



## InVerde Ultera 100 - Cogeneration Module



Seaford High School, in Seaford, Delaware and Tecogen Inc. received the Energy Solutions Center's (ESC) 2013 Partnership Award for Innovative Energy Solutions. The Energy Solutions Center Inc. is a non-profit organization of energy utilities and equipment manufacturers based in Washington DC that promotes energy efficient natural gas solutions and systems for use by residential, commercial, and industrial energy users. The award recognized the outstanding partnership between the Seaford School District and Chesapeake Utilities, a diversified energy company that provides natural gas distribution to residential and commercial customers in Delaware

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and Maryland, for the efficient use of clean natural gas energy solutions. In particular, the recent additions and renovations to Seaford High School which incorporated a Tecogen natural gas engine-driven cogeneration system in a way that will save significant taxpayer energy dollars while providing backup electric power and heat in the event of a blackout.

Seaford High School's expansion project featured a 65,000-square-foot addition to the existing 150,000-square-foot school. The project included a Tecogen InVerde 100 kilowatt cogeneration system that produces continuous electric power and approximately 700,000 Btu per hour of usable thermal output. The project also added a new central

plant with condensing gas boilers and a new absorption chiller. Free waste heat from the cogeneration unit provides space heat via plate heat exchangers. Heat is also used to power a 40 ton Broad absorption chiller, offsetting about 12% of the school's cooling needs. By having onsite electric generation, the new larger school building actually has lower utility costs than the older, smaller building did. The school will be able to reduce its energy costs by an estimated \$60,000 to \$70,000 per year.

The new technologies save not only money but also our environment. The onsite cogeneration equipment displaces grid electricity and its associated production and transmission losses. This means less fuel is burned and greenhouse gas emissions are reduced, resulting in improved local air quality. The greenhouse gas CO2 emissions associated with Seaford High School are expected to drop by over 260,000 pounds per year.

Seaford High School has earned the distinction of becoming the first non-utility facility of any kind in the State of Delaware with an operating gas-fired cogeneration system. Darrell K. Wilson, Director of Marketing and Communications, Chesapeake Utilities said "CHP is certainly one of our major strategic initiatives, if you can generate your own electricity, that's a good thing. And it's quiet and clean." CHP is supported by the American Gas Association, and is quickly growing in popularity. Some states have grant money available to help interested facilities install a co-generation systems. The federal government also encourages institutions such as schools, universities, hospitals and manufacturing companies to choose cost-effective, energy efficient, combined heat and

power (CHP). In 2012 an executive order called for production of 40,000 megawatts over the next decade.

"The Seaford School District saw the wisdom and benefits of employing a natural gas-fired cogeneration system to reduce its overall operating costs during its recent High School expansion project," explained Roy Whitaker, Chief of Buildings and Grounds for the Seaford District. Seaford is the most energy efficient school district in the state of Dela-

ware and is has won three EPA "ENERGY STAR Leader" awards, one of only a few school districts in the Nation to receive this distinction. The Seaford School District is honored to be recognized for their efforts in energy conservation. Chief Operational Officer, Joanna Adams, shared: "We are very pleased and excited that our very own Roy Whitaker has once again put Seaford School District on the map with the receipt of



Seaford High School's addition and renovation project at received the Energy Solutions Center's 2013 Partnership Award for Innovative Energy Solutions. Tecogen's InVerde Ultra 100 cogen module is a key feature of the project.

yet another national energy award. Through his tireless efforts and the efforts of his staff, Roy continues to improve our energy performance year after year. Roy's attention to detail especially regarding energy performance speaks volumes to his dedication to not only the district's energy efficiency today but to future generations of Seaford residents."

For more information about Tecogen's *InVerde, INV-100, Inverter-Based Cogen Module* or our other Natural Gas Engine-Driven Products please visit [www.tecogen.com](http://www.tecogen.com)

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