

# Cleantech in Finland



TYÖ- JA ELINKIINOMINISTERIÖ  
ARBETS- OCH NÄRINGSMINISTERIET  
MINISTRY OF EMPLOYMENT AND THE ECONOMY

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# Cleantech from Finland for the sustainable world

A lot has been said.

OECD Ministerial Council Meeting stated the commitment to limit effectively the increase in global temperature below two degrees Celsius above the pre-industrial levels. A number of actions include markets for green goods and services, phasing out inefficient fossil fuel subsidies and to jointly mobilize 100 billion US dollars per year by 2020 from variety of sources, public and private.

The presidents of USA and China, **Barack Obama** and **Xi Jinping** gave a Joint Announcement on Climate Change, in which, first of all, China intends to achieve the peaking of carbon dioxide emissions around 2030. Just half a year after the joint announcement, in June 2015 president Obama published The Clean Power Plan, which sets the standards to reduce carbon dioxide emissions by 32 percent from 2005 levels by 2030 in USA - the earlier target was just 26-28%.

The President of the European Commission **Jean-Claude Juncker** selected his priorities when adopting his position: "We need smarter investments, more focus, less regulation and more flexibility" when using public funds. This should allow us to mobilize up to 300 billion euros in additional public and private investments over the next three years. These should be targeted in infrastructure, educa-

tion, research and innovation, renewable energy and energy efficiency, and especially in projects that can help the younger generation back to work. As a follow-up of this: EFSI, European Fund for Strategic Investments was created. The first loan under this plan to Finland was granted to the large-scale bio-product mill under construction.

It is not only what was said - we can see steps taken. There is the will and there is funding.

The global cleantech markets continue growing. The markets grow fast in China and elsewhere in Asia, but they do grow also in Europe. It is called business.

What about Cleantech in Finland?

Finland is committed to the new strategic government programme named "A land of Solutions" for 2015–2019. The programme expects the achievement of the 2020 climate objectives during the government term. Part of the imported fossil fuel based energy will be replaced by clean and renewable domestic energy. The growth of cleantech enterprises, the increase in the sustainable use of natural resources, pluriactive rural enterprises and an efficient circular economy will contribute to the creation of new jobs, just to name a few pearls from the target bucket.

Finland has invested public funding in clean technology innovation for about a decennium 200–250 million euro each year. When summing up both the public and private funding, it makes over a billion euro per year. As a consequence, Finnish cleantech is recognized in the Global Cleantech Innovation Index (second after Israel) and in EU Eco-innovation Index (second after Sweden). We want to globally share the innovation results to respond from our part to the global challenges.

We are all in the same global boat against the climate change!

There are about 3000 cleantech companies in Finland and this leaflet is to give a glimpse of them. The companies offer products and services in a bunch of different categories:

- Sustainable industry
- Smart and clean living
- Waste to wealth
- Smart mobility
- Energy efficiency
- Renewable energy
- Clean water for all
- Green digitalization
- Smart lights

The responsibility to make the change against the climate change and pollution lies on each of us around the world. There is no one else and we have to join the forces.

Cleantech Strategic Programme

**Kaisu Annala**

Strategic Director, Cleantech

**Sari Tasa**

Project Coordinator



## 3DTech



3DTech Oy is a Finnish High Tech StartUp company in the field of Additive Manufacturing or in the other words 3D Printing. Key areas of expertise include 3D Scanning, 3D Design and 3D Manufacturing targeting to mass customized mass production as well as the more efficient use of locally produced bio- and recyclable materials. 3DTech Oy offers a comprehensive product portfolio in both 3D service and equipment categories for companies, consumers, educational institutions and research centers, as well as public places such as libraries, etc.

Our mission is to be one of the leading 3D services suppliers in Europe and in the top ten globally. Our vision is to allow everyone world-wide an easy access to the world of 3D Manufacturing via user-friendly and interactive cloud services combined with a locally reproducible production process.

<http://3dtech.fi/en/>

## ABB



ABB is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 150,000 people out of which 5,500 in Finland.

<http://www.abb.com/>

## Ahlstrom



Ahlstrom is a high performance fiber-based materials company, partnering with leading businesses around the world to help them stay ahead. We aim to grow with a product offering for clean and healthy environment. Our materials are used in everyday applications such as filters, medical fabrics, life science and diagnostics, wallcoverings and food packaging.

<http://www.ahlstrom.com>

## Aidon



Aidon is specialized in smart metering and smart grid applications. The company supplies open architecture-based new generation energy service devices, data communication and software solutions, and related services. Aidon's new generation smart metering system has rapidly gained a strong market position in the Nordic countries.

With a core objective to build on an open architecture, look for innovative ways to operate, and work in cooperation with suppliers, Aidon is the preferred supplier for many energy companies, as well as a sought-after partner for meter reading service providers, business system suppliers, and system integrators alike. Aidon's future-proof solutions guarantee a gateway to the smart grid now and in the future.

<http://www.aidon.com/>

## AkkuSer



To combat the flood of hazardous battery and accumulator waste caused by the increasing use of wireless devices, AkkuSer has developed Dry Technology. This unique recycling method makes AkkuSer the first company in the EU that recycles batteries and accumulators in an environmentally sustainable manner. The technology enables a highly efficient and safe material recovery.

Currently the biggest battery and accumulator waste markets for AkkuSer are Finland, Sweden and Germany. The company has the capacity to accept waste from other countries as well and to export its methods.

<http://www.akkuser.fi>

## Alfa Laval



Alfa Laval is a leading global supplier of products and solutions for heat transfer, separation and fluid handling through our key products – heat exchangers, separators, pumps and valves. We currently play a vital role in areas that are crucial for society, such as energy optimization, environmental protection and food production.

Alfa Laval's products are used in the manufacturing of food, chemicals, pharmaceuticals, starch, sugar and ethanol. We are also used in nuclear power, onboard vessels; and in the engineering sector, mining industry and refinery sector as well as treating wastewater and creating a comfortable indoor climate.

Alfa Laval's worldwide organization helps customers in nearly 100 countries to optimize their processes. We have 42 major production units and over 18 000 employees.

See more at: <http://www.alfalaval.com>

## Aqsens



Aqsens Ltd develops and sells novel applications for qualitative and quantitative liquid analyses. Its Q technology provides high level of sensitivity and ease of use together with unsurpassed accuracy even in on-site conditions. Aqsens' vision is to become a leading technology company in on-site liquid analyses applications focusing on Cleantech and Life-Science Businesses. The method's potential application space is innumerable. The first available applications are for oil & gas production chemistry monitoring and the company is currently working on a research project for remote health diagnostics.

[www.aqsens.com](http://www.aqsens.com)

## Aquamec

Watermaster by Aquamec Ltd. is an amphibious multipurpose dredger for all shallow water work. Watermaster technology is used in 65 countries worldwide for restoring shallow waterways and shores, preventing floods, removing vegetation caused by eutrophication, cleaning polluted urban canals, construction work in water environment and maintenance of process- and wastewater ponds in mines.

Watermaster's capabilities include: suction dredging, backhoe dredging, raking and pile driving - all from dry ground to 6 meters depth. Watermaster reduces investment, operational and maintenance costs since one machine does the work of many separate machines. Watermaster is a serial product manufactured in Finland.



[www.watermaster.fi](http://www.watermaster.fi)

## Aquazone



Aquazone is specialized in wastewater treatment and optimization of wastewater treatment processes together with its partners.

Our core operating principle is to be focused on customer need. We utilize efficient membrane technology, MBR, to increase WWTPs' capacity while decreasing their footprint. Our expertise also include removal of nitrogen, phosphorus, pathogens and bad odour from waste water. Together with our partner, Suomen Ekolannoite Ltd, we further treat the sludge to be used as fertilizer.

Our services cover planning and site implementation as turn-key solutions. Membrane based technologies are widely used internationally as they produce superior treatment results with affordable cost. We both deliver completely new plants as well as renovate existing units increased capacity and improved treatment result.

[www.aquazone.fi](http://www.aquazone.fi)

## Areva Solar



Areva Solar - an expert in free and environmentally friendly solar energy Areva Solar is a specialist and import dealer of high quality solar panels and solar collectors.

Our services comprise everything you require to produce electricity and heat independently: We can assist you in selecting the most suitable and practical solar energy equipment according to your needs. We can manage permit process for you or with you. We can assist your company or farm to apply for investment support. We will install your equipment reliably and correctly. We will support you in any solar energy related challenges and questions.

<http://www.arevasolar.fi/en>

## Asema Electronics



Asema Electronics Ltd is a specialist in electricity control systems. Our area of expertise is consumer terminals for the so-called "Smart Grid," the next generation energy network that aims for more efficient and intelligent production and use of energy.

[www.asema.com/en](http://www.asema.com/en)

## Aurelia Turbines



Aurelia Turbines manufacturers the most efficient small gas turbines in the world.

Aurelia Turbines have successfully commercialised technology developed in Lappeenranta University of Technology, Finland. The pedigree of this technology has been established over 30 years of Research and Development in high speed technology and fluid dynamics. The company has extensive immaterial rights on the core technology and continue to develop a portfolio of IP protection around the product and its application.

The strategy of the Aurelia team from the outset, has been to have a world class product with high reliability and high efficiency achieved with modular components. To this end Aurelia will retain the core expertise and are employing industrial, world-class partners to ensure component scalability and ease of integration into Aurelia's own technology.

[www.aureliaturbines.com](http://www.aureliaturbines.com)

## AW-Energy

AW-Energy has developed and patented a groundbreaking Wave Energy concept, WaveRoller. The WaveRoller technology harnesses the potential of the surge phenomenon for energy generation and this way taps into the biggest untapped renewable energy resource on the planet.

AW-Energy's key operational milestone is the accomplishment of a 300 kW demonstration plant in Peniche, Portugal (during 2012). AW-Energy also possesses all the necessary permissions to complete the operation, including installation and a 1MW grid connection license.

<http://aw-energy.com/>



## BaseN

BaseN provides new ways to capture, process and visualize enormous amounts of data in real-time – which can help businesses in various industries improve what they do, and how they do it. BaseN, as an international platform provider, has developed its system for telecom networks and has applied the same technology to the cleantech space. With its Software-as-a-Service (SaaS) suite BaseN can immediately make real-time data available to millions of consumers, organizations and households in a cost efficient way.

<https://www.basen.net/>



## Beneq

Beneq is a leading supplier of production and research equipment for thin film coatings, as well as the world's premier manufacturer and developer of thin film electroluminescent (TFEL) displays. Beneq thin film equipment is used for thin film coatings in flexible electronics, solar photovoltaics, and other demanding optical and barrier thin film applications.

Beneq has introduced several revolutionary innovations within its coating technologies, including roll-to-roll atomic layer deposition (ALD) and high-yield atmospheric aerosol coating (nAERO®). Beneq also offers complete coating and development services.

<http://www.beneq.com/>



## BioGTS

BioGTS provides a scalable biorefinery solution that is based on patented biogas and biodiesel technologies and is designed for the treatment of organic biodegradable waste from municipalities, industries and agriculture. BioGTS has developed groundbreaking technologies that enable treating materials that are difficult to treat in traditional biogas processes. BioGTS® biodiesel and biogas plants are cost-efficient investments for converting the waste into renewable energy, vehicle bio-fuels, fertilizers and chemicals.

BioGTS's new biogas plant concept, Bioboksi, brings biogas reactors, biomethane upgrading and refueling unit into one location and it can be placed directly in connection with transport infrastructure. Bioboksi will revolutionize the idea of local fuel.

<http://www.biogts.com/>



## BMH Technology

The TYRANNOSAURUS® Waste Process by BMH Technology means the smartest Waste-to-Fuel plant. The Tyrannosaurus-produced Solid Recovered Fuel (SRF) is cheap, clean, standardized fuel, consisting mainly of plastic film, cardboard and textiles. The high calorific value and low fossil CO<sub>2</sub> emissions make it ideal to replace fossil fuels in power boilers and energy-intensive industries like the cement industry. With over 60 years of experience in the field, we are the leading supplier of turnkey SRF and biomass handling plants for energy generation. From BMH Technology you can have it all; from raw waste & untreated biomass to ready fuel in flames.

<http://www.bmh.fi/>

## Caverion

Caverion designs, builds, operates and maintains intelligent and energy-efficient solutions for buildings, industries and infrastructures in Northern, Central and Eastern Europe.

Our clients represent all sectors, including the public sector, industry, real estate owners and developers, real estate users, and general contractors. Our services are used in offices, retail properties, housing, public premises, industrial plants, infrastructure, and other facilities.

[www.caverion.com](http://www.caverion.com)

## Chempolis



To combat climate change and reduce dependence on oil, governments and organizations around the world have set ambitious mandates and goals for the production and use of fuel ethanol and biochemicals. Chempolis' formico® biorefining technologies makes it possible to achieve these goals in a sustainable way. Chempolis' target countries for the first coming years are India and Thailand, followed by Brazil, China and Indonesia.

Chempolis' main product is the patented formicobio™ biorefining technology that enables profitable and sustainable production of advanced biofuels (especially ethanol) with co-production of chemicals from non-food biomasses (e.g. straws, sugarcane bagasse, corn stover, bamboo etc). The technology is effluent-free and self-sufficient in terms of energy.

<http://www.chempolis.com>

## Citrus Solutions



Citrus Solutions is an ICT Services company. We believe that by focusing in Cleantech we can create competitive advantage to our clients locally and globally. We enable our clients the means and tools to configure their products and mass produce them in environmentally sustainable matter. We empower manufacturing industries with the latest ICT solutions.

Our knowledge and skill sets are focused on developing Configurator solutions, database management (consulting, training, education and maintenance) and ICT consulting (Microsoft Partner). Citrus is selected one of the key contributor in the state and communal procurement management offices.

<http://www.citrus.fi/>

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[www.caverion.com](http://www.caverion.com)

## Clewer



Clewer is a leading developer of patented waste water cleaning technology. We have developed a new kind of bioprocess where wastewater is treated, sludge and chemical residue is collected, and the treated water is removed from the system. Clewer's biological treatment process is based on new and patented carrier technology (RBBR) where micro-organism growth operate on the surface of the carrier. The bioreactor's operating principle is utilising centrifugal forces in growing biofilm. The blending of Clewer special bacteria and nutrient technology for bacteria forms a highly efficient wastewater treatment system to be utilized in industry, residential communities, car washes, cruise liners, fish farming closed circuit systems, hotels and campsites. We provide both pre-determined and custom built solutions for our customers.

<http://www.clewer.com/en/>

## Convion



Convion Ltd. is a leading fuel cell system integrator committed to commercializing solid oxide fuel cell systems in range of 50–300kW for distributed power generation. Our products are designed for premium energy efficiency, reliability and operational flexibility. Convion will provide to its customers sustainable power generation products with premium efficiency and power security for distributed power generation markets.

<http://www.convion.fi/>

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<http://www.citrus.fi/>

## CoReorient



CoReorient revolutionizes the energy efficiency and lowers the carbon emissions of consumer transport. The Helsinki based startup develops crowdsourced delivery service PiggyBaggy and Local community spaces.

PiggyBaggy is a ride-sharing based service where people transport each other's packages along their daily commute or shopping trips. The service matches consumer transport demands with other consumers going in the same direction. PiggyBaggy partners with e-commerce and delivery companies for ecological, economical and socially sustainable solution.

The Local community space catalyzes services such as; local deliveries, food and recycling circles, local rentals, and library service. It combines a 24/7 accessible smart container in real time with an online service mediation platform based on the PiggyBaggy service.

[www.coreorient.com](http://www.coreorient.com) [www.piggybaggy.com](http://www.piggybaggy.com)

## Cross Wrap



Cross Wrap Ltd is the world leader in automatic wrapping machines and bale openers for the waste industry, including RDF, SRF, MSW and recyclables. We also operate globally packing wood products and other industrial products.

Our unmatched experience serving the needs of customers across the globe, combined with our leading edge patented technologies, means we can deliver a wrapping solutions that's right for our customers unique challenges.

[www.crosswrap.com](http://www.crosswrap.com)

## EasyLED



EasyLED Oy is a Finnish company that has been specializing in designing and manufacturing led lighting solutions since 2006. EasyLED Oy provides sustainable solutions for street, road and area lighting as well as for industry, sports, retail and office space lighting purposes. All our products are designed and manufactured in Salo, Finland.

Investing in high-quality led lighting will give value for now and far in the future. By choosing EasyLED lighting solutions you will benefit from considerable cuts in the energy bills without compromising quality, performance and efficiency.

[www.easyled.fi](http://www.easyled.fi)

## Ecolution



The global urban population growth increases the pressure for environmental friendly and efficient biowaste management. Bio-fuels often rely on subsidies, considerable investments and larger unit sizes to achieve economics of scale. This leads to a centralized biowaste processing and long haul transportation, which creates traffic, noise and micro particle emissions.

Ecolution Smart Bioreactor local solution: Bioreactor is a next generation, small size, aerobic bioreactor that decreases 80 % of biowaste volume in two weeks. The Ecolution bioreactor extracts water from biowaste and uses a free and efficient transportation channel - the drain. A successful micro-pilot has been finalized, that validates the key microbiological processes and is proven to be successful in producing premium quality nutritious soil.

[www.ecolution.fi](http://www.ecolution.fi)

## Ecomation



Ecomation Oy solves the environmental problems of their clients by creating treatment solutions for waste plastic, rubber and bio waste and for electrical and electronic waste recycling. That includes waste to energy (fuel) solutions and processes for recovery of valuable raw materials like metals.

ECOMATION's pyrolysis solution for recycling of plastics, used tyres and bio waste works 24/7 producing fuel oil, carbon, gas and from tyre scrap also steel. All products are re-saleable. The energy efficiency of ECOMATION process is even multiple times better than with competitive solutions and it's totally emission free which makes it revolutionary.

ECOMATION has also a treatment system for WEEE, where the economy and metal recovering efficiency of total process is the best in markets giving the best ROI rates for the customers. With ECOMATION there is no waste to waste.

<http://www.ecomation.com/>

## Effmag



Effmag develops and markets world's most energy efficient billet heaters for aluminum extrusion lines. The heaters are used to preheat aluminum billets before the billets enter into the extrusion press. Effmag offers aluminum-extruding companies a cleantech solution that greatly improves both energy efficiency and productivity of the extrusion process. Effmag reduces the cost of heating aluminum billets up to 50% compared with conventional heating methods and increases production throughput up to 25% across a variety of profiles.

<http://www.effmag.com/>

## EHP-Tekniikka



EHP-Tekniikka Ltd. deals with online environmental and process monitoring offering both monitoring solutions and services. We design and produce automatic, wireless, light and all year-round monitoring solutions and stations powered by accumulators and solar panels.

EHP-Tekniikka Ltd. offers automatic wireless monitoring of water level, flow and quality; meteorological monitoring; soil monitoring as well as alarms in case the measurements exceed the threshold limits. We offer customers quality controlled monitoring data as service without investments on hardware, map-based data analysis tools and automated environmental reporting.

[www.ehp-teknika.fi](http://www.ehp-teknika.fi)

## Elozo



Elozo Oy specializes in developing ozone based cleaning systems that improve hygiene and working conditions without wastewater or chemical emissions.

Elozo's patented chemical free and waterless cleaning mechanism enables low cost anti-odour treatments and disinfection for garments, personal gear and other items that are difficult, time consuming or too fragile to be cleaned conventionally. Elozo Ozone Cleaning Systems can be applied in a variety of sectors from theatres and operas to fire & rescue services, law enforcement, healthcare and beyond.

<http://www.elozo.fi/>

## Eltete TPM

Eltete TPM is a global carton board refiner and one of the leading providers of sustainable transport packaging materials in the world. Our products and technology solutions are key to reducing the carbon footprint of materials and energy consumption and to increase recycling.

Our business is driven by the needs of our customers and is based on environmentally-friendly products such as edgeboards, carton pallets and other solutions which are an excellent substitute for high energy content materials used in packaging. Light, strong and 100% recyclable products made out of raw material from renewable sources allow us to use less material and transportation, which ultimately has a positive impact on CO<sub>2</sub> emissions.

[www.eltete.com](http://www.eltete.com)



## Eneron



Eneron is a cloud service supplier and technology company. We help property owners and users reduce their maintenance costs and energy consumption in a profitable manner. In addition, we match energy efficiency needs with appropriate solution providers in a smart and effective manner. For this purpose, Eneron develops and offers smart cloud services: Eneron Online and Cleantech Databank.

Eneron Online is a smart web application for energy-efficient real estate maintenance and management. It automates traditional energy efficiency and specialist tasks, streamlines maintenance processes and offers an automated and real-time solution for building monitoring. Cleantech Databank offers users an easy way to find solutions, products and services for reducing energy consumption or producing renewable energy, as well as enables direct contacts with suppliers of these solutions.

[www.eneroncloud.com](http://www.eneroncloud.com)

## Enersize



Enersize Ltd. is a technology company specialized in Compressed Air System (CAS) energy saving solutions for industry, equipment and systems – a business environment, where Enersize's know-how in complete processes and energy efficiency improvement potential originated.

The company has developed an industrial energy saving concept, which includes measuring, real time monitoring, reporting software. Concept includes also all needed investments including complete installation, CAS optimisation and customer personnel training which carried out customer energy saving. With this solution and expertise industrial producers can reduce their energy use up to 30 %. Enersize's customers are primarily in China and Europe. Main branches are automotive, steel, pulp and paper, electronics and energy industries.

[www.enersize.com](http://www.enersize.com)

## Enevo



Enevo is the leading provider of smart sensors and logistics optimization solutions for the waste management and recycling industry. We help both commercial waste management companies and public organizations to operate more resource efficiently.

Our innovative Smart City solution Enevo ONE optimizes waste collection. It utilizes wireless sensors to measure the fill-level of waste containers and forecasts when the containers will be full. It then automatically optimizes the collection plans and routes, saving up to 50% in total operation costs.

[www.enevo.com](http://www.enevo.com)

## Eniram



Eniram provides the maritime industry with energy management technology to decrease fuel consumption, increase profitability and reduce harmful emissions. Eniram's solutions range from single onboard applications to comprehensive fleet analysis and are used by shipping companies on over 250 ships ranging from LNGs, tankers, cruise liners, container ships, bulkers and ferries.

Our portfolio is based on the Eniram Platform – a real-time data collection platform that measures vessel performance and fuel consumption. Our Platform collects over a billion measurements every day – that's over 10,000 measurements per second. The database of operational vessel sensor data already includes over 100,000 sea days of high accuracy real-time data giving the shipping industry a foundation to optimize the performance of their vessels.

<http://www.eniram.fi/>

## Enoro



Enoro is a leading energy IT system and service provider in Europe. The company is focused on developing and supplying business critical IT systems to energy markets. The product portfolio includes multi-utility energy information system solutions from smart meter, smart grid and energy data management to customer service and billing systems.

The company's solutions for the smart energy ecosystem help all energy sector players run profitable energy businesses and execute target-oriented strategies for energy efficiency and sustainability.

<http://www.enoro.com/>

## Ensto



Ensto is specializing in the development, manufacture and marketing of electrical systems and supplies for the distribution of electrical power and electrical applications. Ensto is one of the leading technology companies in the world and the company's goal is to be the world leader in green energy efficiency and distribution. The products, manufactured in seven different countries, are environmentally friendly, energy efficient and leave a minimum carbon footprint.

Ensto is known for its advanced, energy-efficient and reliable electrical solutions. Ensto offers solutions for electricity utilities, industries and integrated building technology with high focus on sustainability.

[www.ensto.com](http://www.ensto.com)

## Extor



Extor is a leading producer of filtration systems for the removal of difficult dust. With a philosophy of continuous development through innovation and research, Extor's mission is to create value to customers through a clean working environment. The company has successfully delivered over 8,000 units to over 2,500 satisfied customers worldwide.

<http://www.extor.fi/>

## Ferroplan



Ferroplan Oy is a full-service waste, water and wastewater consulting, design, and engineering and construction company. We provide turnkey treatment facilities from consulting through permitting, construction, training of operators and operational support.

We provide Cleantech solutions in which the energy consumption, life cycle of the materials and all-in-all environmental impacts of the totality are taken into account. Ferro Care offers spare parts and maintenance services reliably and without delay, as well as maintenance contracts tailored according to customer needs.

[www.ferroplan.fi](http://www.ferroplan.fi)

## Fidelix



Fidelix Ltd is rapidly growing Finnish building automation and security system manufacturer. There are more than 10 000 buildings that are operated by Fidelix building management systems. These buildings are mixture offices, business parks, hospitals, industrial buildings, hotels, residential towers and villas. Sizes of projects range from small to the ones that have more than 20 000 data points connected to Fidelix building automation system.

Fidelix has 70+ partners in more than 20 countries. Our advanced system solutions and service concepts are based on open connectivity and standardised techniques. Our system guarantees stability, continuity and will help you generate energy savings without interfering with the residents or compromising their personal comfort.

[www.fidelix.fi](http://www.fidelix.fi)

## Fincumet



Fincumet Ltd is a family company that specializes in the recycling of cables, non-ferrous metals and ferrous metals. The company has the biggest granulating line in Finland, in which problematic scrap cables can also be processed. Fincumet also sells cables and non-ferrous/ferrous metals to be processed in scrap metal markets around the world. A growing operations sector for the company is the import of different alloy ingots. A global contact network enables Fincumet to deliver even rare alloys according to clients' specifications.

<http://fincumet.fi/eng>

## Forchem



Operating the most modern tall oil fractionation facilities in the world, Forchem produces industry-leading tall oil products. Tall oil products are used, for example, in paints and coatings, coating additives, surfactants, metalworking, oilfield chemicals, oil and fuel additives, pulp and paper chemicals, printing inks, adhesives and biofuels.

Tall oil is an environmentally-friendly product as it uses pine tree as raw material and is obtained as a residue of the chemical pulp industry. Forchem can guarantee that it produces tall oil products in the manner that best protects nature and makes waste recycling and low energy consumption the number one priority.

<http://www.forchem.com/>



## Fortum



Fortum's aim is to create sustainable energy and solutions that improve life for present and future generations.

Fortum Fiksu solution optimises heating for the customers by calculating the number of needed heating hours and switching heating on automatically. The control system retrieves hourly weather forecasts and electricity prices and the most economical hours are automatically selected to heat the water in the boiler. Once the equipment is installed, electricity consumption can be monitored with a computer or smartphone.

[www.fortum.com](http://www.fortum.com)

## Forum Virium Helsinki



As an inexhaustible and emissions-free energy form, wave power can play an important role in the future, and that is why it is also a key focus area in Fortum's research and development work. Fortum is involved in several wave energy projects that aspire to build demonstration plants.

Forum Virium Helsinki is an innovation unit within the Helsinki City Group. It develops new digital services and urban innovations in cooperation with companies, the City of Helsinki, other public sector organizations, and Helsinki residents. The aim is to create better services and new business, plus to open up contacts for international markets.

Forum Virium Helsinki's core activity is to manage development projects. They are experimental in nature: the idea is to test things together and learn along the way. This leads into new ways of working and innovating. The innovation projects focus on the following themes: Smart City, New Forms of Media, Growth Company Services and Innovation Communities.

<https://www.forumvirium.fi/en>

## Fourdeg



Fourdeg system rationalizes the use of heating energy and improves the indoor temperature control in all buildings with water radiators.

Fourdeg server software learns the heating response of each room, including changes in a room and correlation of parallel rooms. The system adapts the heating based on the local weather forecast. The Fourdeg system works fully automatically and provides reports of the actual indoor temperature and heating system condition. District heating network price signals can be applied to the Fourdeg system to optimize the heating costs. The system can also balance the peak load inside single building or a group of buildings.

<http://www.fourdeg.fi/>

## Gaia Group

Gaia Group's expertise ranges from risk and safety management to due diligence, foresight studies to corporate responsibility, and the service portfolio includes a wide array of services from extensive research to pragmatic consultancy services on strategic and operational levels.

In the environment field, Gaia provides solutions for environmental management and reporting, helps clients to integrate environment solutions into their core strategy, and offers world-class services on health, safety and chemical risk management. With the core energy competence areas of renewables, distributed energy solutions, and energy efficiency consultancy, the company's energy expertise ranges from strategic planning to project implementation and from feasibility studies and risk assessment to the development of new business concepts. In the field of climate change, the services include solutions from corporate climate change strategies to cost-effective and practical Carbon Management Plans that reduce clients' greenhouse gas emissions. Gaia also helps finance institutions and development agencies to integrate climate change into development cooperation.

<http://www.gaia.fi/>

## Gasum

Gasum is a Finnish expert in natural energy gases. The company imports natural gas to Finland and upgrades natural energy gas. The company transmits and supplies them for energy production, industry, homes and land and maritime transport. Gasum develops the Finnish and Nordic energy infrastructure by investing in the LNG market, biogas business and transport services. The company is the leading supplier of biogas in Finland. Gasum has more than 300 employees. The company's revenue for 2014 totaled €1.1 billion. 'Cleanly with natural energy gases'.

<http://www.gasum.com/>

## Genano

Genano Ltd delivers professional air decontamination units for hospitals and laboratories. Genano® air decontamination units collect particles down to nanosize. They eliminate microbes (viruses, bacteria, moulds and yeast) instead of just collecting them and remove gases from the air.

Genano is an ideal solution for spaces where decontaminated air is key and contamination risk from the unit itself needs to be avoided. Genano air decontamination units are used to build for example positive and negative pressure isolation rooms and laboratory cleanrooms.

[www.genano.com](http://www.genano.com)



## Grnlund

New technologies, comprehensive thinking and implementation of new EU directives and other requirements make the development of the energy efficiency more demanding and require multi-disciplinary competence.

Property developers, owners and users have woken up to this change. They look for diverse ideas from their partners about how to solve energy-related issues. Grnlund group provides energy consultation services with over 50 years' experience. We have the most comprehensive selection of building energy consultation services in Finland.

We support and guide our customers and property users in regards to environmental matters. We offer service, not just calculation. Our services include a variety of environmental classifications, carbon footprint reviews, versatile energy reviews and the development of new concepts.

[www.grnlund.fi](http://www.grnlund.fi)



## Greenled

Greenled Ltd. is a Finnish provider of comprehensive lighting solutions for companies and public sectors. We are the leading led luminaire manufacturer in Finland. The latest products in the broad product range are the led street lights. Through our extensive nationwide partner network we are able to carry out integrated projects in a cost-effective way. Greenled manufactures most of its products in Finland.

<http://www.greenled.fi/en>



## Greenlux Finland

Greenlux Finland is LED lightning technology company and Scandinavia's leading manufacturer of LED luminaries for parking garages. As a pioneer in garage, storage and public space general LED lighting with solid Scandinavian references Greenlux has sold and delivered more than 20 000 GLG luminaires.

Greenlux Finland designs and produces its own lighting products in Finland. Each of Greenlux's three product ranges contains various different models, making it possible to choose the best suiting option for different uses.

<http://www.greenlux.com/en/index.html>



## GreenSound

In the context of waste, water and bioenergy, GreenSound covers project development tasks from concept ideas and related studies into full investment and business plans with process engineering and financial analysis. GreenSound can also perform due diligences and other similar tasks for already existing or developed projects.

As a specialty area GreenSound can offer business upgrade development for existing waste refining, water treatment or bioenergy production operations with the target of increasing the profitability level.

<http://www.greensound.fi>

## GreenStream

GreenStream Network Ltd is a leading Nordic company focused on delivering energy efficiency projects in China and providing carbon asset management and comprehensive services in the climate and renewable energy markets. GreenStream has already a strong presence in China with its broad CDM/CCER portfolio of over 90 emission reduction projects, and the Company is now focusing on Energy Service Management Company business model.

GreenStream has extensive expertise in designing, assessing, managing and financing low-carbon activities worldwide. GreenStream provides a variety of advisory services for financial institutions, energy companies, companies operating in energy intensive sectors and governments.

<http://www.greenstream.net/>

## Grexel



How can we optimize the effectiveness of support schemes and empower consumers to be the driving factor behind green economy? Governments can save billions by getting this right! Grexel have pronounced market knowledge in energy certification and offer hands-on assistance with market design and regulatory development for renewable energy tracking and support schemes.

Grexel develops and maintains flexible and dependable software solutions for tracking the ownership of environmental value. For more than a decade, Grexel has been a leading contributor in developing certificate-based solutions for the support of environmentally friendly electricity production and in offering advisory services for government bodies mandated to establish markets for environmental commodities or rights. As a true pioneer in the field and prominent registry software provider, Grexel is the European market leader in terms of issued and traded certificates and registered production devices within the European Energy Certificate System EECS®.

<http://www.grexel.com/>

## Helen



Our unique combined production of electricity, district heat and district cooling has been awarded as the most efficient city energy solution in the world. Our aim is to produce energy totally without carbon dioxide emissions.

[www.helen.fi/en](http://www.helen.fi/en)

## Hydrocell



Hydrocell is a leading developer and manufacturer of high efficiency heat exchangers and heat recovery units. Product range includes also regenerative carbon dioxide scrubbers and quick charge / discharge metal hydride storages.

Hydrocell's brush type heat exchangers are very efficient and widely used to improve energy efficiency of buildings. Brush type heat exchanges are also suitable for industrial use and due to the anti-freeze design they can be used in demanding freezing conditions.

<http://www.hydrocell.fi/en/>

## IGL-Technologies

[IGL - TECHNOLOGIES](#)

IGL-Technologies is an expert in wireless control systems and solutions. The IGL expertise is mainly in technology related to parking management. IGL's products (eTolppa and eParking) for remote control of electric vehicle charging stations and management and renting for parking spaces use wireless radio and mesh technologies that make expensive wiring work unnecessary. eTolppa and eParking are both Smart City solutions, where you can rent a parking space and turn an existing eTolppa heating pole into an electric vehicle charging station just by using your mobile phone.

[eTolppa \(www.etolppa.fi\)](http://www.etolppa.fi); [eParking \(www.eparking.fi\)](http://www.eparking.fi)

## iLOQ

iLOQ Ltd. is a Finnish company that transforms mechanical locking into digital access management. iLOQ provides self-powered digital locking and access management that revolutionizes the locking industry, as digital cameras have transformed photography. iLOQ replaces mechanical and electromechanical locking systems by solving the problems of keys being copied or lost as well as locking maintenance and lifecycle-costs, with an environmentally friendly battery and cable free solution. iLOQ sets new standards in the locking security.

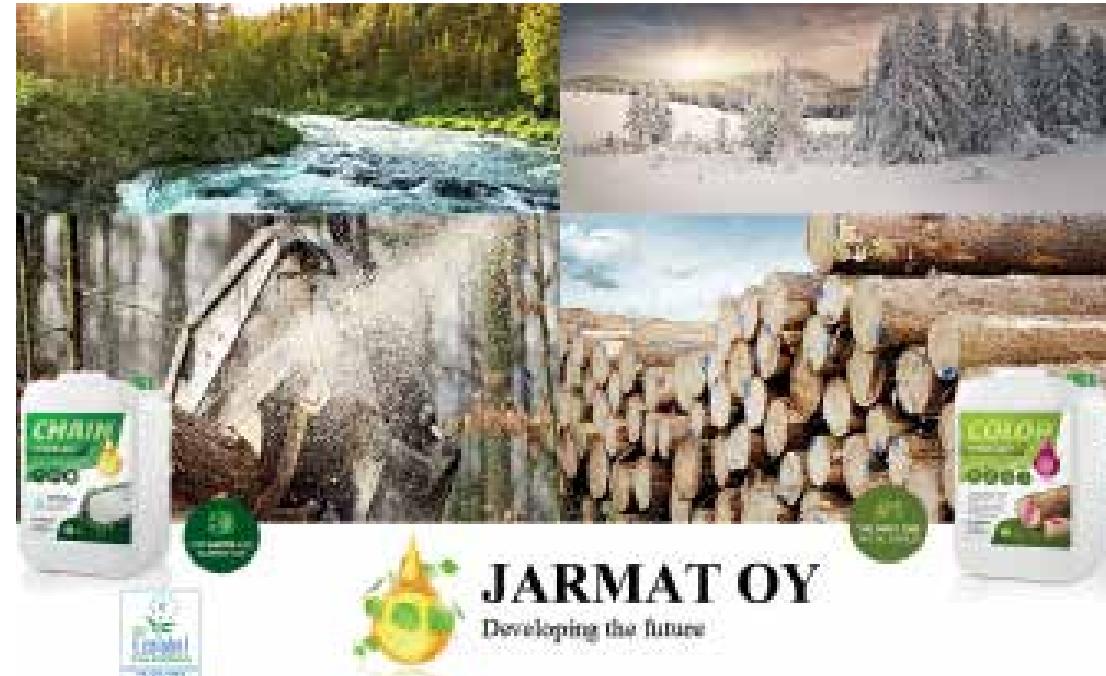


<http://www.iloz.com/>

## Jarmat

Jarmat Oy product selection is based on environmentally friendly Cobiolube® platform, which we have designed ourselves. Utilizing only natural raw materials, Cobiolube® provides a solid foundation for liquids that can be used for a wide variety of purposes – from lubricants all the way to heat-transfer agents that are used in power plants. The end result is always a first-class solution that can meet even the most individual needs of a very specific purpose. Cobiolube® Chain has been awarded with European Union's Ecolabel emblem.

[www.jarmat.com](http://www.jarmat.com)



## Kemira



Kemira is a global EUR 2.1 billion chemicals company serving customers in water-intensive industries. The company provides expertise, application know-how and chemicals that improve its customers' water, energy and raw material efficiency in pulp & paper, oil & gas, mining and water treatment.

[www.kemira.com](http://www.kemira.com)

## Kuusakoski



Kuusakoski provide you with recycled raw materials when you need them.

When you purchase your materials from us, you get what you ordered exactly when you need it. Thanks to minimised storage times and optimised logistics, our services are very cost-effective. At the heart of our sales effort are long-term customer relationships and we pride ourselves in taking good care of them. Personal service is a matter close to our hearts.

Our employees in different countries have excellent knowledge of the local business customs and local circumstances.

<https://www.kuusakoski.com/en/global>

## Lamor



Lamor (Larsen Marine Oil Recovery) Corporation offers solutions for optimal oil spill response (OSR) and recovery. With offices, staff and equipment strategically located around the world, Lamor is able to deploy on scene rapidly and effectively to best serve the environmental needs of governments, corporations and the general public, minimizing environmental footprints and salvaging eco-systems.

The company develops, manufactures, and supplies best available technology OSR equipment, training and services. Included in its portfolio of solutions, Lamor offers contingency planning, risk assessments coupled with equipment maintenance.

<http://www.lamor.com/>

## Leanpark



Leanpark Ltd develops and manufactures robotic parking systems that provide solutions for e.g. parking in ever-densing city centres and transport hubs. The cars are stored in shelf structures that enable up to three times more effective use of space, leaving more opportunities for city planning and space for people. The system is energy- and cost-efficient for the owner due to its smart energy-harvesting transfer system and decreased ventilation-, lighting and other maintenance needs. The spacious and light parking rooms and clear guidance make the system comfortable and easy to use.

[www.leanpark.com](http://www.leanpark.com)

## LEDISOL



LEDISOL Oy provides energy efficient lighting solutions for demanding, Nordic environment. LEDISOL focus on developing high quality, long lifetime LED lighting which minimizes users' lifecycle costs.

LEDISOL's solutions range from lighting for traffic tunnels and residential streets to lighting for industrial environment, office exteriors and carparks.

LEDISOL products enables to utilize intelligent lighting control systems and sensors which allow to minimize energy consumption and on the same time provides high quality illumination when needed. All LEDISOL products are designed and manufactured in Finland.

<http://www.ledisol.fi/>

## Liqum



Liqum leads diverse and groundbreaking water research and -exploration globally. Liqum technology is being used in the water treatment, beverage, environment, pharmaceutical, aquafarming, bioenergy, pulp & paper, metal, mining & minerals.

Liqum Early Warning service monitors liquids in industrial processes and natural environments and detects quality-changes caused by contamination, disturbances or incorrect chemical dosing. Deviations in quality level are reported immediately, giving the operator time for preventive action. Liqum's monitoring and reporting service is easy to use and its installation is quick, clean and non-disruptive.

[www.liqum.com](http://www.liqum.com)

## LumiTar ALT Finland



LumiTar ALT Finland Oy utilizes an innovative Array LES-technology to produce light. It could be described as the next evolutionary step from LED-solutions. We have focused on products that will last for a long time with no need for maintenance. Our fixtures utilize a very effective dual cooling system that is small in size and does not heat the environment. Therefore, our products are ideal for cold environments as well as places with high temperatures. With an incredible lifespan of 200 000 hours we offer you a solution that is built to last.

<http://www.lumitar.fi/EN/>

## MariMatic



Magsort provides solutions for separating weakly magnetic minerals from waste tailings. Magsort applications range from upgrading hematite tailings, purifying mineral sands concentrate as well as purifying bottom ash from waste incineration plants. Magsort technology is based on novel patent pending permanent magnet technology. Magsort has successfully tested various samples and is expecting to complete its first pilot production plants during 2016.

MariMatic has over 30 years' experience in pipe waste collection systems: the company has supplied over 800 Taifun®- and MetroTaifun® systems in more than 40 countries. Continuous research and development has led to an extensive portfolio of patents and patent applications in Finland and abroad.

MariMatic has become a pioneer in its sector, being today a global front-runner, setting benchmarks for the industry. Following large-scale projects, MariMatic's turnover is expected to increase rapidly also in the near future.

<http://www.marmatic.com/>

## Masinotek



Masinotek is developing and supplying software based technologies, systems and services for industry, energy, water supply plants and for environmental research. We integrate our software solutions to the customers' existing IT systems and also to the field sensors supplied by Masinotek Oy or customer's existing sensor systems.

Our products include systems for maintenance management (VEHU; CMMS), environmental monitoring (EMMI) and remote control. We also provide sensors and loggers as well as a map viewer module. On top of our products we provide services ranging from software development and system integration, installation, commissioning and maintenance on the field.

[www.masinotek.com](http://www.masinotek.com)

## SeaHow

SeaHow provides high quality expert services and intelligent solutions that support the sustainable use of sea and inland water areas. Reduced total lifetime costs and increased lifespan of marine infrastructures are key customer benefits. SeaHow core customer groups involve public authorities responsible for maritime environmental management, sea-faring, search and rescue - and companies operating in construction, maritime logistics and energy.

The new SeaHow skimmer systems provide unique efficiencies especially for near shore and coastal oil spill response. With their patented brush and scraper design they are among the first skimmer systems that can truly collect even a thin layer of light or heavy oil from water surface efficiently.

SeaHow offers a wide range of hydrographic and coastal infrastructure engineering services. Our tailor-made survey with analyzes and insight combined with accurate maintenance planning provides a cost effective way of managing operation risks. SeaHow has special expertise in shallow waters and operates in offshore, inshore and inland water areas.

SeaHow is one of world's largest manufacturers of polyethylene navigation buoys. Our buoys are originally designed for harsh Nordic conditions to sustain arctic winters with permanent ice coverage and heavy storms.

We are proud to promote the sustainable use of water areas.

<http://www.seahow.fi/>



## Merus Power



Merus Power offers world-leading clean technology to improve power quality, energy efficiency and environmental performance. Our dynamic compensation solutions – active filters, statcoms and SVC's – solve your power quality problems in no time. You will enjoy a swift payback on your investment: our solutions save energy, increase productivity and capacity and reduce energy costs. We provide our clients with world-class products, reliable Finnish technology, agile and flexible service, tailored solutions and true co-operation.

<http://www.meruspower.com/>

## Mervento



Mervento is the leading global provider of multi-megawatt direct drive wind turbine technologies and power plant solutions. We develop the most advanced wind turbines, technologies and corresponding industrial production concepts that can be easily applied locally in the clean tech strategies of different countries.

<http://www.mervento.com>

## Methator



Methator Ltd develops and manufactures farm sized manure handling systems. The innovative and patented system produces biogas and biofertilizer from manure quickly and cost-efficiently. With Methator's system 100 % of the manure produced in a farm can be utilized while improving the overall management of the farm's nutrients.

[www.methator.com](http://www.methator.com)

## Metso



Metso is the world's leading industrial company in the mining and aggregates industries and in the flow control business. We help our customers improve operational efficiency, reduce risks and increase profits by utilizing our unique knowledge, experienced people and our innovative solutions to build new ways of growing together.

Our products range from mining and construction equipment and systems to industrial valves and controls. We have an uncompromising attitude towards safety. Our solutions are delivered and supported by decades of process knowledge and a broad scope of services backed by a global footprint of over 90 service centers, thousands of service employees, and an extensive logistics network. Expect results.

[www.metso.com](http://www.metso.com)

## Molok



Molok Oy Since its more than 24 years of operations, Molok Oy has expanded from a small family enterprise into an international company, known all over the world. We have distributors in more than 40 countries and there are 140.000 installed original Molok® Deep Collection® containers in the world.

Compared to the traditional horizontal waste collection systems, Molok® container's vertical design means that only 40 % of the container is visible; the remaining 60 % is installed to a depth of 1.5 meters. Our container solution offers even 4 to 5 times greater capacity to same area as with surface bins. Longer emptying intervals mean fewer waste collections and less waste collection expenses. Also the density of light density waste is up to double compared to surface bins due to gravity.

[www.molok.com](http://www.molok.com)

## Moventas



Moventas is a renewable energy technology expert, lowering the cost of energy across the lifecycle of power generation - from superior wind gearbox design and manufacture to extensive after sales service for most wind gearbox brands.

<http://www.moventas.com/>

## NaturVention™



NaturVention™ combines nature and technology into healthier indoor air. NaturVention is the global leader in biological air purification. Patented technology utilizes biotransformation to clean air from harmful chemicals and microbes - think of wastewater treatment facilities but on indoor air.

Naava is known to be the indicator of pure Finnish air. Naava series products offers smart IoT-equipped greenwalls which purify indoor air 129 times more efficiently than normal greenwalls. Naava greenwalls optimise indoor air quality and humidity, resulting in healthiest living and working environments. Naava guarantees healthy indoor air.

[www.naturvention.com/en/](http://www.naturvention.com/en/)



## Nocart



Nocart is an environmentally conscious energy company, which uses multiple sources to produce high quality green electricity for all needs: own use, sale and backup power for small power plants. Nocart serves the global demand on three levels: Power Management Unit, System and Power. Our product portfolio includes power electronics for renewable energy production, complete renewable power plant projects and assets to make electricity trade. Nocart is the new standard of energy self-sufficiency.

<http://www.nocart.com/>

## Norsepower

Norsepower Rotor Sail Solution helps cargo vessels significantly reduce fuel consumption. It uses new technology, advanced materials and a high-tech control system to maximize cargo ship fuel efficiency. When the wind conditions are favourable, Norsepower Rotor Sails allow the main engines to be throttled back, saving fuel and reducing emissions while providing the power needed to maintain speed and voyage time. Rotor sails can be used with new vessels or they can be retrofitted to existing ships.

<http://www.norsepower.com/>



## Nuuka Solutions

Nuuka Solutions is a software company, which has developed Nuuka BEMS, a Building Energy Management System to help optimize energy efficiency, monitoring indoor air condition and develop sustainability.

Nuuka Solutions operates through its fast growing partner network. The local partners as energy experts have been able to produce significant improvements in energy efficiency (up to 35% annually) as well as air quality by using Nuuka BEMS' analysis and reporting tools.

Over 70% of the decision-makers around the world think energy control is important to the buildings they represent because energy related costs comprise 40%-60% of all usage costs during the building life cycle. Thus reducing the energy consumption will have substantial monetary effects for their owners.

[www.nuukasolutions.com](http://www.nuukasolutions.com)



## Obelux

Obelux Oy is a Finnish based company focusing on LED technology. The company has built a reputation for delivering top quality LED lights with outstanding reliability and top performance since 1997 meanwhile also being one of the oldest companies focusing only on LED technology. Obelux Oy is well known of its continuous innovation and responsiveness in meeting the needs of the industry.

Obelux Oy manufactures and delivers ICAO and FAA compliant Low-, Medium-, and High intensity LED aviation obstacle lights for all applications. Obelux's aviation obstacle lights are in use in many different applications including telecommunication masts, power lines, tall buildings, bridges, stacks, weather masts, wind mills, cranes, cell sites and airports.

<http://www.obelux.com/>



## Oliotalo

Oliotalo specializes in delivering business critical information from remote assets with the internet of machines. With the help of our expertise and industry proven technologies, we connect our customer's remote production assets to the customer's business processes to enable harvesting of a higher return on investment. With our proven solutions, our customers benefit from a reliable solution, faster time to market and a lower technology risk in accessing the internet of machines. Our customers achieve among other things energy efficiency, longer lifecycle and lower waste by building intelligence into remote assets such as machines and equipment. Oliotalo has an installed base in over 40 countries.

<http://www.oliotalo.fi/>



## OptiWatt

OptiWatt is an easy solution to save energy and increase comfort. It optimizes heating and cooling on room level with an average saving of 40%. This is achieved by decreasing temperatures whenever possible – i.e. when inhabitants are not at home or during nights.

OptiWatt is a retrofit solution and no major investments are needed. Intelligent system learns how each room react to temperature changes and combines this information with weather forecast and price of electricity. The user interface is intuitive and provides detailed information of electricity consumption.

For utilities OptiWatt offers a perfect tool to roll out demand response services by engaging consumers with ease of use, valuable information of energy consumption, savings and improved comfort.

[www.optiwatt.fi](http://www.optiwatt.fi)

## Ouman

Ouman is the market leader for HVAC control and building automation solutions in the Nordics. Most of our products can be connected securely to our Ounet SCADA in the cloud. With Ounet property owners and managers can monitor and optimize heating, cooling and ventilation processes in all of their buildings with a single login regardless to where the buildings are located in. We have installed references from Dubai to New York. Please feel free to contact us for great Ouman Controllers and communication solutions or customer specific HVAC controllers with stylish Scandinavian industrial design.

<http://ouman.fi/en/>



## Outokumpu

Outokumpu produces material that enables its customers to reach more efficient solutions with lower life cycle impact. Outokumpu is a global leader in stainless steel with customers in a wide range of industries worldwide.

Being 100% recyclable, maintenance-free, as well as very strong and durable material, stainless steel is one of the key building blocks for sustainable future – playing an important role in the sustainable development of global infrastructure and cleantech solutions. The use of stainless steel represents an important component in solutions which address humanity's growing demands for clean energy and pure water. Renewable energy solutions such as solar power, biofuels and wind energy require materials that can be sustainably sourced and have low life cycle costs.

[www.outokumpu.com](http://www.outokumpu.com)



## Outotec

Outotec designs and delivers tailored solutions for minerals and metals processing, water treatment, and producing energy from biomass and wastes. Outotec's position at the forefront of these industries is founded on a century of scientific and operational knowledge and a wide range of applications for virtually all types of ores and minerals. Outotec has a strong market position across the entire value chain from ore to metals.

According to OECD definitions 90% of Outotec's order intake was Environmental Goods and Services (EGS) in 2014. In addition, 5.9 million tonnes of CO<sub>2</sub>-e emissions were avoided through the use of five Outotec technologies in 2014.

[www.outotec.com](http://www.outotec.com)



## Picosun

Picosun is the leading provider of high quality Atomic Layer Deposition (ALD) thin film coating solutions for industrial production.

In cleantech industries, Picosun's ALD coatings increase the efficiency and operational life of environmentally sustainable and low energy consumption LED lights, improve the performance of solar cells and fuel cells, enable novel, high energy density batteries, and can realize completely new ways to produce non-toxic, recyclable, and biodegradable packaging materials.

PICOSUN™ ALD product portfolio ranges from fully automated batch and cluster systems for high volume manufacturing to smaller scale R&D and pre-pilot production tools. Production-proven coating solutions for cleantech applications, IC, MEMS, LED, sensor, and 3D component processing are mastered with world-class process quality, the leading equipment design, the most comprehensive process support, and the best customer care.

[www.picosun.com](http://www.picosun.com)



## Pöyry

Pöyry is an international consulting and engineering company. We provide services across the full project lifecycle, solving complex challenges faced by the world's toughest industries. Our 6,000 experts deliver over 10,000 projects annually.

[www.poyry.com](http://www.poyry.com)

QUANTUM ELECTRIC

## Quantum Electric

Quantum Electric has managed to develop new modular electric motor technology associated with electric gears. This novel electric gearbox technology enables very high peak power and high efficiency over significantly wider electric power range than existing motors and generators that are using traditional speed control or frequency converter technology.

[www.qe.fi](http://www.qe.fi)



## Renewa



Renewa offers advanced combustion solutions for local energy production using biofuels and by-product streams in heat and power plants. The company's solutions combine innovative technology and solid project experience with maintenance and lifecycle servicing. Pioneers in energy production trust the high availability and energy efficiency of Renewa's products throughout the plant's operating life.

[www.renewa.fi/en](http://www.renewa.fi/en)

## RePack

The team behind RePack began working as a sustainable design company. The idea about reusable packaging with a deposit first emerged while working on a project with Finnish Post office. Gradually it took hold and we began working hard to create the easiest reusable packaging in the world. One of our first clients, Varusteleka was selected as Finland's best web store in 2014. The very same year we won Finland's most prestigious design prize, Fennia prize, as first startup ever.

We like simple things. We also like sustainable things. That's why we created world's easiest reusable packaging - RePack. It's for everyone who shops online and is tired of packaging trash.

<http://www.originalrepack.com/>

## Rettig Group



Rettig Group is a Finnish family business that creates value for generations through sustainable and long-term growth. We focus on leading market positions and more customer value with less environmental impact. Rettig Group's businesses are Rettig ICC - indoor climate comfort, Nordkalk - lime-stone based products and Bore - RoRo shipping services. The insurance company Alandia is an associated company of Rettig Group.

[www.rettig.fi](http://www.rettig.fi)

## RMV TECH



RMV Tech Oy is a company developing and producing micro-turbine based CHP-installations for production of electricity and heat. The turbines burn different gas fuels (biogases, natural gas, LNG, etc.) and it is even possible to use many fluid-fuels. The systems are totally automated and proven to produce electricity of excellent quality. Outputs are from 30 kW electricity and 60 kW heat producing stand alones to several parallel turbine container systems.

[www.rmv-tech.com](http://www.rmv-tech.com)



## SansOx



SansOx provides optimal oxygenation solutions for several branches of water treatment such as drinking water production, fish farming, irrigation, and industrial water processing. Our innovative products offer solutions for fast and efficient oxygenation with minimal energy consumption, energy efficiency, more controlled solids separation, and decreased need of added chemicals into water processing. We have also applications for adding or decreasing the amount of other gases and solids in water. SansOx Ltd is a dynamic and growth oriented start-up company who have received the EU Innovation Award in the WssTP forum for SMEs - with The OxTube in 2014 and with The SaoxFuge in 2015. We are strongly networking worldwide and willing to co-operate with suitable actors.

<http://www.sansox.fi>

## Savo-Solar



Savo-Solar, taken the solar thermal technology to the next level, provides solar thermal systems for heating of buildings, industrial processes and domestic hot water. Savo-Solar's systems are based on the verified world's most efficient 2 m<sup>2</sup> collector utilizing multiport extrusion profiles with several patents pending. The absorbers are coated with a highly selective optical nano-coating which Savo-Solar is the only company to be able to apply on assembled and complete absorbers.

Focus is on large scale industrial applications such as district heating, industrial process heating and energy renovations of large buildings securing a fixed low cost of energy for 25+ years.

[www.savosolar.fi](http://www.savosolar.fi)



Home solutions



## Savroc



Savroc has developed tri-chrome based coating technology that is a cost efficient alternative to carcinogenic hexavalent hard chrome. Our technology is already in use in the industry. Besides being tough, TripleHard coatings are also safe for people and the environment.

[www.savroc.com](http://www.savroc.com)

## Sharetribe



Sharetribe has developed a marketplace platform that makes it easy for aspiring entrepreneurs to create their own website for reselling, renting and swapping of goods and spaces. Sharetribe currently has more than 350 paying customers in over 40 countries around the world, and almost 100,000 items and spaces have already been added to the platform. Examples include a peer-to-peer marketplace where people can rent a surfboard from one another (<https://www.thequiver.com/>) and a marketplace for companies to get rid of their excess waste material by selling it to other companies (<https://www.mpankki.fi/>). By making it easy for people to put their underutilized assets into better use, Sharetribe reduces the need to make new stuff, which provides big benefits to the environment

[www.sharetribe.com](http://www.sharetribe.com)

## Sito



Sito is a multi-talented consulting company, which operates on 16 service areas covering infrastructure, transport, environment and digital solutions. We employ close to 500 experts and strive to provide the best working environment, great service for our clients and superior quality design and consultancy.

Our holistic and straight planning approach and high quality services cover the entire design, planning and engineering chain of infrastructure projects and consultation to project management and maintenance.

We believe in safe and clean environment, functioning society, viable urban economy and well-being. We help our customers to build economically thriving, sustainable and livable future.

<http://www.sito.fi/en/>

## Skaala



Skaala is a market leader in window-, door and glazing solutions, providing also full service package. Skaala has been awarded several times regarding its industry-leading products as well as its research and development work.

The latest pioneering innovation, Skaala Alfa cLean, is yet another unique and revolutionary concept with a huge potential in terms of lower energy consumption and quality of life. Skaala Alfa cLean combines superb energy efficiency, individual ventilation with heat recovery and better indoor air quality. Skaala Alfa cLean is one of the top innovations in the search for better solutions that will have a real effect against greenhouse gas emissions to create a better and healthier living environment.

<http://www.skaala.co.uk/en/windows.html>

## Sleipner



Sleipner has the complete solution for moving tracked equipment, saving on maintenance costs and valuable time. Break even quickly and sustainably, and optimize logistics with Sleipner – at your service globally.

The Sleipner E-series is easy to use and made to last, for excavators weighing 20-565 tonnes. With speeds of up to 15 km/h, on-site transit times can be cut up to 85%. Sleipner's patented E-series reduces the need for undercarriage repairs, and increases operational flexibility. It also reduces CO<sub>2</sub>- emissions and fuel- consumptions at least 85%.

The new Sleipner DB-series is for moving large bulldozers, drilling machines and other heavy tracked machines up to 120 tonnes. With tilting drive and high clearance, Sleipner's patented DB-series allows on-site transit speeds of up to 30 km/h.

<http://www.sleipner.fi/>

## Sofi Filtration



Sofi Filtration is in industrial water treatment business. The company has designed an innovative Sofi Filter solution for treating large streams of water containing fine particle contamination that are difficult to treat with traditional methods. The Sofi Filter produces clear, solids-free water in many industrial applications. With Sofi Filter the plant can recycle the process waters to save in fresh water intake, have less waste water to be treated and have better plant performance.

<http://www.sofifiltration.com/work>

## Solved



Solved – Together people achieve great things.

is a cleantech advisory service and collaboration platform. Solved tackles the world's sustainability challenges in an amazing way. Solved will quickly put together the best possible team to solve challenges across boundaries.

Solved's online expert community is expanding rapidly and currently consists of over 700 experts in 50 countries. Become an expert and get in on the world's most interesting projects - or use Solved as an effective cocreation platform to solve your clients' challenges.

Go to [www.solved.fi](http://www.solved.fi) to solve your challenge or become an expert today.

## Split Finland



Split Finland, formerly Ajelo, is creating world leading technology to transform the transport landscape with smart software, great user experience and lots of data. So far we have developed on-demand shared ride services in Helsinki and Washington D.C. Helsinki Region Transport (HSL)'s KutsuPlus service has been operating on Split's technology since October 2012. KutsuPlus by Split Finland is a completely new kind of smart, demand-responsive transport service that suits both business and personal needs. As Kutsuplus offers seamless travel with no worries about parking, it is convenient for travelling between offices or visiting customers, for example.

<https://kutsuplus.fi/for-companies>  
<http://split.us/>

## St1



St1 Biofuels Oy a subsidiary of St1 Nordic Oy pioneering in waste-based bioethanol production with several plants built.

St1 Biofuels produces advanced bioethanol for transportation from waste and process residues. Using waste as feedstock offers a concrete way to reduce harmful fossil emissions in traffic and to provide new methods for waste management.

The expertise of St1 Biofuels lies within biochemical processes, technology development, engineering, and project delivery. Our ongoing research and development projects increase the capacity of bioethanol production as new feedstock and plant technologies become available. Our waste to ethanol technologies and business concepts are available globally.

[www.st1biofuels.com](http://www.st1biofuels.com)

## Suntrica

Suntrica Ltd is the leader in high-efficiency, off-grid solar charging solutions. Suntrica's ergonomic, durable and lightweight products provide high quality solar energy experience for people on the move. Suntrica solar harvesting technology is also applied in various off-grid energy back-up systems to provide a high-quality and reliable source of renewable energy.



[www.suntrica.com](http://www.suntrica.com)

## there.

## There Corporation

We are There. We create home energy management solutions that bring savings in energy costs for the consumer and business transformation opportunities for the utility.

Our home energy management platform brings internet-of-things to existing heating and cooling systems. We create a new market for utilities and make the consumer an active part of the market.

Together we can create a more sustainable world.

<http://www.therecorporation.com/>



## Tengbom Eriksson Architects

Tengbom Eriksson Architects is one of the largest architectural firms in Finland. We provide comprehensive design services in the field of land use, landscape and building design from newly built to restorations, renovations and refurbishments as well as research and development. Our services also include detailed and high quality interior design for public, commercial and private spaces. Besides Finland, we work with projects in the Baltic Countries, the Caribbean, Vietnam and China. Our design has rendered us numerous awards in international and national competitions.

[www.tengbom.fi](http://www.tengbom.fi)



## The Switch

The Switch, a Yaskawa company, is a specialist in advanced drive train technology. The company has an installed base of over 11 GW of megawatt-class permanent magnet machine and power converter packages. The main focus areas are wind, marine and special industrial solutions. The company's innovative drive trains make an impact on profitable power generation and energy use, with the ultimate goal of lowering the cost of energy and operations.

[www.theswitch.com](http://www.theswitch.com)

## Teknoware

Teknoware Oy is an expert company that specializes in lighting systems for public transportation vehicles and emergency lighting systems for buildings and ships. We have strong experience in delivering customer-oriented lighting systems on a global basis.



<http://www.teknoware.fi/company>



## Tones

Trademark Arvo Jäte (valuable waste) of Tones Oy has a goal to: effectively collect inkjet cartridges for domestic recycling; remanufacture collected cartridges using automation; provide the market with refilled high-quality domestically recycled printer supplies.

The ink cartridge is a small hi-tech device containing 4-12ml of ink. When it's out of ink, it is usually thrown away. Instead, it should be recycled. The cartridge can be refilled several times at little cost. The ink in the original cartridge constitutes about 2-4% of the sales price of the cartridge.

<http://www.tones.fi/>

## TPI Control



TPI Control is an expert in heat transfer and energy management specialized in liquid circulation heat transfer. Heat transfer management is needed in buildings that use heating and cooling systems as well as in industrial processes that require temperature regulation.

<http://www.tpi.fi/en/>

## Tramel



Tramel is a recycling and reuse company specialized in electronic and electric recycling. The company has seven treatment sites and another 10 sites for collection. Tramel recycling process includes both manual and technical handling. Both techniques are essential in achieving the best possible environmental and economical results.

Tramel provides recycling services including logistics and even pick up from companies and households. After processing Tramel is selling material products to the global markets.

<http://www.tramel.info/>

## Tuup



Tuup is a mobile app that integrates all mobility services into one solution: parking, public transport, taxi, car and bike sharing. Tuup collects high-quality mobility data from users to optimize mobility services and travel behavior for the benefit of urban travellers, their employers and society.

With Tuup users can easily plan their daily travel and compare and pay for the services both for business and private travel. For employers Tuup offers a tool to manage employees' travel cost-efficiently and to give them incentives for sustainable travel options. Tuup mobile app is composed of 1) planning and optimizing, 2) booking and paying, 3) assistance during traveling, and 4) follow-up of mobility history and its costs, emissions and physical exercise.

[www.tuup.fi](http://www.tuup.fi)

## UPM



Through the renewing of the bio and forest industries, UPM is building a sustainable future across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Paper Asia, UPM Paper Europe and North America and UPM Plywood. Our products are made of renewable raw materials and are recyclable.

UPM - The Biofore Company

[www.upm.com](http://www.upm.com)



## Uponor



Uponor is an international market leader, striving to provide better plumbing, indoor climate and infrastructure solutions across Europe, North America and in other international markets. In close partnership with building industry professionals we are continuously seeking out innovative ways to ensure our systems offer the most efficient, reliable and high-performing solutions available to residential and commercial structures around the globe.

All our solutions are designed to enrich people's way of life: fast and easy to install, conserving water and energy, providing comfort and health, and giving peace of mind.

<https://www.uponor.com/company.aspx>

## Valoe

VALOE OYJ is a technology provider with a mission of clean solar energy. The challenge is that greatest increase in electricity consumption will take place in developing countries. Thus it is our ambition to provide the means for clean energy production for everyone regardless of their prior expertise, research and development capabilities or their location.

Valoe has a long history of challenging automation projects, laser processing and setting up production facilities globally. Now the company is a leading technology developer in the field of back contact photovoltaic technology. Our manufacturing process revolutionizes the production of solar panels. Our strategy is to deliver to our partners not only the manufacturing lines but also best technology, support, training, maintenance and key manufacturing components.

[www.valoe.com](http://www.valoe.com)



## Valtavallo

Valtavallo Ltd is specialised in energy-efficient lighting solutions. We aim to improve our customers' well-being and competitiveness by providing energy-saving, environmentally friendly alternatives. Valtavallo LED tubes are a result of our own product development, and manufactured in Finland with the latest automation technology.

We care for the environment, and in all our operations we make environmentally sustainable choices. The most important environmental achievement is, however, our LED tubes that have saved not only money for our customers but also a vast amount of CO<sub>2</sub> emissions. Since 2009 our LED tubes have saved energy by 84,2 million kWh and CO<sub>2</sub> emissions by 17,4 million kg. Also more than 95% of materials used in our LED tubes are easily recyclable.

[www.valtavallo.fi](http://www.valtavallo.fi)

## Watrec

Watrec Ltd. is specialized in biogas technology, organic waste and wastewater treatment processes, as well as consultancy services. The focus is on tailored systems, to design and deliver the best solutions to meet the environmental and energy challenges of clients, especially related to organic waste and wastewater treatment.

<http://www.watrec.com/>



## VALOE

## Wello

Wello has developed a revolutionary wave energy converter that solves the challenges of the industry. Device is based on form and re-purposes existing technologies from wind energy and shipbuilding. Supply chain is scalable by using off-the-shelf components and shipyards to manufacture the devices. The device captures continuous kinetic energy with an eccentric mass rotating inside the device connected directly to a generator. There are no moving parts in the seawater enabling survivability and reducing maintenance operations.

Wello is based in Finland with strong international focus. Full scale test operations are in the UK and several supply chain and engineering companies within EU area are used.

[www.wello.eu](http://www.wello.eu)



ELECTRIC DRIVES

FOR EVERY DEMAND

## VEM



A key factor in achieving energy-saving solutions is to choose the right machinery. VEM motors Finland Oy, a subsidiary of the German motor manufacturer VEM motors GmbH, specializes in AC drives with a product and service package enabling reduction and efficient control of energy costs.

The energy-saving potential of different options varies according to the special features of the application. With energy-saving motors the saving can be roughly estimated at 1-8% whereas the effect of correct dimensioning can be 20-30%. Frequency converters can save 10-50% in energy. Huge amounts of energy can be either wasted or saved.

<http://www.vem.fi/en>



## Vexve



Vexve valve and control solutions are part of a secure operating, energy-efficient and economically optimized energy distribution network, from district heating power stations and centralized cooling plants, to pumping stations and individual buildings. Throughout the entire network.

Vexve products and services represent the highest level of Finnish cleantech expertise. Our solutions save energy and improve the environment. We are part of sustainable daily life.

[www.vexve.com](http://www.vexve.com)

## Virta



Virta Ltd is the innovation leader in electric vehicle charging operator business. Virta enables B2B vendors to create business from electric vehicle charging services with comprehensive cloud-based end-to-end IT solutions with open interface.

Virta provides a modular scalable turnkey solution for EV charging networks. It enables roaming between networks and all kinds of business models from crowdsourcing of EV-charging to utility-driven EV infrastructure management. Naturally, Virta supports smart charging and aggregated demand response functionalities. Virta back-end is V2G ready.

Virta customers include owners of charging stations and retailers of charging services as well as energy utilities providing services to electric vehicle users.

<http://solutions.virta.fi/en/>

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## VTT



VTT Ltd, Technical Research Centre of Finland, is the biggest multitechnological applied research organisation in Northern Europe. VTT can produce information, upgrade technology knowledge and create business intelligence. VTT has a long tradition in the research of green technologies.

VTT provides clean water technology solutions enabling sustainable use of water, and green ICT solutions in the field of sustainable consumption, energy efficient buildings, life-cycle efficient production and optimised networks. VTT's sustainable energy research is directed towards low-carbon society and technologies. Green material solutions provide technological approaches ensure effective material flows throughout society.

VTT offers green solutions also in the field of bio- and chemical processing, emission control technology, electronics, transport, built environment and eco-efficient solutions, industrial systems and machinery.

<http://www.vttresearch.com/>

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## Wärtsilä



Wärtsilä is a global leader in complete lifecycle power solutions for the marine and energy markets. By emphasising technological innovation and total efficiency, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.

<http://www.wartsila.com/>

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Cleantechin strateginen ohjelma  
Ministry of Economy and the Employment  
Cleantech Strategic Programme  
Sari Tasa

PL 32, 00023 Valtioneuvosto  
Puh. 029 516 001  
Fax 09 1606 2166  
[www.tem.fi](http://www.tem.fi)

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