

S P E E C H

Dr. Werner Brinker, CEO, EWE AG
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“RES and ICT – the need for a systemic approach”

1. *Welcome and Introduction*

President Chichester,
Vice-President Herczog,
Members of the European Parliament,
Representatives of the European Commission,
Ladies and gentlemen,

I am delighted to welcome you here to the European Parliament in Strasbourg. This is our fourth dinner debate with the European energy forum and I would like to thank you for your interest.

Right in front of you, you see an item that you might not have seen before.

At first sight it might not seem impressively powerful to you – but this piece of fibre-glass is **able to transport 200 megabit of data per second – much more, much faster and much more reliable than any copper cable could.**

It contains many promises: According to the “Digital Agenda” the European Commission has set itself the 2020-target that **every European should have access to an internet speed of 30 Mbps or above**, with 50 per cent of Europe’s households subscribing to connections of 100Mbps or higher. Today **only 1 per cent of Europeans benefit from a fast fibre-based internet connection**, compared to 12 per cent of Japanese and 15 per cent of South Koreans.

Very fast internet is considered essential for strong economic growth, to create jobs and prosperity, and to ensure citizens can access the content and services they want.

A recent study by Oxford Economics claims that a 10 per cent increase of **broadband penetration would lead to an increase of GDP by 1-1.5 per cent**. The EU’s GDP could in fact increase by **EURO 760 billion** if the EU matched the levels of ICT investments in the US. It could create **574,000 new jobs**, would set-up around **16,000 new businesses** and generate **EURO 263 billion a year in taxes** – desperately needed to fight debts and economic crises.

The Commission has been working hard to explore options to attract investment in broadband and to encourage investments in fibre-based networks. And we have been welcoming these efforts from the very beginning. But what does this mean for a regional energy company like EWE?

2. *Implications for a regional energy company*

At the European level, ICT is considered to be able to contribute to solving the big challenges of our society: demographic change, jobs and growth, mobility and transport and health care.

But the use of ICT can most immediately help to improve the energy system in the energy sector. We are faced with enormous challenges coming along with the “*Energiewende*” in Germany and the European energy and climate goals. At the same time, we expect that by merging ICT and energy, a number of innovative business models can be developed.

EWE is an energy company with strong regional roots in the northwest of Germany. We have been pioneering the convergence of energy, IT and telecommunications infrastructures and services for over 10 years now. In addition to our traditional operations there, we are also active in eastern

Germany, Poland and Turkey. We have over 8,800 employees and supply around 1.4 million electricity customers, 1.5 million natural gas customers and 600,000 telecommunications customers. Our shareholders are mostly local councils.

Our Distribution System Operator, EWE Netz, manages 90,000 km of electricity networks and 70,000 km of gas networks. With 34,000 km of networks, our telecommunications operator, EWE TEL, has been actively pursuing the coverage of broadband internet – especially in rural areas. We are collaborating with the local municipalities and enterprises to create and implement new models for financing broadband. Our IT company, BTC, has become one of Germany's leading provider of IT services by developing tailor-made and innovative software such as to monitor and to control energy grids, to help integrating renewable energies and to better manage fluctuating power supply.

This combination of energy, telecommunications and IT gives us a unique business profile in Germany. Together with several specialised research institutions that have emerged around the company's headquarters in Oldenburg during the last years (OFFIS, Next Energy, Forwind, OLEC), this cluster of business and research has become a success story generating regional growth, jobs and innovation.

3. ICT is at the heart of our future energy supply

Wherever I meet officials and politicians throughout Europe, there seems to be a broad majority of those who agree that we need a more intelligent energy supply. They support the idea that if we want to be competitive and efficient without putting in danger security of supply and our climate goals, we will have no choice but to optimize system and business processes across all levels of the value chain. Most of them also agree that this can only be achieved by using smart ICT technologies.

They have understood that new IT systems are capable and required to regulate flows, manage demand, store power and maintain and reverse flows.

At EWE, we have already started to put this new energy system into practice, but since then, we have been facing many challenges. **One of the biggest challenges has been to integrate the rapidly growing number of renewable energy facilities.**

Let me give you an example: more and more decentralized energy producers feed in power at the low-and medium voltage levels. In our region of Lower Saxony, already 78 per cent of renewable energies are directly connected to our distribution grid. At the beginning of this year, our grid operator has connected about 45,000 renewable energy facilities. In our distribution grid today, already every second kilowatt hour comes from renewable energy sources. It has cost us EURO 1.1 billion in feed-in tariffs. We are facing the physical problem that the overall installed capacity exceeds the highest demand from the grid by 70 per cent!

This trend will continue, especially with the political goal to further increase the share of renewable energies in the future beyond 20%. With every new installed plant, it will become more difficult and complex to incorporate these facilities with production and consumption forecasts into the overall system and thereby ensure network stability.

In the last months, there has been a focus on bigger potential energy infrastructure projects such as Helios, Desertec or the Energy Infrastructure Package. I can understand the amount of attention devoted to those projects. However, I want to stress the fact that the vast majority of electricity grids

in Europe are distribution grids, which are the only ones where renewable energies can normally be fed in. The ratio in Germany is 98 to 2 per cent.

Therefore, I want to raise your awareness tonight of devoting more attention to the challenges of the distribution grids. Let me tell you what we have been doing so far in order to meet the challenges just mentioned and present the solutions we are working on.

4. EWE's best practices in meeting the challenges

We believe that smart distribution grids will help to solve many problems and to improve the situation. Smart grids need modern information and communication technologies. Equipment and facilities, producer and consumer have to be interconnected in order to achieve smart control. This way, we can learn how voltage fluctuations and unstable network conditions can be stabilized, how to forecast electricity production from renewable energies and how to integrate all network levels in support of the overall system. Of utmost importance in this respect is the establishment of standardized data models and communication structures in order to react quickly and flexible to the enormous data flows.

As a regional energy services company, EWE has already begun to turn a decentralised and sustainable energy supply supported by smart IT and communication technologies into a reality. In our **eTelligence** research project, co-funded by the German Federal Ministry of Economy, we are looking at efficient and smart generation, distribution, use and storage. In the trial region of Cuxhaven, we are connecting various market participants such as energy producers, consumers, energy service providers and network operators with smart IT infrastructure to enable them to communicate with one another. As the network operator, we manage the interplay between renewable power generation, cold stores and our E3 electric car as energy storage devices and 650 networked households as consumers.

A plug-and-play communication architecture has been developed for sharing data and integrating all processes and facilities. This interconnection allows us to create and offer suitable timetable-based and demand-driven products. The integration of virtual power plants was also an important point. During a three month field test it was demonstrated how the interplay between cold stores and renewable energy plants could optimise the consumption and generation of energy.

Ladies and Gentlemen, with eTelligence we are testing just *one* marketplace. In the future, we will need many marketplaces, including cross-border marketplaces, all communicating with each other. This does not necessarily require cost-intensive enlargement of the power grids; intelligent interplay already makes it possible to deploy energy much more effectively and efficiently.

We have also developed various products that help to control energy systems more efficiently, helping our business and private customers to save energy and money.

As for our **business clients**, our subsidiary **BTC** with its 1800 employees develops tailor-made IT software.

This includes products such as

- anticipatory grid monitoring to reduce risks of overload to power system equipment after heavy fluctuation of renewable generation

- development of specialised control centers to integrate offshore wind power into the energy supply
- meter data management and energy visualisation
- development of virtual power plants that provide for the necessary resource aggregation and energy management

However, the transformation of the energy system can not be done without the support and awareness of the **private consumers**, too.

Private households account for nearly a third of the demand for electric power. At present, they have little opportunity to influence or control their power consumption as they don't know how much their individual devices and habits contribute towards the overall consumption.

If they knew that their dishwashers or dryers were a real burden on the network when they run at peak times, they might switch them on at other times. But they will only do so if they are rewarded for such a conscious behaviour, for example in form of suitable tariffs or incentive models. In 2011, EWE has launched such a product in form of the EWE trio smartbox. The EWE trio smartbox helps to save energy by giving a transparent overview of the total energy consumption in real time. Some of customers have managed to save up to 600 Euros per year by identifying with the help of the trio smartbox household appliances with high energy consumption and consequently switching them on during defined low price hours. In average, our customers were able to save up to 10% of their energy consumption.

However, it is by no means easy to get the customer involved.

Four years ago, I was convinced that as soon as such a product would be available on the market, consumers would subscribe immediately to the idea of saving energy and reducing their bill. Now, we have realised that customers are not automatically willing to change their behaviour. Our field tests have shown that even by increasing financial incentives to consume more energy in off-peak hours, customers are not keen on adapting to these new opportunities. They rather choose to turn on their washing machine when they feel it is needed instead of waiting a few hours when the energy is cheaper.

Don't get me wrong: I would be happy if energy consumers paid as much attention to their energy costs, consumption habits and prices as they have developed towards for price of petrol or their latest mobile phone contract.

In our 40 service points, we are trying to raise our customer's awareness towards more prudent energy consumption. We are offering advice and services and have established "consumer advisory boards" where we are engaged into increasing transparency.

I welcome the work of the Commission, "The London Forum" and the consumer organisation in that respect and look forward to how the upcoming Communication on the internal energy market will address these issues.

5. Policy Recommendations

I am often asked which changes in the policy framework - both in the field of energy and ICT - could trigger a better convergence and stimulate investments?

- First of all, it is important to think of **energy and ICT as one system and not two separate entities**. We need EU wide technical standards, ICT interoperability and data security. In this respect, we follow with great interest the work of the Commission's Task Force Smart Grids.
- We believe that an intelligent energy system can only be achieved if the **distribution grid operator becomes the market facilitator**. Only the distribution grid operator has an integrated view of the grid and can neutrally facilitate well-functioning retail markets while at the same time maintaining grid stability. A cost-efficient, timely and non-discriminatory data dispatch platform under control of DSOs will serve this goal.
- There are also **regulatory obstacles** that hold back necessary investments. A stable cost-recognition of ICT investments into the distribution grids have to be granted by the national regulators. At this stage, in many EU countries, national regulators do not allow grid operators to recover costs incurred when pursuing innovative ICT activities. Research and Development activities by network operators should also be recognised by the regulator.
- When it comes to the review of the Renewable Energy Directive, it is necessary to acknowledge the crucial role of distribution grid operators. **A further increase of renewable energies can only be achieved by reinforcing distribution grids**.
- A constant interplay between producer and consumer for mutual benefits requires the management of private and technical data. **Data protection and data security** have to meet highest standards. Therefore we welcome the current debate on the renewal of the data protection regulation. However, the current draft is in many aspects not precise enough and leaves room for uncertainties for both companies and consumers. It has to be made sure that a new regulation on data protection does not hinder technological development especially in the field of integrating energy and ICT on the distribution grid level.
- Furthermore, we are following with great interest the current discussion on the **Connecting Europe Facility Fund** and hope that it will be adopted with sufficient funds to finance, amongst others, broadband connections and energy services.
- We need to **raise awareness** that a changing energy system needs effort and support from everybody, including the consumer. How could an energy system become intelligent if consumers, some by principle, some by unawareness, are reluctant to change? We have to achieve public acceptance.

We need to understand the complexity of the future energy grid. In order to meet our common goal of limiting global warming to 2 degrees celsius by the middle of this century, **we need to implement an intelligent energy system**. Without a systemic approach of integrating ICT and Energy, we will not be able to achieve our goals.

Thank you for your attention.