

08:00 **Registration and coffee**

09:00 **Summit Welcome**

09:05 **The Smart City**

Keynote address: Profiling the smart city

- Realising all the smart grid concepts in one city
- Life cycle of a smart project - pre-feasibility planning through budget and schedule control, surveying, construction, asset management and all aspects of maintenance
- Leadership in a smart project – creating a culture of innovation and choosing the right partners who understand your smart city vision
- Outlining key project partners and future developments

09:50 **Interoperability - developing the common technical standards that will connect the grid**

As utilities, equipment manufacturers and other try to integrate all of the different pieces of the smart grid puzzle into a common architecture, the development of consensus built standards still lags behind deployment.

- Identifying the initial set of existing consensus standards- clarifying what works and what doesn't.
- The way ahead - delivering the roadmap to fill the gaps
- Catching up with deployment – the co-ordination and acceleration of standards
- Developing the standards required for devices to be utility controlled
- Examining the dizzying array of possibilities for telecommunications standards – WiMAX, Wi-Fi, proprietary mesh, microwave and land-line based technologies

Richard Schomberg, *Vice-president, Research EDF international, EDF Group*

10:30 **One-to-one meetings, networking and morning coffee**

11:50

Data Management & Communication - Interactive Workshop

Tackling the Smart Data Avalanche

Led by Teradata

- Handling the influx of data from smart meters – how utilities can prepare for the data flood
- Examining the biggest challenge that utilities will face. Predicting how much data there will be – variables that affect the amount of data that reaches the utility such as frequency of readings, number of telemetry devices and consumer involvement
- Coping with unprecedented data volumes

Home Area Networks & Smart Meters - Interactive Workshop

Home Area Networks

Led by Panasonic Computer Products Europe

- Paving the way to the eco-homes of the future
Empowering customers – giving visibility into consumption patterns
- through home area network devices, web portals and connected devices such as smart phones.
- Intelligent systems for personalised billing
- Sensor-based energy control
Model houses – intelligently managing
- the energy consumption of appliances, lighting and heating
- Protecting customers private data and consumption profiles

Transmission & Distribution - Interactive Workshop

System Improvements - optimising and upgrading your existing Smart Grid

Continuous improvement to your smart grid; creating a power network that is increasingly reliable, flexible, secure and efficient.

- Applying the best framework to enable integration through advanced control technologies
- Analysing your existing smart grid – refining the network for the best results
- Optimising the grid and increasing efficiency
- System improvements to reduce emissions and meet carbon targets

12:30 **Networking Buffet Luncheon**

13:40

Data Management & Communications

Building the Communications Network: the backbone of the Smart Grid

What are utilities priorities and considerations for the communications infrastructure of the smart grid?

- Using existing telecommunications infrastructure Vs building your own
- The reality for utilities of private communication networks
Avoiding obsolesce - ensuring that the network is flexible and powerful enough to expand for new applications, coverage area and capacity for the next 10 years and beyond
- The need for ultra reliability and super secure systems - enacting the protocols to ensure the security of the grid
Challenges of smart grid roll out in Germany and insights on how RWE AG has tackled these: A smart grid without smart meters?

Dr Andreas Breuer, *SVP Innovation and New Technologies, RWE AG*

Home Area Networks & Smart Meters

Engaging Customers in the Smart Grid

The customer is a crucial component of the smart grid. Demand response and energy efficiency depending on long-term behavioural change.

- Effecting long term behavioural change through active customer participation - avoiding consumer pushback and the "Bakersfield effect"
Engaging businesses – proving energy consumption details and offering clear benefits that show a return on any investments
- Using social media - taking the smart meter to where consumers already are
- Engaging residential customers - mastering the sciences of customer segmentation, messaging and engagement

Martin Vesper, *Managing Director, Yello Strom*

Transmission & Distribution

Electric Vehicles and Distributed Automation

- Insights from the project director of the EU pilot scheme: The MERGE Project (Mobile Energy Resources in Grids of Electricity) on integrating EVs into the grid
Using electric vehicles and mobile storage devices to balance the
- variable nature of renewable source, guarantee continuous supply and address demand response concerns
Developing future forecasting techniques to cope with the volatile and unpredictable load profiles of millions of EVs

J.A Pecas Lopes, *Director and Scientific Coordinator of the EU FP7-Project, INESC Porto*

14:20

Data Management & Communications - Interactive Workshop

The Smart Grid control room – software solutions for grid stability and complex event processing

Led by Telvent

- Evolutionary, open-architecture EMS (Energy Management Solutions) Utilising the data obtained in active demand research and providing real time optimisation
- Security and event management solutions (SEM)
- Control room solutions for stability in the smart grid
- Managing network challenges such as increasing integration of renewable energy and interconnection with other European transmission networks

Home Area Networks & Smart Meters - Interactive Workshop

A new business mindset for the Smart Grid

The predicted effect of smart technology on the electricity industry has been likened to the impact of the internet on telecommunications industry in the 1990's.

- Investment profile - where will the smart grids market be in the next five, ten and twenty years?
- Overview of the demand side management sector and its influence on the utility market
- A compelling business model for the smart grid – moving away from 'silo' based approach to management towards engineering and business optimization across generation, T & D and consumer services
- The smart grid ecosystem – finding the vendor who 'gets it'
- Who will be the major winners in the smart grid phenomenon?
- Who will be the leading players along the value chain; in areas such as AMI, connectivity, applications and software, smart meters and the smart home?

Transmission & Distribution - Interactive Workshop

Advanced Energy Storage

Storage systems and services solutions to support a more stable, reliable and efficient grid

- Storing excess power from renewable - distributed energy storage (DES) devices
- Application to broad range of existing and future DG (distributed generation) applications
- Key green energy development - Flexible AC Transmission (FACT) devices
- FACT devices allow dynamic storage capability by levelling out load peaks to ensure energy is transmitted and stored without disruption to the grid
- Transmission of renewable energy across thousands of kilometres at high efficiency
- Demand side management and storage
- projects for network transmission balancing

15:00 One-to-one meetings, networking and refreshments

16:45

Data Management & Communications

Information overload: Managing your smart grid data

- The data bottleneck – managing the challenge of information overload at the utility data management centre
- Providing real time optimization
- Insights from ESB's smart projects across Ireland

Denis O'Leary, *Head of systems and sustainability, ESB Networks*

Home Area Networks & Smart Meters

Smart homes and intelligent household appliances: The key incentive for consumers?

As standards fall into place and technology evolves, a new breed of 'smart' household products are hitting the market.

- The new 'smart' products - everything from dryers, refrigerators, lighting and security systems
- Analysing their potential to work as an incentive to modify consumers energy consumption habits with transparency in pricing and real-time metering
- Managing these utility controlled devices and utilizing the data they feed back to your data management centre
- Supporting and servicing these devices
- Key findings from Enexis BV's pilot
- project equipping 1000 Dutch homes with smart appliances

Danny Geldtmeijer, *Chief Innovator, Enexis BV*

Transmission & Distribution

Case study on short distance transmission: Regenerating the Kalasatama district in Helsinki

The regeneration the Kalasatama harbour is the biggest process of change in Helsinki in a century. Underpinning this redevelopment is a new smart electric infrastructure.

- Implementing smart grid infrastructure as part of a regeneration project
- Blurring the traditional definition of a utility
- Local solar and wind electricity
- generation, electric vehicles and smart home and business buildings
- Progressing from a pilot to an investment
- - cultivating a new business attitude to smart grids

Jussi Palola, *Head of Research & Development, Helsingin Energia*

17:25 Closing Keynote: Microgeneration and the "Prosumer"

Microgeneration will transform the one-way transmission system by allowing consumers to generate and store renewable power for their own use or sell surplus back to the grid.

- The prosumer and adoption issues – are customers now willing to participate long term in their energy management and generation?
- Potential of community microgrids – generating nearly 100% of their own power with ability to island in an emergency
- Billing structure changes - complications such as the prosumer selling energy back to the grid and remote billing
- Microgeneration technologies such as small scale wind turbines, micro hydro, PV solar systems and heat pumps
- Energy storage, safety, reliability and maintenance issues for microgeneration in homes and businesses
- Comparing off-the-grid and grid-connected set ups.

18:05 Networking drinks reception

08:30 **Registration and coffee**

09:00 **Chairman's welcome**

09:10 **Keynote Address: The Energy 2020 vision for Europe – towards competitive, sustainable and secure energy**

The EC has recognised smart grids as a key enabling infrastructure in meeting both the 20-20-20 targets and developing Europe's economic global competitiveness.

- Boosting Europe's leadership in energy technology and innovation
- The importance of smart grids in achieving the ambitious 20-20-20 energy and climate change targets
- Update on the progress of the 'smart cities' partnership
- European Electricity Grid Initiative (EEGI) Roadmap- addresses the challenge of integrating new technologies under real life working conditions and validating the results
- Importance of collaboration in accelerating the realisation of current smart projects
- Moving towards a pan-European integrated energy market and infrastructure – meeting the target that by 2015 no member state should be isolated

09:50

Data Management & Communications

Load Forecasting and Real Time Optimisation

- Active demand and integrating distributed energy sources into the grid
- Developing a distributed energy network and advanced data management Flexible, accessible, reliable and
- sustainable – frameworks required to meet the smart grid challenge
- Assessing the impact of active demand research -understanding the different participants, data acquired and their effects on future transmission

David Treballe, *Head of Operation Systems and Operational Optimisation, Union Fenosa*

Home Area Networks & Smart Meters

Smart Metering - take up and advanced functionality

Meters are often seen as the first step in implementing the smart grid and increasing consumer awareness of their energy usage. But consumer reaction to-date has been mixed.

- How effective are smart meters as an incentivising tool for consumers? Insights from largest project on consumer engagement with smart meters from Austria
- Advanced functionality in smart meters including the potential for fraud and outage detection
- Combating consumer apathy and push back

Hubert Fechner, *Head of Renewable Energy Institute, Director of Renewable Urban Energy Programme, University of Applied Sciences Technikum Wien*

Transmission & Distribution

Working towards a Pan-European Smart Grid – Regulatory and Policy Frameworks

Though smart grids are developing at a national level in Europe the network needs to be developed on a much wider scale to reach its full potential. How close is a truly responsive continental “uber-grid”?

- Challenges in developing pan-European grid including the lack of technical capacity to download data from millions of smart meters and a lack of funding
- Standardising international differences in network regulation and policy
- What form should public policy take: minimum efficiency standards; increased funding for development; tax incentives? Evaluating the current progress of the
- European Electricity Grid Initiative (EEGI) Roadmap
- Reaching 20-20-20 - is a super grid necessary for Europe to meet its renewable energy policy goals?

Tahir Kapetanovic, *Director Electricity, E-Control GmbH*

10:30 **Morning refreshments**

11:20

Data Management & Communications - Interactive Workshop

Security for the connected Smart Grid

As grid becomes more interconnected and complicated it also becomes more susceptible to attack.

- Defending control and communications against cyber attacks – terroristic, military or criminal
- Closing down potential pathways to attack the network and limiting the threat to the larger transmission grid
- Cultivating a corporate culture that demands and respects attentiveness to security among all its employees
- Systems required to guard against false data injection, estimate risk and detect stealth attacks

Home Area Networks & Smart Meters - Interactive Workshop

Advanced Meter Management Solutions

Support business decision making through remote monitoring, meter reading and real-time management of the network.

- Utilising metering and status information to analyse the network state, optimise network usage and improve the quality of electricity distribution
- Benefits to operational and energy efficiency, demand response, revenue protection
- Showcasing a variety of multi-energy meters to cover electricity, gas, heat and cold for residential, commercial and industrial customers
- AMM platforms that provide scalability, interoperability and flexibility

Transmission & Distribution - Interactive Workshop

The Virtual Power Plant

Integrating demand response, distributed generation and distributed energy storage.

- Ability to quickly pull in distributed power to the overall network infrastructure
- Shifting at will from traditional generation to smart-grid enabled renewable power
- Replacing the classic linear structure of power with a mix of generation, transmission and distribution connections that make up the virtual power plant
- The backbone of the VPP – software that holds and manages distributed energy resources and dispatches solutions

12:00 **Keynote Address: Integrating Electric Vehicles and eMobility into the network**

- Show casing the latest development in Electric Vehicles
- Mitigating the impact of EV on the distribution network – coping with the volatile and unpredictable load profiles that millions of electric vehicles will create
- AMI needed to track the incoming EV load request and remote charging
- Challenges in developing a united EV market including the unification of the charging devices

- Electric Vehicles in 2020 – cable-free inductive charging, high voltage direct current charging to make “fuelling” a vehicle faster and more convenient

12:40 **Networking Buffet Luncheon**

14:00

Data Management & Communications - Interactive Workshop

Partnership and collaboration for smart grids

Creating the new technologies and frameworks needed for the advancement of smart grids requires collaboration.

Integrating power, electronics, batteries, sensors, communications brings together people from very different professional backgrounds.

- Fostering partnerships among the vital industry sectors – power, IT, telecommunications and consumer electronics
- Picking the right telecommunications partner who has ability to align their technology with your business objectives, processes and skills
- The added factor of an already recognised household name
- Finding the right supplier – more than just technology?

Home Area Networks & Smart Meters - Interactive Workshop

Cogeneration and Combined heat and power (CHP)

Using previously waste heat from electricity generation for heating districts, homes, public buildings and businesses.

- Simultaneous generation of both electricity and useful heat
- Implementing micro-CHP within a smart grid for a home or a small business
- District CHP – bringing power and heat on a district network
- Hybrid heat pumps – combining an electric heat pump with high efficiency boiler
- Optimisation of heating and electricity through intelligent portfolio management

Transmission & Distribution - Interactive Workshop

Bringing self-healing intelligence to the smart grid

Technology solutions to support smart grid reliability and functionality

- Real-time feedback and alerts on the health of the grid
- Affecting switch-ons and repairs remotely
- Identify damaged equipment such as loose splices, cracked insulators and damaged surge arrestors to prevent outages
- Ability of the grid to anticipate disruption to supply and correct
- Installation of commercial phasor measurement units (PMUs) to provide valuable data in the event of a major blackout.

14:40 **Optimising power grids throughout Europe and the importance of active network operators** **Implementing smart projects in Germany, Hungary, Romania and Bulgaria**

- Technical challenges in delivering smart grids
- Importance of active network operators in implementing the smart grid
- TSO and DSO interaction, collaboration and bi-lateral control in optimising the network
- Impact of national regulation in development of smart projects in different European countries

Peter Sigenstam , *Vice President, Head of Smart, E.ON*

15:20 **Panel discussion: Examining Smart grid projects across Europe**

Update on smart grids projects throughout Europe and the challenges they are facing.

- Compare and contrast
- Lessons learnt to date
- Plans for the future

Zdravko Liposcak, *Head of Metering, HEP ODS Croatia*

Gunnar Lorenz, *Head of Unit - Networks, EURELECTRIC*

Paola Petroni, *Head of Scada and Measurements, ENEL Distribuzione*

Thomas Rieder, *Director of Electricity Networks, Salzburg AG*

16:00 **Chairman's closing comments and end of summit**