Press Statement – November 8, 2007

Europe's Electricity networks – a revolution ahead

Today the European Technology Platform 'SmartGrids' unveiled details of the revolution it foresees for electricity networks across Europe and the steps needed to make the vision a reality.

The SmartGrids Design – making smart connections, enabling smart choices

Electricity is a remarkable product: we use it every day, it supports every facet of modern society, yet we easily take it for granted. And more than that, we take for granted the system that manufactures it and transports it to us.

But is the transport system, the grid network, able to meet the future challenges? Today's grids, Europe's electricity networks, serve us well but all the evidence points to major changes ahead.

The way we generate electricity will change, end users will have more choices, and as a result we need to fundamentally change our electricity networks as well.

Electricity networks in Europe are in excess of 40 years old now. The question is: are companies going to replace them as they are, or take the opportunity for fresh thinking and innovation? There are very real and significant challenges of climate change, security of supplies, and Europe's competitive position to consider. In addition there are new customer requirements, and new technology to consider too.

To address this, industry stakeholders and representatives have been working together to identify a practical way forward – for the whole of Europe. **The SmartGrids design** has been developed by more than 200 experts across Europe: it's the combined vision of stakeholders from engineers to business people, from academics to politicians.

For example, imagine customers being able to generate their own electricity at home and sell the surplus back into the grid. Or: if offered a cheaper price, would they be prepared to reduce their use for 15 minutes, when asked and be paid a fee for the service? In the longer term we might like to own an electric car that can be plugged in to our home, not only to recharge, but also to supply our family with clean energy. This insight of the future presents some really exciting opportunities. **All this and much more is possible by making smart connections, to a smart grid.**

Today most people think of generation as a remote and rather centralised activity. But the world is changing: power plants are becoming more efficient, their carbon footprint is reducing, new sources of carbon free

renewable energy are becoming increasingly available, and there are tremendous advances on communications technologies. And, of course, the industry landscape itself is changing with liberalised markets and greater choice and competition.

Power generation is no longer only led by 'economies of scale' resulting in ever larger central plants. We are starting to see more mid-size and even micro-scale power generation that is both efficient and clean. A micro-generator at home may appear small scale, but if millions of homes have one, imagine the enormous effect.

SmartGrids of the future will connect large and small, centralized and dispersed power sources. They will link and coordinate generation local to users and remote from users. Bringing, for example, solar power from the south of Europe, wave power from the Atlantic coast, and wind power from the Northern Europe, to blend with large scale hydro, clean coal or gas fired generation.

The traditional grids we see today were state of the art at their time, but most were built in the middle of the last century. Consequently, every country in Europe is faced with a significant and unavoidable task of renewing them. It's a huge challenge, but this is a huge opportunity, also. **Grids need to be re-invented.** There has to be a revolution in their technology. Without new thinking they cannot handle dispersed generation because traditional networks were designed for one way flows, connecting remote central generation. But we will need two way flows to handle decentralized power generation.

In a world of dispersed generation with greater consumer interaction it makes sense to disperse the intelligence that controls the system as well. It will bring speed, reduce costs and enhance security.

At the same time strengthened European interconnection, with its sharing of resources and trading possibilities, will expand the European power market, bringing greater efficiency, robustness and value.

In order to deliver these benefits Europe has to rethink the architecture of its electricity networks on an international, national and local scale. There is a unique window of opportunity for creating the SmartGrids for the future.

The SmartGrids design is about much more than wires: it's about a revolution for the whole electricity ecosystem, a whole new architecture to enable a sustainable future for Europe.

To make this a reality a lot of work has to be done. The SmartGrids design will require research and investment in electricity networks across Europe. Given the scale of this it's an imperative that the costs are efficient for today's customers, and for tomorrow's.

Grid renewal is a big challenge, but also a unique window of opportunity. With new thinking and advanced technologies it can establish Europe's

grids for the next 50 years of their life: paving the way to connect greener generation, raising the reliability of supplies, and making far better use of valuable resources. We have an obligation not to let this opportunity slip by.

The SmartGrids revolution can be seen at two levels: smarter metering and the ability to generate and export power locally will bring great choices for homeowners; while new methods of controlling bulk power flows across national boundaries will enable the cleanest sources to be tapped and supply resilience to be enhanced on a national and international level. **The SmartGrids design is a smart investment in a sustainable future for Europe; it represents the international cutting edge in development and presents Europe with huge potential competitive advantage if we act to secure our position in international markets.**

If the smart connections and the smart choices are to be a reality action has to be taken. The Vision is achievable, but it can't be bought 'off the shelf' and today's grids present 27 different starting points; every member state today has its own grid characteristics. **There is now a pressing need for research, demonstration and deployment projects if we are to respond to European policy targets for lower carbon energy and strengthened security of supply.**

But the technology alone is not enough. It's a key to success that the technical issues are addressed together with their commercial and regulatory implications in a liberalized market.

The SmartGrids design is going to involve all the parties in a concerted and sustained effort over a number of years. There will be real challenges to overcome, but also great opportunities. There will be wider benefits: for Europe as a high-tech region, for its people in sustainable job creation and for its economy in enhancing export potential.

The opportunities ahead they are truly remarkable – now is the time for some Smart Thinking. The time is ripe for a revolution in Europe's electricity networks. The vision has been created, now it is time to act.

The SmartGrids design is about making connections and enabling choices: ***choices for governments, choices for companies and choices for customers at home.***

The second day of the conference is giving special attention to the question of making this vision a reality. It will discuss and validate the **Strategic Deployment Document** that will be published towards the end of the year.

Notes for editors

1. More information about the SmartGrids Technology Platform is at http://www.smartgrids.eu/

2. The SmartGrids European Technology Platform for Electricity Networks of the Future began its work in 2005. Its aim is to formulate and promote a vision for the development of European electricity networks looking towards 2020 and beyond.
3. Today's General Assembly in Germany is being attended by 200 delegates from across Europe, with key note speakers from the worlds of politics, technology, regulation, banking, and academia. This includes an international dimension from California, and speakers from across the European Union. The programme is at http://energie.otti.de/SmartGrids/gsg2714.pdf
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