CASE
Veolia

Fortum eNext long-term service agreement enables optimal lifecycle management of turbine generators

Veolia Services Suomi Oy is responsible for the operation and maintenance of power plants in Kilpilahti, the largest oil refining and petrochemical cluster in the Nordic countries. Kilpilahti, located in Porvoo, Finland, is home to over 40 companies, including Borealis and Neste.

Fortum eNext

Long-term cooperation for optimal maintenance

To meet the energy needs of Neste's refinery and Borealis' petrochemical production, the companies together with Veolia established a joint venture to build a new combined heat and power plant to replace the old plant, which had reached the end of its lifecycle. The new power plant under construction is expected to start up in 2019 and has steam production capacity of 450 MW and electricity generation of 30 MW.

Very few companies have the special competence and skills in-house that are required for the maintenance of turbine generators, so Veolia, as the provider of operation and maintenance services to the new CHP plant, sought a partner for the lifecycle management of the plant's gas and steam turbines and generators.

"This kind of equipment requires the expertise of someone who is specialised in turbine generators"

"Based on my experience from previous collaborations, we felt that Fortum eNext was a natural partner. The fact that Fortum had previously managed this equipment was important. They have the resources, skills and the insight with regard to operational matters and potential problem areas, as well as the maintenance work of this type in general. I have great confidence in Fortum. I know they are skilled in these matters," says Juha Kujala, Maintenance Manager at Veolia Services Suomi Oy.

CASE Veolia

Customer challenges	Solution by Fortum eNext	Customer benefits
How to achieve full, 100% availability and optimize risk levels related to turbo generators?	Systematic long term approach to maintenance planning and implementation through a long term partnership agreement with a reputable expert organisation	Maintenance history is known, enabling careful planning and preparation of both maintenance work and needed spare parts.
Limited internal competence regarding turbo generators	Full maintenance of turbogenerators by Fortum eNext for the next 8 years, including support during warranty period of the new steam turbine generator	Savings through spot-on maintenance work at an optimal time and shorter production down time overall
Finding the best partner for maintenance activities		Expert help and support available always when needed
		No time is wasted in supplier selection

Fortum eNext

Savings in costs and time

The service agreement signed with Fortum eNext covers all the necessary maintenance actions for turbine generators at the Kilpilahti CHP plant for the next eight years.

A lot can happen in eight years. For example, gas turbines contain a number of critical components that require various inspections. The problems can consist of anything from wear and tear to the turbine simply not working as it should.

A long-term maintenance agreement has several benefits for the customer. By using the same service provider, all historical data is readily available, the technical support is spot-on, and it's easier and faster to get the spare parts required. The properly timed reconstruction and replacement of spare parts enables shorter maintenance periods. This can generate significant cost savings for the owner of the power plant. The model also saves time when it comes to the selection of a service provider and the agreement of contractual details, enabling faster problem solving.

"The partnership also enables faster problem solving"

Fortum eNext also has the expertise needed to provide support services for generators and steam and gas turbines through its generator workshop, including high-speed balancing services, in Västerås, Sweden, and a turbine workshop in Naantali, Finland. This enables customers to have a single point of contact for all turbine generator-related services.

Targeting 100% availability for the customer

Veolia has a target of 100 per cent availability for each customer, which is a challenge in itself.

"I expect to be able to trust that Fortum's maintenance work will address any problems to avoid unexpected faults or other outages. The client's business is the most important thing – we must never disrupt it," says Juha Kujala.

"Together we can reach Veolia's ambitious target of 100 per cent availability for the end customer"

Olli Kaarela, LTSA Contract Manager at Fortum eNext Turbine and Generator Services, agrees with Juha Kujala and also emphasises the importance of precision in the work:

"It is of utmost importance that the customer's business should continue as planned and that no unplanned downtime should occur. We must keep to the planned schedule and provide service of the highest quality," he says.

A platform for development

The partnership also creates an ideal platform for the contracting parties to work together to draw up a development programme for the future.

"We have actually already started up a pilot project that combines online monitoring and remote monitoring of the turbine generators. Perhaps it will

be possible in the future to integrate these systems with machine learning and AI," says Juha Kujala, who takes a positive view of the collaboration so far and sees significant opportunities for future development:

"So far, the process has gone well. The partnership has led to a more systematic approach. The current operational model is different. The suppliers have more and more areas of responsibility and they must have the opportunity to implement these in good time, while ensuring satisfactory cooperation. I have no criticisms – the partnership has been positive. But we must continue to develop. This process is certainly not complete and there is still plenty of room for improvement. We as the client and Fortum as the service provider must both play an active part. And if any new methods are developed, I expect Fortum to provide us with them."

CUSTOMER

Veolia, the operator and one of the owners of Kilpilahti power plant

SITE

Kilpilahti thermal power plant in Porvoo, Finland

Using mainly side streams from the nearby refinery as a fuel

- Current thermal plant: 5 units with altogether 5 boilers, 2 gas turbines and 2 steam turbine generators (condensing + backpressure).
- 3 new boilers and a steam turbine generator under construction. Once commissioned, 2 old boilers and the old steam turbine generators will be decommissioned.
- Eventually 6 operational units with electricity generation capacity of 170MW
- Gas turbine plants: General Electric gas turbines, Alstom generators
- Steam turbine plant: Siemens steam turbine and generator

If you want to know more about the case or about long-term service agreements, please contact:

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