewables and other advanced, clean technologies. Over many years, PSE&G has made large investments to reduce emissions of traditional pollutants from their fossil-fueled plants to a small fraction of former levels.

Additionally, PSE&G has learned that commitment to energy efficiency is a key component to fighting climate change and boosting New Jersey's economy. PSE&G is realizing the benefits of energy efficiency. Their energy efficiency programs have helped PSE&G customers save more than 180 million kilowatt-hours of electricity,



which is enough to power 25,000 homes for a year and 5,000,000 therms of natural gas, which is enough to supply 5000 homes for a year.

PSE&G is a leader in expanding access to energy efficiency and renewable solar power while investing on many fronts to meet the increasing demand for reliable energy from cleaner sources.

Conclusion

PSE&G is the pioneer behind utility owned WDG in the United States. The Clean Coalition continues to support utility owned WDG and is thrilled that PSE&G has already deployed nearly 125 MW-dc of its WDG throughout their service territory; and they are currently seeking to install another 100 MW-dc of utility owned WDG solar capacity.

PSE&G is also a national leader in landfill/brownfield solar development. Salvaging and reusing brownfield and landfill sites as viable solar resources increases the amount of solar generation in the state. This subsequently gives new purpose to land that would otherwise have very restricted opportunities for development.

New Jersey's renewable portfolio standard (RPS) requires load serving entities in the state to procure 22.5% of the electricity they sell to customers from qualifying renewable energy by 2021. Also contained within in that goal is a specific allocation for solar power. PSE&G is helping to meet the RPS target by directly developing solar projects and providing financing for solar projects as in the Solar 4 All and Solar Loan programs.

PSE&G's renewable energy initiatives have helped make New Jersey one of the leading states for solar energy development. The utility's renewable energy initiatives operate much like the successful CLEAN programs developed by the Clean Coalition, which create jobs, make communities more resilient, stimulate economic activity, and help mitigate climate change.

References

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