

Wärtsilä contribution to the ERGEG Public Consultation on the Pilot Framework Guidelines on Electricity Grid Connection

Wärtsilä – Leading European Energy Technology Provider

- Wärtsilä is a global leader in complete lifecycle power solutions for the marine and energy markets.
- In 2009, Wärtsilä's net sales totalled EUR 5.3 billion with 18,000 employees. The company has operations in 160 locations in 70 countries around the world.
- More than 4500 Power Plants distributed over 166 countries are based on Wärtsilä technologies and almost 10 000 engine-driven units offer 45 GW of reliable power capacity around the clock.
- Wärtsilä plants are flexible in following the actual demand and produce the necessary electricity typically from natural gas, bio fuels or heavy fuel oil.
- In 2009 Wärtsilä's research and development expenses totalled €141 million. The R&D efforts are strongly focusing on fuel flexibility, energy efficiency, operational characteristics and emission reduction.

The Main Features of Wärtsilä Technology:

- Wärtsilä represents a truly flexible power generation alternative for a modern electrical grid, offering flexible fuel alternatives, flexible operating modes and high efficiencies.
- Wärtsilä modular power plant technology based on multiple units in parallel allows for rapid installation and easy addition of capacity.
- Wärtsilä provides optimum solutions for load following and grid balancing.
- Wärtsilä technology based on reciprocating engines offers excellent balancing services to the modern electrical grid thus facilitating the integration of intermittent renewable energy.
- Wärtsilä power plants require a very short start-up time thus fulfilling the secondary control requirement of providing full load within 5 minutes without the need of spinning at zero load.

Wärtsilä Supports Deepening EU Level Grid Regulation

Wärtsilä supports the general EU energy priorities which seek to enhance security of energy supply and promote effective electricity production, to combat climate change by supporting low-emitting energy technologies and to strengthen EU's economic competitiveness through leading-edge energy technologies. The Framework Guidelines (FWGL) document rightly emphasized that the network codes must give support to power generation which offers stable and predictable prices and which facilitates the targets for penetration of renewable generation. Ultimately, this will be beneficial for the EU economy and for the consumers.

Wärtsilä – Enabling Renewable Energy Production

The FWGL stresses the fact that EU has an urgent need to enhance investments into electricity generation. Wärtsilä believes that - flexible, often decentralized - power production units with maximum dispatchability to support the increasing use of intermittent renewable power production (namely wind and solar) will play a crucial part in solving EU's huge energy challenges in the future.

In the context of Framework Guidelines, Wärtsilä strongly advocates an approach which continues to guarantee a free and fair access for all key technologies to the EU's energy market. This requires a harmonized set of adequate rules across the EU at both transmission and distribution system level. These rules need to take into account that the characteristics of the grid as well as the feasible generation options available to support renewable power production will never become fully homogeneous throughout the EU. Therefore, a certain degree of flexibility of the provisions and their interpretation by the regulators is needed in order to find an integral optimum that takes into account both the technical features of various generation capacity as well as the dynamic characteristics of the electrical grid to which it is connected.

Wärtsilä offers versatile solutions for Load Following and Grid Balancing

Wärtsilä technology provides optimal solutions for load following and grid balancing. Wärtsilä believes that in the context of decentralized power production its technology must be taken into consideration because it can play a major role in controlling the grid.

Wärtsilä believes that flexible and efficient power generation based on reciprocating engine technology can offer excellent balancing services to the modern electrical grid. This will help to enhance the integration of an increasing proportion of intermittent generation.

Inherent beneficiary features like fast start-up, rapid loading and great load following capabilities combined with very high electrical efficiencies make flexible power production with reciprocating engines very well suited to support electrical systems, dynamically and economically in an environmentally sustainable way. Furthermore, the rapid installation and easy addition of capacity of modular power plants based on multiple units in parallel makes it possible to rapidly and economically increase electricity production.

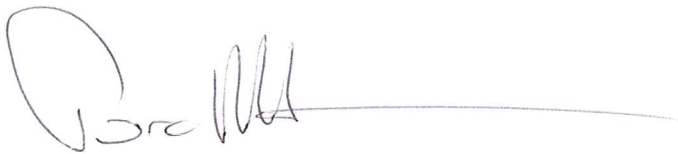
Specific Issues Linked to Consultation Questions

As a major technology provider, Wärtsilä believes that the key benefit of the FWGL and the subsequent technology specific grid code work is to ensure that standardized reasonable minimum requirements for relevant parameters will be harmonized. Unreasonable or inadequate requirements might lead to a situation which rules out the further application of technologies that offer many benefits from both a commercial and technological point of view.

Wärtsilä is committed to providing the best possible technical solutions complying with the technology specific code requirements. Should the code implementation require substantial modifications to the available technologies (i.e new development and testing) a reasonable timeline should be applied to ensure that the requirements can be met from a technical standpoint.

Concerning the parameters identified under objective #1 "Minimum requirements" namely frequency and voltage envelope, fault ride through capacity and information exchange, Wärtsilä believes that with its current range highly developed technologies all reasonable technical demands of the electricity system operators can be met. Furthermore, Wärtsilä believes that reasonable operational requirements for reactive power, load frequency control, and related balancing and ancillary services provisions can be readily facilitated and further enhanced by Wärtsilä technologies

Technical requirements should be elaborated in close co-operation between equipment suppliers, system operators and regulators in order to further a common understanding and fair treatment considering the boundaries of the various technologies. Wärtsilä is committed to actively participate in the EU harmonization process.

A handwritten signature in blue ink, appearing to read 'Tore Björkman', followed by a long horizontal line.

Tore Björkman,
Vice President, Sales
Wärtsilä Corporation