RESILIENT POWER CASE STUDY

Maryland Game Changer Award Program

Konterra Solar + Storage Microgrid

November 2014

RESILIENT POWER
A Project of Clean Energy Group
www.resilient-power.org

Long the nearly-exclusive province of military bases, micro-grids are now entering the mainstream as an answer to resilient power needs. With its groundbreaking Konterra solar + storage-powered microgrid, Maryland demonstrated that fossil fuels are no longer needed to make microgrids work.

In 2013, Maryland completed its first commercial solar + storage microgrid at Konterra Realty, a 2000-acre business and residential mixed-use complex in Prince George's County. The solar + storage design integrates a 1,368 photovoltaic car-port array, producing 402 kW of electricity, with an advanced 300 kWh grid-interactive lithium-ion battery storage system. Also incorporated are two electric vehicle charging stations and LED parking lot lighting.

The microgrid is expected to supply more than 516,000 kWh annually, equivalent to 20 percent of the electricity used by Konterra's 130,000 square foot headquarters building. Should a grid outage occur, the microgrid will island from the larger grid. The lithium-ion batteries should support a critical load of 50 kW for four hours with storage alone.

The project was developed by Standard Solar and Solar Grid Storage, and was supported by a grant from the Maryland Energy Administration's Game Changer Awards, established to support clean energy innovation and early commercialization energy generation technologies. Konterra received a Game

Changer award of $250,000 (total project cost was $2.5 million). For Solar Grid Storage, the project was a demonstration of their innovative business model, under which they provide a battery and inverter at little or no charge, collocated with a renewable generator. Revenue is generated by selling frequency regulation, demand response, and other grid services, while the host and DG operator gain the benefits of having a storage device onsite, such as demand charge reduction and peak shaving.

CEG/CESA supports the resilient power efforts of Maryland and other states. More information about our Resilient Power Project is available on our website at www.resilient-power.org.

This paper is a product of Clean Energy Group and part of a series of reports and case studies issued through the Resilient Power Project, a joint project of Clean Energy Group and Meridian Institute. This project works to expand the use of clean, distributed generation for critical facilities to avoid power outages; to build more community-based clean power systems; and to reduce the adverse energy-related impacts on poor and other vulnerable populations from severe weather events. This project has been generously funded by The JPB Foundation, The Kresge Foundation, and The Surdna Foundation. The views and opinions expressed in this publication are solely those of the authors. For more information about this project, download its reports, and links to sign up for its webinars and e-distribution list, please visit the Resilient Power Project's website at www.resilient-power.org.

CleanEnergyGroup
Innovation in Finance, Technology & Policy

Clean Energy Group, 50 State Street, Suite 1, Montpelier, VT 05602
Phone: 802-223-2554 ■ Email: info@cleanegroup.org ■ www.cleanegroup.org ■ www.resilient-power.org