

THE NORDIC LEADER IN ENERGY TECHNOLOGY

EnergyVaasa

Robert Olander
Marketing Director

Finland, a leader in energy technology?

- The world's energy markets are facing inevitable change. The need for energy is growing everywhere, but particularly so in the developing countries.
- Renewable energy sources and new technologies are important topics of discussion. Markets are being clearly and increasingly regulated, not only by business economics, but also on political grounds
- In 2007, the EU agreed on the so-called 20-20-20 objective, by year 2020:
 - Reduction of CO2 emission by 20%
 - Share of produced energy from renewable sources to 20%
 - Increase of energy efficiency by 20%
- Creates opportunities within technology for:
 - Renewable energy
 - Energy efficiency
- This calls for
 - Innovation
 - International know-how
 - Strong networks
 - The right experts

Energy and environmental technology is becoming the engine of Finnish exports.

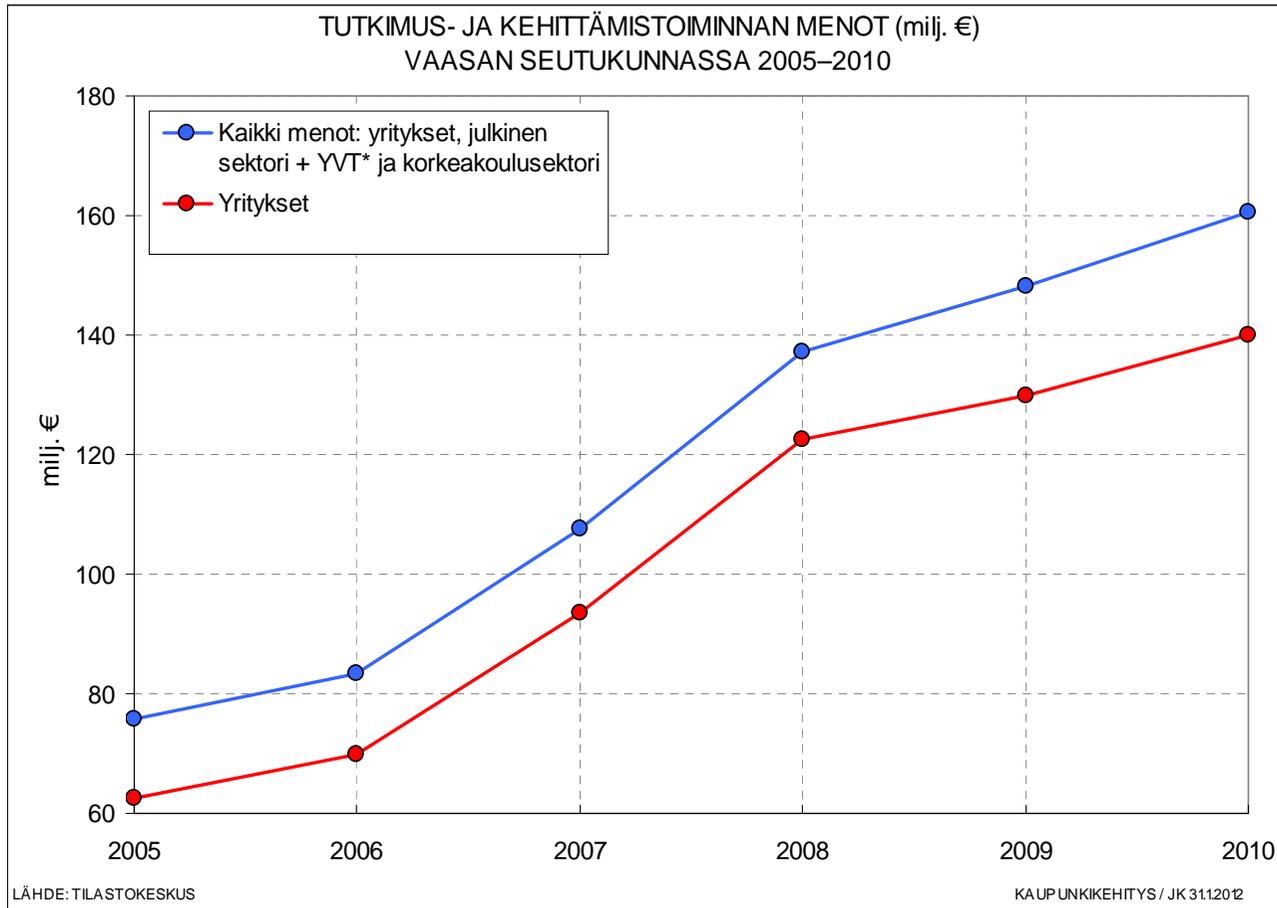
- In the Vaasa region there is versatile competence and large resources to take on the challenges in the field.
- More than 120 businesses, several of which are global market leaders in their field
- Total business turnover some EUR 4 billion annually, export rate over 70%
- About 30 % of total Finnish energy technology export, population less than 2%
- Current number of employees 10,000, $\frac{1}{4}$ of Finland's total energy sector manpower
- Number of employees in 2020 more than 20,000
- More than 800 experts specialized in energy related research and development
- Two of the three Finnish companies with the highest levels of R&D investment, are situated in Vaasa



Ostrobotnia in national comparison, technology industry



Investment in R&D over 5 years



Renewable energy and energy efficiency

- EnergyVaasa is working for a cleaner world – a world where energy is produced using environmentally sustainable methods, and where consumption is kept within reasonable bounds.



Renewable energy and energy efficiency



Products and services for renewable energy production

- Wind and solar power: components and turnkey deliveries ([ABB](#), [The Switch](#), [Vacon](#))
- Power plants for decentralized energy production ([Wärtsilä](#))
- Geothermal energy, centralized low energy network and energy from watercourses, thermal exchanger technology ([GeoPipe](#))
- Environmentally friendly energy production and distribution ([EPV](#), [Vaasan Sähkö](#), [Westenergy](#))

Products and services to promote energy efficiency

- Intelligent network solutions, electricity distribution automation ([ABB](#), [VAMP](#), [VEO](#), [There Corporation](#), [Arcteq](#))
- Efficient electricity distribution, from planning to turnkey deliveries ([ABB](#), [VEO](#))
- Energy efficient electric motors ([ABB](#))
- Power solutions and automation for the marine industry ([Wärtsilä](#))
- Frequency converters which reduce the consumption of electric motors ([Vacon](#))
- Energy production planning and consultation ([Citec](#), [VEO](#))

Innopower!



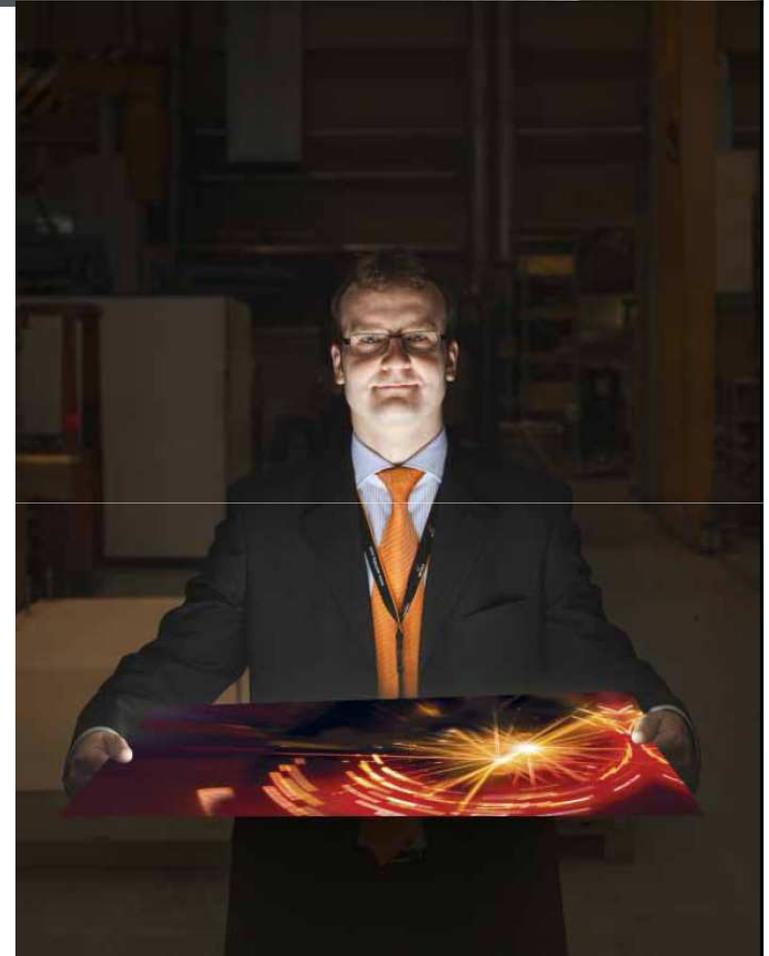
Wärtsilä corporation

Wärtsilä is a leading supplier of equipment, solutions and services for the marine and energy industries.

” The wind calms, night falls, but energy Wind and solar power offer pure energy, but the forces of nature inherently vary in availability, the rest of the time we need a balancing capacity reserve. Not even the most intelligent network solution can manage this alone. We also need smart power! ”

Niklas Wägar, manager, Electrical & Automation, Power Plant Technology

In 2009, Wärtsilä was selected among the world's one hundred best companies in sustainable development.



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Energy Efficiency



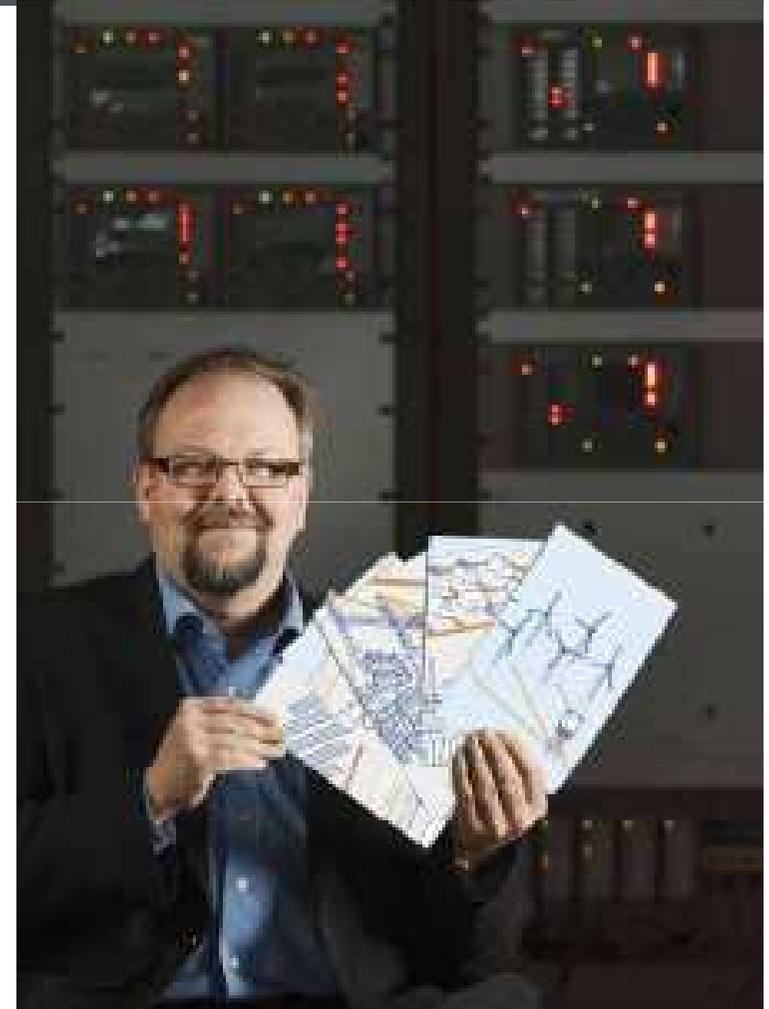
Intelligent networks

ABB creates solutions for all aspects of smart grids, from energy production, transmission, and distribution to energy efficient building automation solutions.

” In addition to local, renewable electricity production, smart grid solutions also enable an infrastructure that supports the use of electric cars, electricity storage, and automation that improves energy efficiency in our homes and buildings.. ”

Dick Kronman, business operation development manager

The ABB Group is a leader in the field of electric power and automation technology. ABB’s products, systems, and services improve the compatibility of its industrial and energy business clients in an environmentally friendly manner.



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International know-how



The Switch Group

Full power converters and permanent magnet generators

” Our aim is to be the global renewable energy markets’ leading technology company for converting electrical energy. We are on a wonderful journey, and it has only just begun... ”

Reijo Takala, Director/wind power

In 2011 The Switch Group was awarded the President of the Republic of Finland’s internationalization prize.



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Renewable Energy



Mervento Oy

Suoravetoisilla kestopagneettigeneraattoreilla toimivat tuulivoimalat

” Our first self-owned assembly factory will be located in Vaasa. We will commence the serial production of wind turbines during 2012. A power plant consists of some 2,500 different components, and more than 10,000 in total. In Finland we have more than 200 component suppliers, and the final product will utilize nearly 70% domestic products. ”

Patrik Holm, Technology Director

In 2010, Mervento Ltd was the largest Finnish start-up business ever to be financed with share capital

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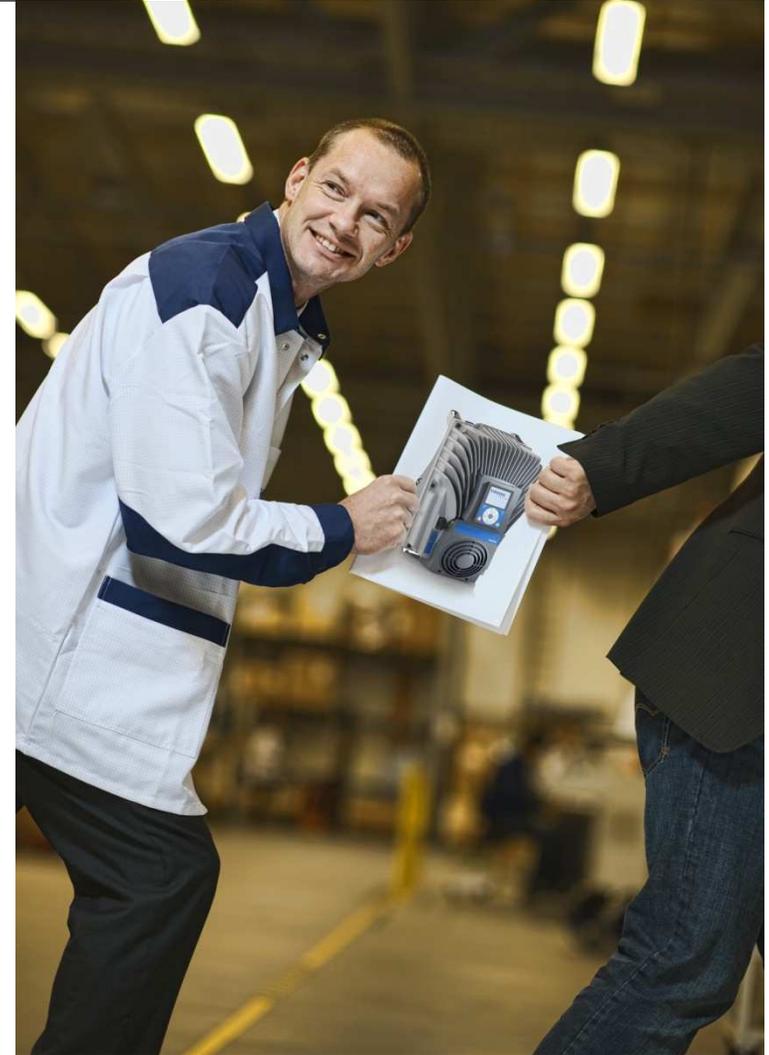
Energy Efficiency

Vacon Oyj

Frequency converters

” Industry consumes 42% of all electricity produced, with the most consumption coming from processes driven by electric engines. Herein lies huge potential for saving energy. By controlling the engines using frequency converters, for example, up to 40% in energy savings can be achieved.. ”

Jukka Kasi,
Vacon Drives Finland,
Vice President, corporate development



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Sustainable development with renewable energy...

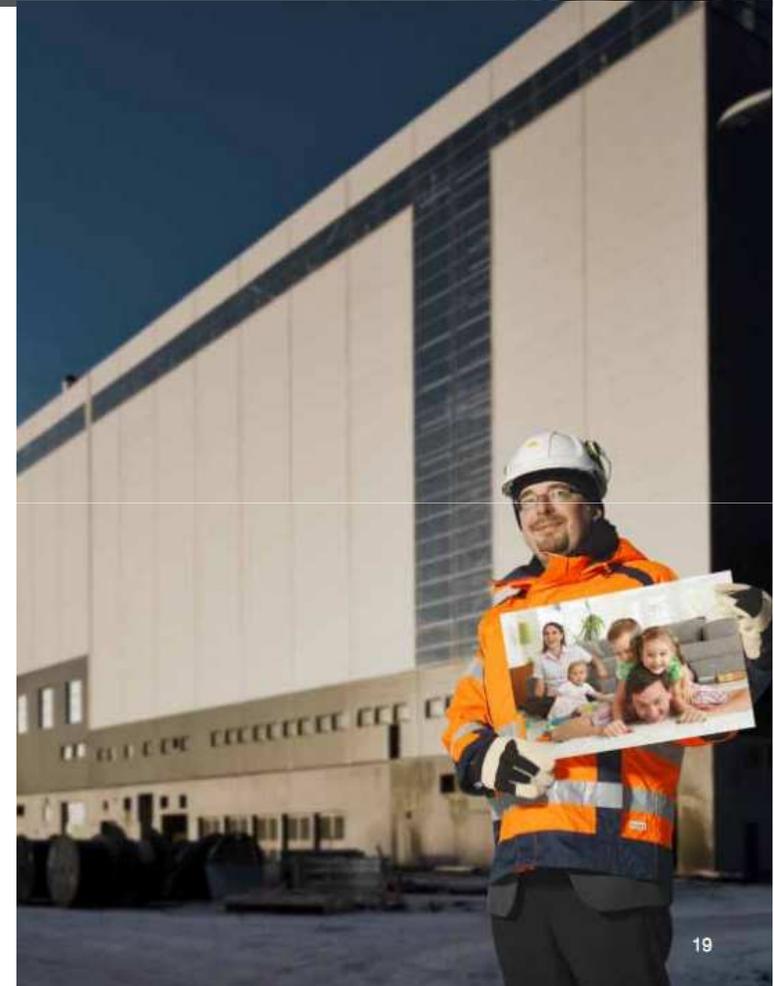
Westenergy Oy Ab

This is a non-profit company owned by five municipalities.

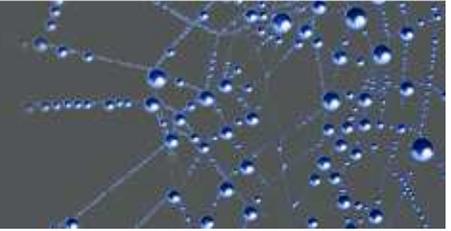
There are more than 400,000 inhabitants in its operating area.

” In order to utilize biodegradable waste, which untreated accelerates climate change, combustion of community waste for energy must be increased. Over 60% of residential waste consists of renewable energy sources, which can be sorted as biofuel. carbon dioxide emissions within the Vaasa region will be reduced by 300,000 tons a year. This is equivalent to the annual carbon dioxide emissions of nearly 100,000 cars..”

Jan Teir, CEO



Co-operation and strong networks



Mapromec Oy

Piston pins, shafts, bearing parts, lifting rolls and valve mechanisms etc. for large diesel engines

- ” Mapromec is the world’s leading manufacturer of large piston pins.
- Quality, price and delivery time! These are the hard essentials for a subcontractor to be successful. Our investment in automation has enabled us to work in close co-operation with our main client. ”

Caj-Erik Karp, CEO

More information

www.energyvaasa.fi

www.energycluster.fi

www.cleantechfinland.fi

www.vasek.fi

www.merinoval.fi

Robert Olander

tel. +358 (0)40 743 4647

e-mail: robert.olander@merinoval.fi