

# Making waves in renewable energy

*With its long and successful history in supplying energy and transmission systems to the telecommunications industry, the Eltek Group is now focusing more on providing greener solutions. Using its blend of proprietary technology, the company launched a new solar inverter product line, the THEIA HE-t range, in June 2010, offering the highest power conversion efficiency for isolated inverters in the industry. The THEIA family consists of string inverters suitable for use in small photovoltaic applications such as in residential and commercial buildings, central inverters for utility scale power plants, and control systems for management and monitoring. Zillion spoke to Ingvar Apeland, Vice President, Renewable Energy, about the latest developments.*

Initially established in 1971 as a specialist telecom energy systems supplier, Eltek Energy, through a strategy of mergers and acquisitions has become one of the fastest growing companies in the industry. In 2007 following the acquisition of the US-based Valere Power, the company strengthened its position in the global market and changed its name to Eltek Valere. According to Apeland the company has offices in over 30 countries and operates in more than 100 countries across the world. "We are a multinational company, and employ more than 2000 people," he says. "We have three business segments in the group, telecom, industrial and

renewable energy, and we have also started a fourth segment, E-mobility which is providing power chargers for electric vehicles."

As Vice President, Renewable Energy, Apeland's responsibility is to grow the business segment globally. "Our customers need inverters and inverter solutions," he says. "They are wholesalers, distributors, and project companies who are looking for quality technology. As a global company, we have a lot of expertise in terms of the logistics. We have a global presence for both local and international customers. In addition, we have very good



technology which is also used in our telecom and industrial products, making us highly efficient and cost effective. Also for the renewable energy segment, galvanic isolated inverters provide reliable and steady power while meeting international safety standards. There is also the added advantage of pairing this with in-field modules that can be used in all countries where regulations are tight. This gives us a truly global reach."

According to Apeland Eltek Valere's renewable energy segment is offering a full range of products in both string and central inverters. "Our string inverters and central inverters provide guaranteed performance for our customers," he says. "The market outlook for solar power systems is positive in the long term. The short term market is also good but there is problem with capability to deliver. There are some uncertainties in the German and Italian market for 2011, but on the up side other markets like China, India and the US are

becoming very strong, so I think the global market looks very promising. We were also chosen for a large project in China which gives us a good position in the region for the future."

Eltek Valere took its new THEIA HE-t product line to Intersolar Europe, the world's largest solar exhibition, in Munich, Germany in June 2010. "Intersolar was the first really big exhibition for us in renewable energy," says Apeland. "It was a very interesting event. There was a huge amount of interest in our products, particularly the isolated string inverters for photovoltaic installations. Based on the feedback people were impressed with the design, the features and the high efficiency that our products offer."

A photovoltaic installation typically consists of an array of solar panels and an inverter. The inverter lies at the heart of the photovoltaic installation and is basically a device which converts direct current (DC) to alternating current (AC) so that power can be fed into the mains. The THEIA HE-t string inverter range connects directly to a solar panel, and has the best performance when it comes to converting available energy from the panels to AC. It offers an international protection rating of IP65 and incorporates an intelligent thermal design that enables the products to withstand temperature variations, high humidity and dust levels. Flexible connection kits mean the inverters are easy to configure for different conditions and regulatory requirements. The inverters are also simple to set up with country-specific configurations while installation features enable the automatic transfer of settings from one inverter to another. The range also offers



an integrated web server with an intuitive user interface. For sites with multiple inverters, a single inverter can act as a central monitoring hub, collecting data and providing a single point of access.

Eltek Valere uses central inverters in photovoltaic plants for commercial and utility scale power generation sites. The THEIA Central Inverter range offers galvanically isolated 3-phase inverters as well as transformerless enabling high yield energy harvesting from all PV panel technology. The product range also incorporates maximum power point tracking ensuring maximum power is extracted from the solar cells.

All of Eltek Valere's energy systems are state of the art. For the telecom segment the systems consist of rectifiers and converters. The role of this energy system is to ensure the provision of back up power and thus guaranteeing up-time for the telecom network. A typical telecom energy system consists of rectifiers, batteries and a monitoring system. As a key component, the rectifier is an electrical device that converts alternating current (AC) or high voltage to direct current (DC) or low voltage. Depending on the size or requirement of the application, a

telecom power system may contain multiple rectifiers. Batteries are essential for a mains power failure and provide DC power at the correct voltage. The monitoring system enables an operator to monitor or control the system directly, via a computer or even remotely.

Apeland claims the company as a whole is very green-focused. "In telecom we have the highest efficiency product in the world and we are leading the market in this direction," he says. "And we have utilised our technology in new areas like E-mobility where we are making chargers for electric vehicles. We see a great future in using our technological advantage for developing more green-focused products in the future."



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