

# Wärtsilä Introduces New Hybrid, Energy Storage Solutions

Wärtsilä announced new hybrid power plants, engines+storage and energy storage solutions designed for global markets. Wärtsilä said the new solutions offer existing and future customers added value by utilizing energy storage technology together with traditional engine-based power generation. Wärtsilä also announced it would be offering stand-alone energy storage solutions.

"With these new solutions, Wärtsilä does not only enter the energy storage market but also becomes a systems integrator as we are able to optimize the usage of our hybrid power plants with EMS software," said Risto Paldanius, director, Energy Storage at Wärtsilä Energy Solutions.

In April 2016, Wärtsilä announced its entry into the solar photovoltaic (PV) business by introducing solar PV power plants and engines+solar PV hybrid power plants. No Wärtsilä hybrid solutions are further extended with energy storage technology. The company said the energy storage is gaining momentum and a large markets exist for stand-alone energy storage, for example in the US, United Kingdom and central Europe. Hybrid solutions including energy storage are increasingly becoming financially attractive, for example in areas where fuel prices are high and the penetration of renewable power sources is significant, the company said.

By providing hybrid power plants, engines+storage Wärtsilä also introduces energy management system (EMS) designed to optimize the usage of hybrid power plants. In July 2016, Wärtsilä announced its co-operation with Greensmith, a leading provider of EMS software. Greensmith's GEMS platform is the most widely-deployed energy storage software solution enabling the most-advanced and proven energy storage systems in the world. With GEMS, hybrid power plants run in an optimal way at all times ensuring ideal utilization of both the engines and the energy storage solution.

"We are very excited to introduce these new solutions to our customers. Adding energy storage technology to our existing engine-based power plants enables our customers to have instant power while saving fuel, maintenance costs and reducing emissions. With a world-class EMS software platform we solidify our systems integration capabilities" said Javier Cavada, president of Wärtsilä Energy Solutions.

The company said fundamental market drivers for hybrids are fuel prices/LCOE, renewables prices and lowering costs of energy storage, particularly Li-Ion batteries. Li-Ion technology advancements and price reduction is largely based on the Electrical Vehicle (EV) deployment, the company said. Wärtsilä said it sees high market potential in island/isolated grids, captive power sector and in the areas where there is a large renewable energy source, particularly solar PV, deployment.

The company said there will be a need for flexible, dispatchable thermal power generation in every power system, for the times that the sun is not shining or the wind is not blowing. The company's engine-based power plant value will be enhanced even further with the storage solution. In some smaller islands, with small power demand, there might be opportunities to go "all-green" by 2040s. For example, the state of Hawaii plans to have 100% renewable energy by 2045.

Wärtsilä believes that the market is looking more and more towards distributed energy generation resources, where value-based/optimized solutions will make lot of sense. In some markets,

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renewables are competing neck-and-neck with traditional power generation and lowering the entry barriers for the hybrid solutions, the company said.

Wärtsilä said it is not in a business of manufacturing batteries; instead, it will be using technologically best solutions available. Wärtsilä said it wants to co-operate and partner with such manufacturers, similar way as in our traditional engine business, and is always looking for and evaluating M&A opportunities in the market.

The company said it firmly believes that we are seeing just the tip of the iceberg of the hybrid market right now. By being technology neutral the company said can de-risk the technology development.