

Siemens floating power plants will support New York's renewable energy strategy

- **Siemens to replace four floating power generation barges in the Upper Bay of New York City**
- **SeaFloat turnkey solution will provide reliable peaking power for New York City's renewable ambitions**
- **Boost power generating efficiency by nearly 50 percent**
- **20-year long-term service agreement signed**

Astoria Generating Company and Siemens signed a contract for the turnkey construction of two SeaFloat power barges to be equipped with eight Siemens SGT-A65 gas turbines. The barges will replace four existing power barges located at Gowanus Generating Station in the Upper Bay of Brooklyn, New York City, resulting in cleaner, more efficient energy production. Siemens will preinstall the high-efficiency power generating facilities on two newly constructed floating barges with a generation capacity of about 300 megawatts (MW) each. Retrofitting the station with SGT-A65 gas turbines and generators will improve the plants' power generating efficiency by nearly 50 percent while significantly reducing potential emissions of pollutants like carbon dioxide and monoxide – all while using the existing gas infrastructure.

New York's demanding energy market

As New York's energy market changes, transitioning to more intermittent energy sources, New York City needs to maintain the reliability of its power supply while reducing potential emissions. The city – with more than 8.5 million inhabitants – is moving to obtain 70 percent of its energy from renewable sources by 2030. When solar and wind power can't meet the need, quick start peaking units like the Gowanus Generating Station will become even more important, especially in

congested areas like Southwest Brooklyn. The new units will provide that reliability while reducing emissions and offering the flexibility to move the barges as needed.

The four-barge Gowanus Station, with a current generation capacity of 640 MW, was originally installed in the early 1970s and is approaching the end of its service life. By replacing those barges with two modern floating power barges provided by Siemens, Astoria Generating Company will be able to retire the existing barges, reducing the total number of barges from four to two, and also retire two barges at the nearby Narrows Generating Station. Siemens will deliver eight SGT-A65 gas turbine generating sets – four on each barge – along with a Siemens control system. The turbines will run on natural gas as their primary fuel.

“As a holistic solution, the new SeaFloat power barges will help reduce potential emissions in New York City and provide a reliable power supply by helping keep the local grid stable,” said Karim Amin, CEO of Power Generation at Siemens Gas and Power. “SeaFloat combines the advantages of our high-quality proven power plant technology with the mobility and flexibility that’s required in peak consumption periods.”

Each SGT-A65 (Industrial Trent 60) aeroderivative gas turbine will deliver up to 76 MW for the Astoria project in simple cycle service at 41.8 percent efficiency. With its fast cold-start capability and high cyclic life, these engines can rapidly add power to the grid to compensate for fluctuating and variable renewable and other energy sources, making it an ideal solution for peaking markets. More than 115 of the SGT-A65 gas turbines have been sold worldwide with more than 1.8 million fleet hours of experience.

Siemens and Astoria also signed a contract for a 20-year long-term service agreement that will help support the gas turbines’ and generators’ optimal operating efficiency. The contract includes service on parts, repairs, field services, program management, and offerings from Siemens’ Omnivise Digital Services portfolio, including remote monitoring and diagnostics.

“As New York’s energy market changes to rely on intermittent power sources like wind and solar, we need to ensure reliability. These state-of-the-art units will provide the quick-start energy production New Yorkers need while reducing potential

emissions. And best of all, because they're on barges, they provide the needed climate adaptation, adjusting to sea-level rise and increased storm surges, and also can be moved if the power is needed elsewhere," said Mark Sudbey, CEO of Astoria Generating Company.

SeaFloat solutions

Variations of the SeaFloat power plants can be used as base load or emergency backup for existing power plants during peak loads or outages and to provide a fast power supply in the event of a humanitarian disaster. SeaFloat power plants can even be supplemented with a desalination plant to provide clean potable water that helps prevent disease. A wide range of gas turbine frames and combined cycle configurations are available so that an appropriate solution that meets specific requirements can be developed with customers.

The Siemens SeaFloat power plants use the company's proven and reliable equipment that's been adapted for application on floating devices. SeaFloat power plants can be moved to any site that's accessible by sea or major rivers and require almost no investment for land acquisition. SeaFloat has been designed to be as small as possible, and it's defined a new standard in power density. Because the plants' construction and a large portion of commissioning are performed using standardized equipment under strictly controlled conditions in the world's leading shipyards, a short lead time can be realized. Construction of the plant also doesn't interfere with any required onshore infrastructure like the installation of substations, transmission lines, and access roads. This allows for a significant reduction in the total time required for these kinds of infrastructure projects. Typical applications include the power supply for remote areas like islands, the development of industrial areas on shorelines or major rivers (for example, chemical and desalination plants), and brownfield applications.

This press release and press pictures are available at

www.sie.ag/2IXAOyT

For further information on SeaFloat power plants, please see

www.siemens.com/seafloat

For further information on Siemens Omnivise Digital Services, please see

www.siemens.com/omnivise-fleet-management



The picture shows two SeaFloat power barges each equipped with four SGT-A65 gas turbines.

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Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 170 years. The company is active around the globe, focusing on the areas of power generation and distribution, intelligent infrastructure for buildings and distributed energy systems, and automation and digitalization in the process and manufacturing industries. Through the separately managed company Siemens Mobility, a leading supplier of smart mobility solutions for rail and road transport, Siemens is shaping the world market for passenger and freight services. Due to its majority stakes in the publicly listed companies Siemens Healthineers AG and Siemens Gamesa Renewable Energy, Siemens is also a world-leading supplier of medical technology and digital healthcare services as well as environmentally friendly solutions for onshore and offshore wind power generation. In fiscal 2018, which ended on September 30, 2018, Siemens generated revenue of €83.0 billion and net income of €6.1 billion. At the end of September 2018, the company had around 379,000 employees worldwide. Further information is available on the Internet at www.siemens.com.