



# TQ

THE  
QUINTESSENCE

# *of Smart Grid*

The Knowledge Magazine from EBV Elektronik

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# Bigger than the Internet?

One key objective of international climate policy is to increase the role played by renewable energy. This calls for modern electricity networks, which can be efficiently incorporated in existing power grids by alternative, decentralised energy suppliers. Such intelligent electricity networks, so-called Smart Grids, are designed to regulate infeed of the available power and optimise the demand from customers. It will however take high levels of investment in such grids in coming years until we reach this stage. Most electricity networks are outdated – in the USA for example, the majority of grids were built over 50 years ago and are not designed to either cope with today's loads or to transmit information. The European Technology Platform (ETP) SmartGrids thus believes that investment amounting to € 390 billion will be necessary in Europe by 2030, with power transmission accounting for € 90 billion and power distribution for € 300 billion. These measures are required if we are to modernise and extend our electricity supply infrastructure, paving the way for the creation of Smart Grids.

The total Smart Grid market basically consists of the automated billing of energy consumption (Smart Metering), intelligent grid infrastructure, the associated control technology (grid intelligence) as well as smart data management (utility IT). According to a study carried out by the market research institute ABI Research, the market for Smart Meters alone is set to grow from



76 million units supplied in North America and Europe in 2009 to over 212 million by 2014. And the market is not just limited to these two regions: China for example reportedly plans to replace more than 300 million meters in order to get its growing levels of power consumption under better control and to incorporate renewable energy in the national grid.

Smart Grids are set to revolutionise the electricity market. For industry they represent a 100-billion market of tomorrow, with the commercial potential here going well beyond what we saw with the launch of the Internet. We will have to wait and see whether this comes true. There is however one thing

we can say for certain: the revolution in grid structure has only just started.

At present, the manufacturers of electronic systems for Smart Grids are still jockeying for position to break into this new market – and EBV is at their side, offering the right semiconductor solutions as well as an extensive portfolio of services.

Slobodan Puljarevic  
President & CEO, EBV Elektronik

# 4 channels to reach Swedish design engineers!

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## DEAR READER,

If the financial experts are to be believed, we are on the brink of a great new opportunity for investment - something that will be even bigger than the Internet boom: the Smart Grid. Banks are already launching the first funds and certificates, and expectations are riding high. And it cannot be denied that enormous sums have been earmarked for investment in coming years: **President Barack Obama** has set aside 3.4 billion dollars to re-equip America's outdated electricity networks so they can cope with the demands of the 21st century. The International Energy Agency (IEA) even believes that we are looking at worldwide investments to the tune of billions of dollars in the next 20 years.

For us that is reason enough to devote this edition of "The Quintessence" to the topic of the Smart Grid. In our knowledge magazine you can discover the technology that is behind this catchy name. And we'll be showing what prospects this intelligent power grid has to offer the various parties involved here.

Even if the general public sees the "Smart Grid" as a new technology - the necessary components are already available. This was the verdict of our experts, who debate this issue at the end of the magazine. Although Smart Grid components are also being manufactured by newcomers, they have already been developed and/or produced by established companies from a whole range of sectors - from the electronics industry through IT and telecommunications to instrumentation and automation - in some cases for years. What is new here is the linkage right down the chain - from the power generator to the final consumer - thanks to modern information and communications technology. Internet technology is set to play a key role in the ongoing transformation of our energy networks.

In this day and age people tend to first associate the Internet with viruses and attacks by hackers. This is why we have talked to **Eugene Kaspersky, the eponymous founder of an IT security firm**, about cyber criminals and the risk to the energy networks of tomorrow. We will not be able to prevent hackers from switching off the lights - and the Smart Grid from becoming a false investment - unless we include the issue of security from the very beginning of smart grid development.

I hope you enjoy reading this fascinating issue, "The Quintessence of Smart Grid", and look forward to receiving your feedback. I always welcome any suggestions of possible topics for future editions as well! You can contact me at [bernd.schlemmer@ebv.com](mailto:bernd.schlemmer@ebv.com).

Best regards,

A handwritten signature in blue ink that reads "Bernd Schlemmer".

Bernd Schlemmer,  
Director of Communications, EBV Elektronik

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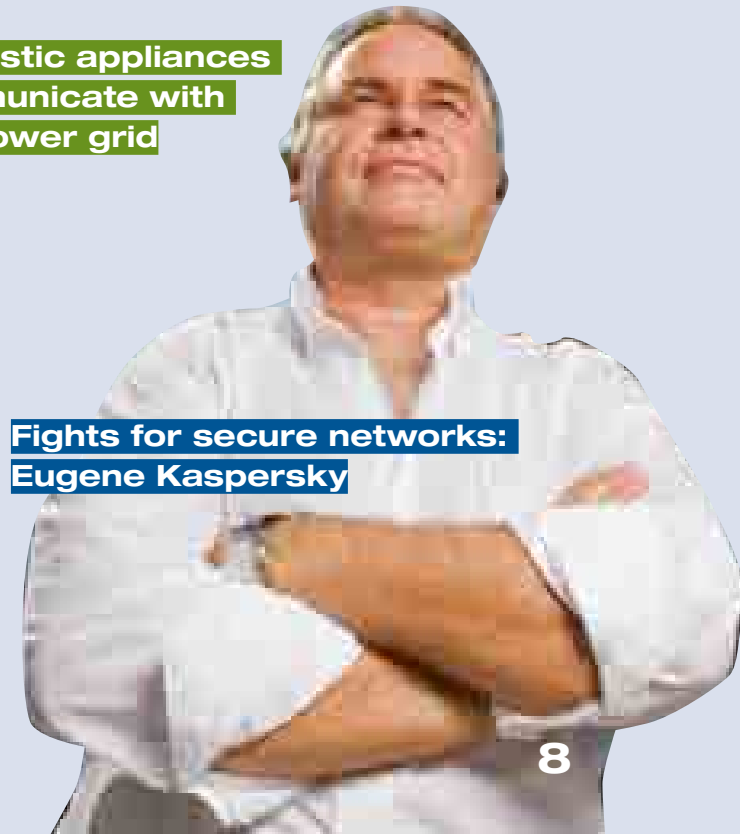
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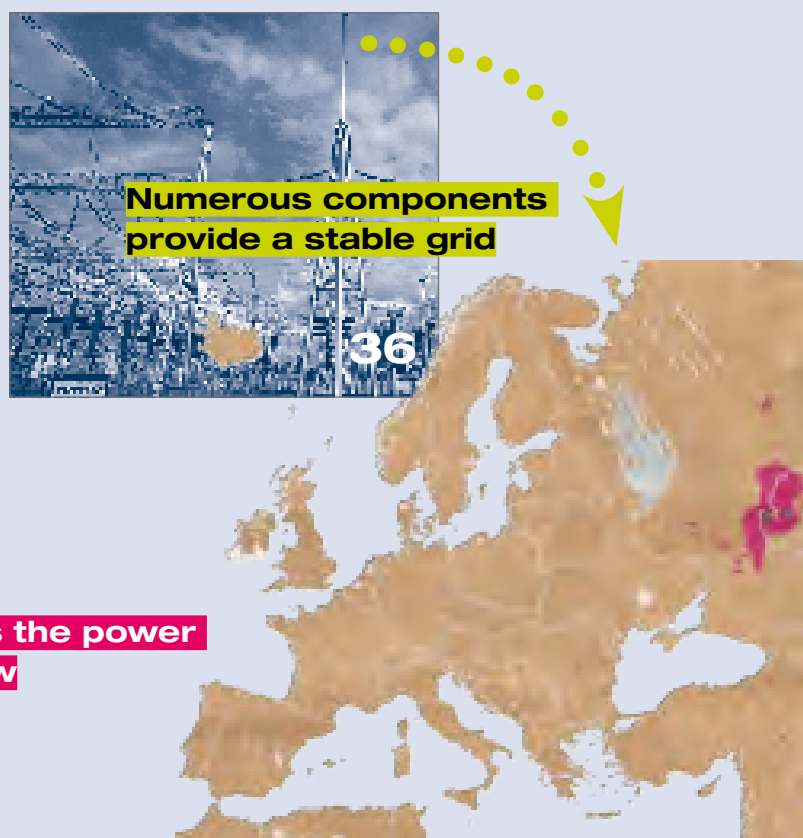
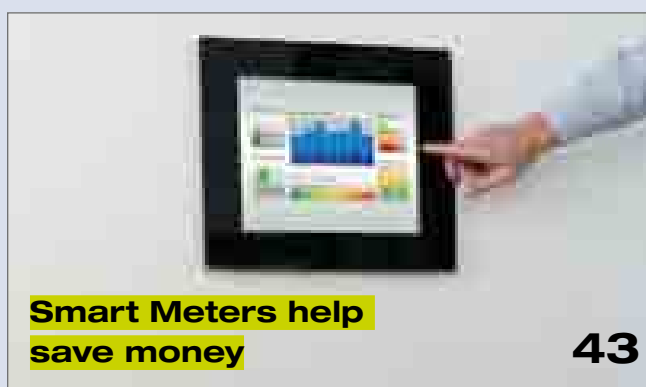
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