A Wärtsilä Flexicycle™ power plant will increase Senegal’s energy production and lower the country’s energy costs. On a broader scale, the thermal plant will provide needed flexibility to enable the integration of intermittent renewable energy into Senegal’s grid.

With 450 MW of installed capacity in Senegal, Wärtsilä is the country’s leading provider of power generation equipment. The Matelec company placed an order for the delivery of an energy efficient 130 MW Flexicycle™ power plant. This investment will enable Senegal to achieve its goal of reducing consumer electricity pricing.

“We needed a reliable and qualified partner to engineer and provide a flexible and reliable energy system now, and later as our energy infrastructure evolves. With its global and Pan-African experience, Wärtsilä fully meets the project requirements. This is a major energy project that is very important for Senegal.”

Sami Soughayar, CEO, Matelec Group.

“Weärtsilä has a well-established footprint in Senegal and throughout West Africa, and our global references provide ample proof of our capabilities in delivering efficient, reliable and flexible solutions. We are proud to have been selected as the equipment provider for this important project.”

Arnaud Gouet, Regional Director, Africa West, Wärtsilä Energy Solutions.
A flexible power plant with high reliability

Matelec is the EPC contractor (engineering, procurement and construction) for the independent power producer (IPP) Melec Power Gen, with whom Senelec has signed a 120 MW power purchase agreement (PPA). The 20-year PPA is a direct follow-up to a previous development agreement between Senelec, the state power utility, and Africa50, the infrastructure fund for Africa, for the selection of an IPP to develop a 120 MW combined cycle thermal power plant.

Wärtsilä will engineer, manufacture and deliver the Malicounda power project to the Mbour region, 85 km south of the country’s capital Dakar. The plant is expected to become operational in 2020.

The scope of Wärtsilä’s contract comprises (in addition to the seven engines) a turbine, auxiliary system, control system, engineering, supervision of the erection, and commissioning of the plant. The output of each genset is 17 MW, and the total output of the power plant is 130 MW. The electricity generated will be fed into the grid through an existing distribution substation.

The Malicounda power plant will initially operate on seven Wärtsilä 18V50 engines running on heavy fuel oil (HFO). There is, however, an option to convert the engines to gas operation as soon as gas becomes available in Senegal.

Senegal has substantial potential to develop solar and wind power and its offshore natural gas resources. For the renewables, the country is also exploring other crucial technologies including energy storage.

The Malicounda project is further proof of Wärtsilä’s understanding of the constraints and way of working of IPP’s.

The Government of Senegal has prioritised the development of the power sector, making it a central part of its Plan Sénégal Emergent (PSE), in which Senegal aims to become an emerging economy by 2025 and provide electricity access for everyone.

Towards increased electricity access

Wärtsilä Flexicycle™ power plants combine the benefits of a flexible, simple-cycle plant with the outstanding efficiency of a combined cycle plant. The Flexicycle™ solution is based on gas, multi-fuel, or liquid fuel power plants combined with a steam turbine. Flexicycle™ power plants can operate in a highly-efficient combined cycle mode as well as in a dynamic rapid simple-cycle mode.

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