

FIWARE for Smart Energy: a use case pilot

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Everything gets connected & smart, not
just phones

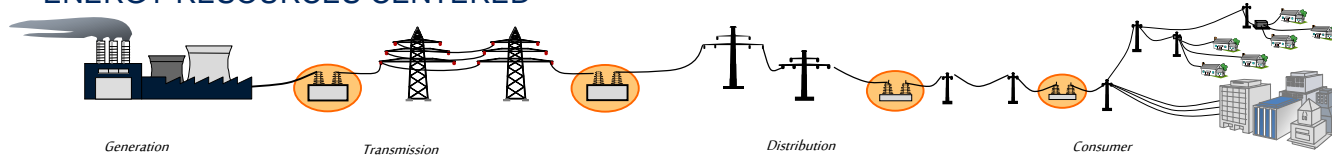
GRID transformation

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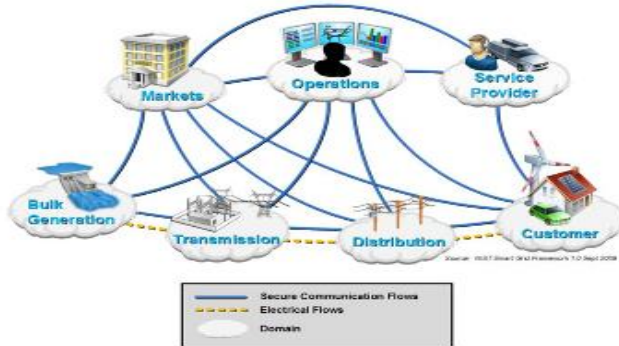
TODAY

ENERGY RESOURCES CENTERED



ONE ENERGY FLOW, ONE INFORMATION FLOW

EXPECTED DISTRIBUTED AND PARTICIPATIVE MARKET



- Distributed generation and consumption
- More focus on customer concerns; quality, security of supply
- New market participants, pro-sumers, aggregators, mobility service operators, etc
- New management models; transparency and non discriminatory access.
- New products and services.

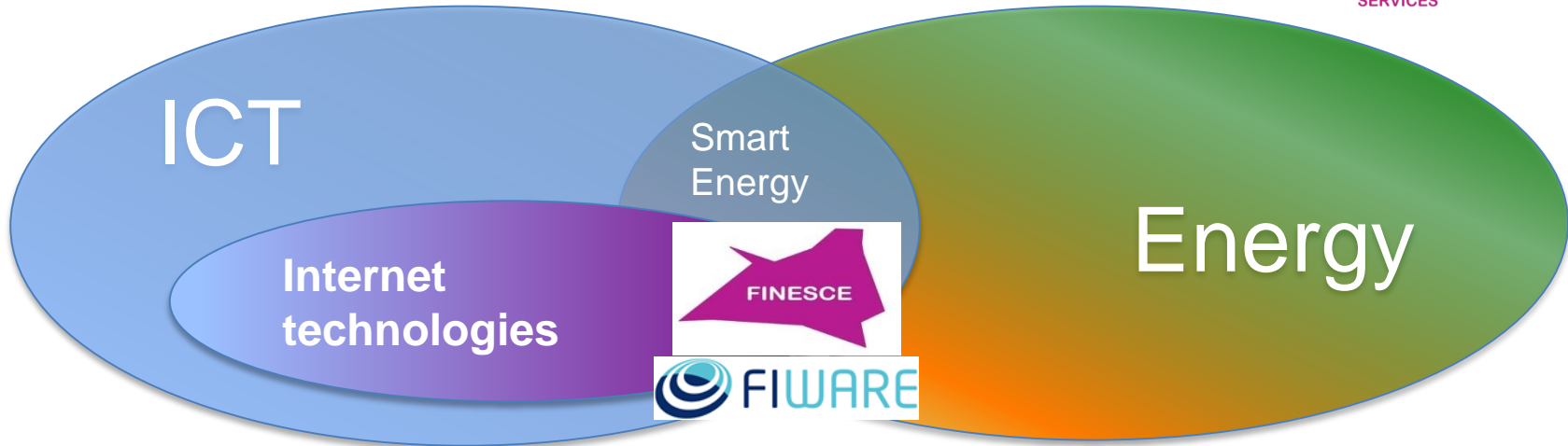
Source: NIST Smart Grid Framework 1.0 Sept 2009

BI-DIRECTIONAL ENERGY FLOW, "N" INFORMATION FLOWS

FIWARE for Smart Energy

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FIWARE of Energy: organizing..

▪ Enabling innovation based on internet interfaces in the energy sector

- (volatile) distributed energy production
- (flexible) consumers and prosumers
- electric vehicles (as consumers and storage)

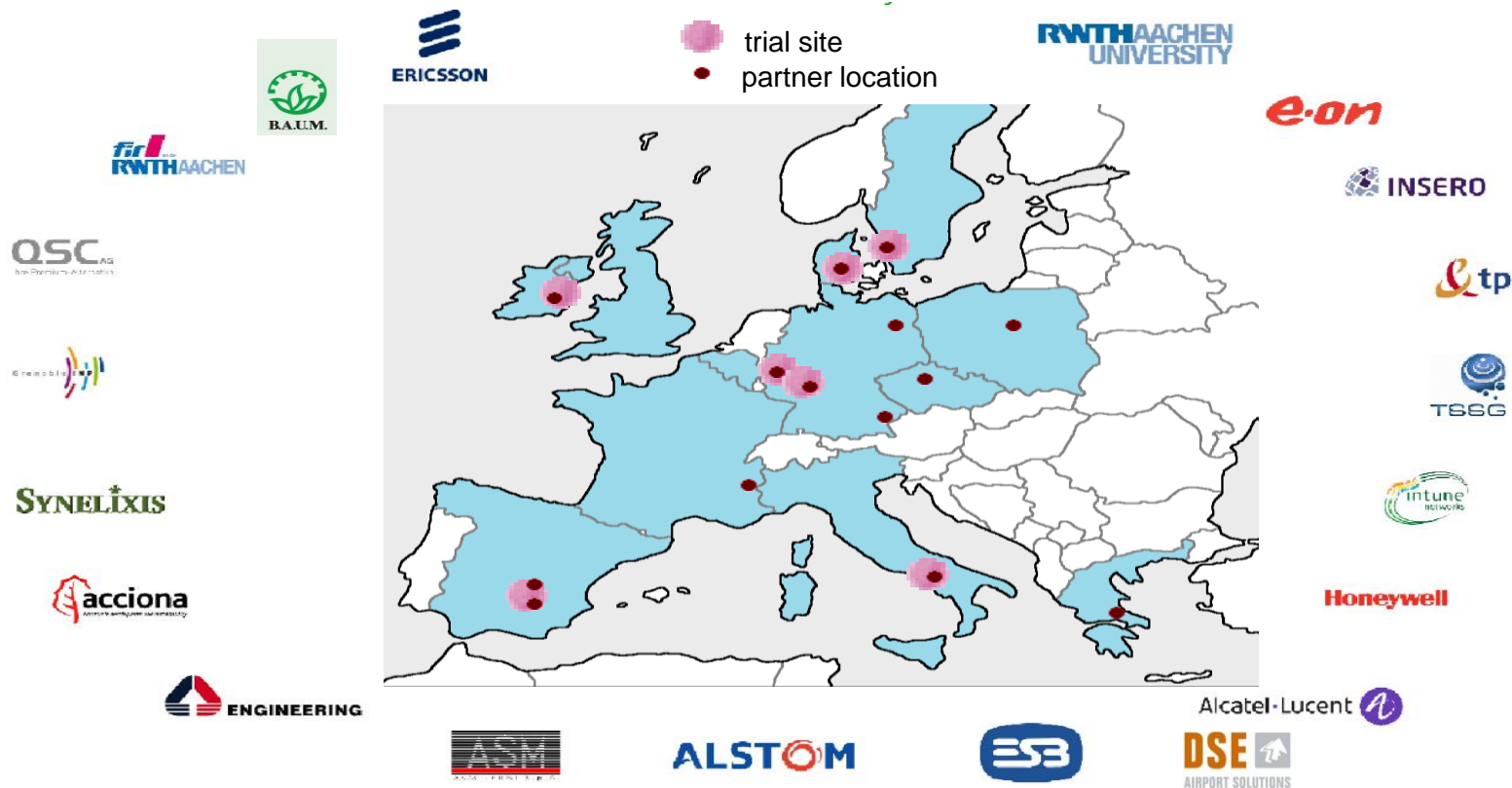
Benefits of using the future internet and GE approach:

- Shorter time to market!
- Easy access for new partners
- scalability of applications
- lower costs for application development

FINESCE Partners and Trial Sites

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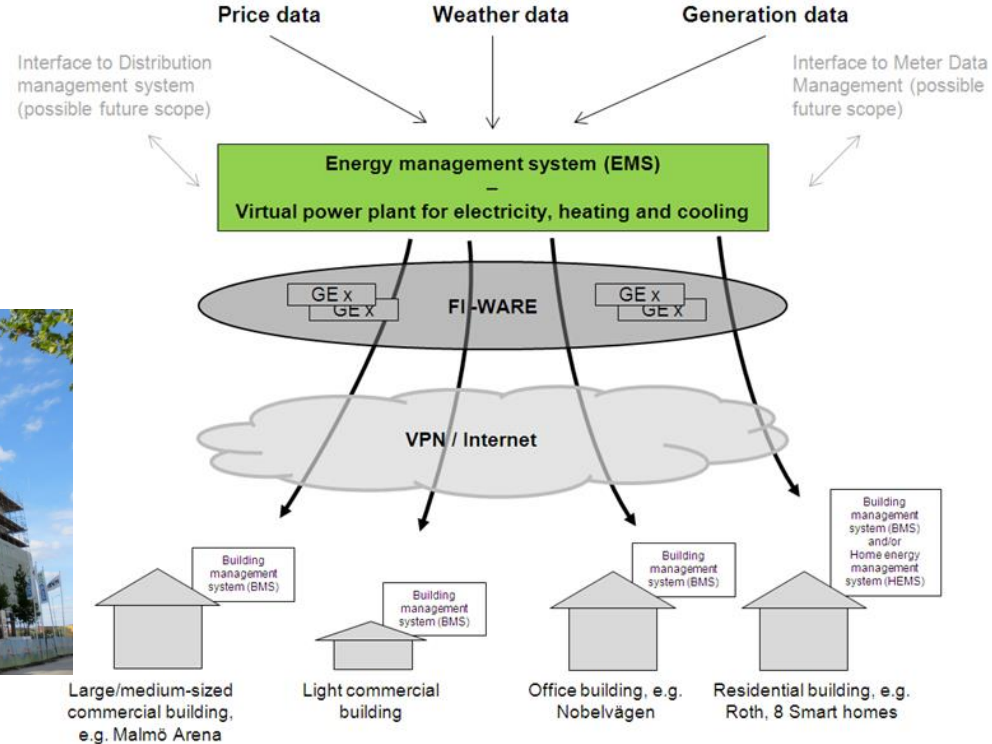


Trial 1: FIWARE Sustainable Smart City Malmö, Sweden

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- Using Future Internet as an enabler for innovation and opening of closed systems
- Demonstrate optimization of supply and demand across different energy carriers, such as electricity, heat and cooling



Trial 2 – FiWARE Smart Region Horsens, Denmark & Madrid

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Two trial sites/streams of activities

1. Trial site Horsens: Energy management in a community of 20 single family houses in a village
2. Trial site Madrid: Energy management in a commercial office building



WP 2 objectives

- Enable value added services through an open FI based platform with FINESCE APIs, offering rich data on energy needs and consumption patterns.
- Promote energy efficiency via incentives from the energy market place and dynamic tariffs.

Trial 3 – FiWARE X-border Virtual Utility

Motivations

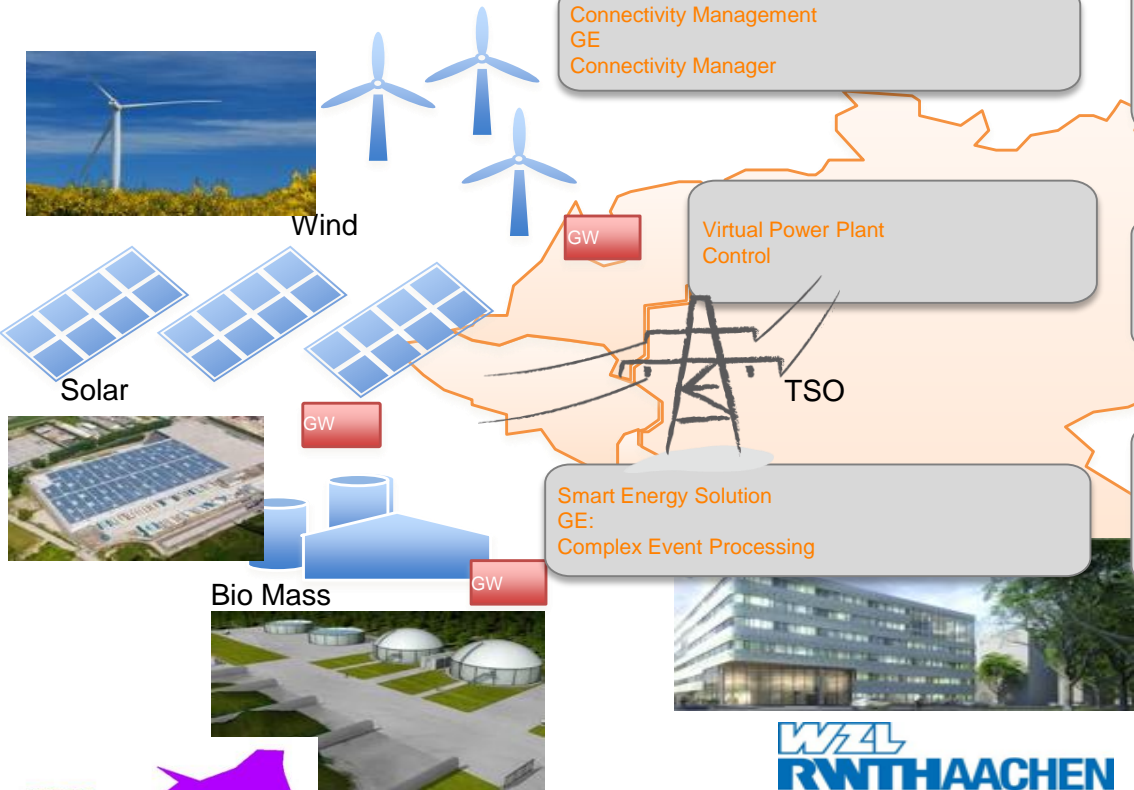
- Combine renewable Energy production with Demand Site Management to a Virtual Utility
- Combine different volatile energy production to guaranteed CO2 free certified energy

Objective

- Increase the part of renewable Energy of the consumption of electrical Energy

Scope

- Trial installation in Belgium and Germany
- ~10 Renewable energy sources
- ~1 Demand Site

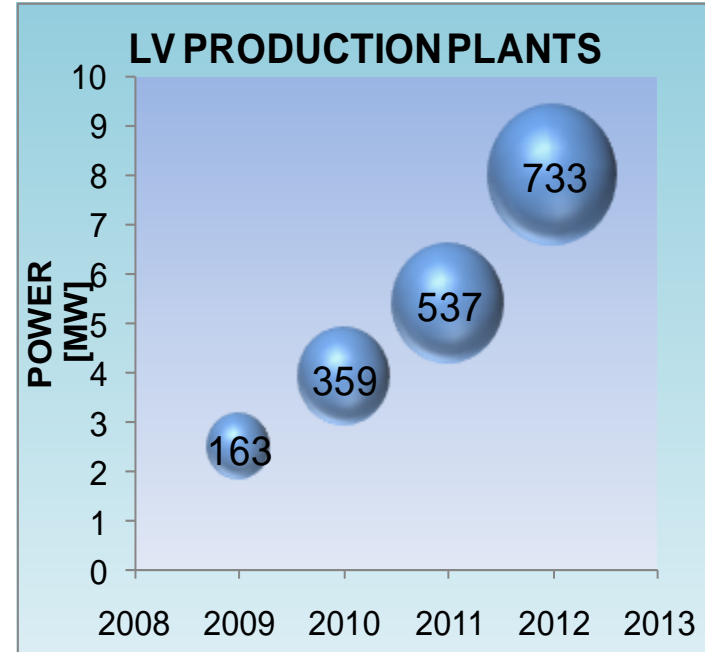


Trial 4 – FIWARE for the Energy Marketplace in Terni, Italy

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- Trial site: Terni (Italy)



Trial 5: Ireland

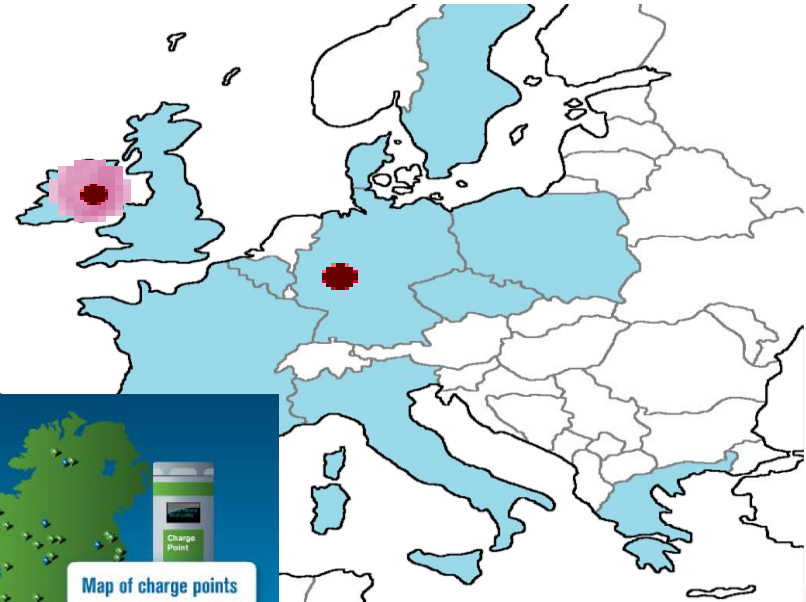
FIWARE for Power management

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Objectives:

- eCar batteries as interruptible loads to balance the power grid
- Substation communication for power management
- Simulation at RWTH to scale up results



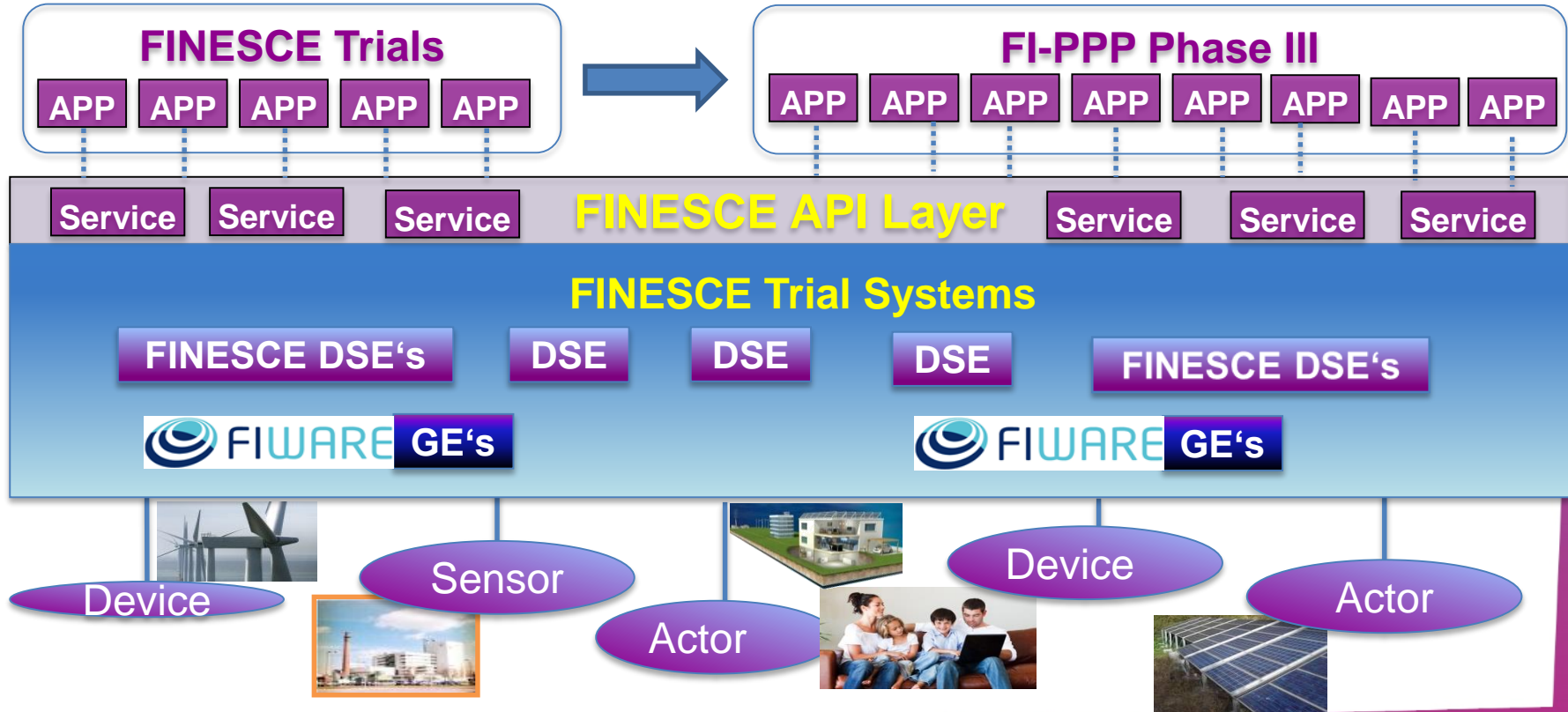
E.ON Energy Research Center



FINESCE API Layer Offers Services to Apps

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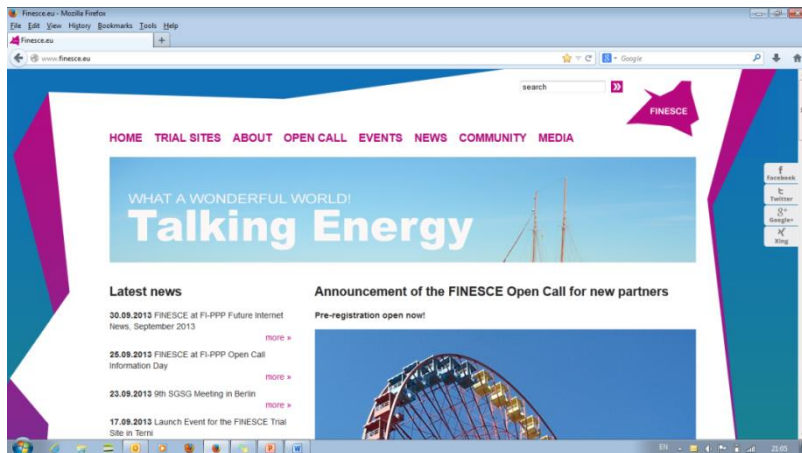


- Smart Grids mean new communications networks for utilities
- Existing systems can be developed into solutions addressing many of the requirements for Smart Grids
- GEs shorten development times and offer an excellent platform for experimentation
- Many utilities have little awareness of the opportunities of scale and scope which an IP based network offers them – it opens up a world of innovation to them

FINESCE – Team up with us!

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WWW.FINESCE.EU

› FINESCE Trial Open Days – experience our trials 1st hand!

– November 4-6, 2014

European Utility Week,
Amsterdam (Stand and Workshop)

– December 2, 2014

Horsens, Denmark
(Smart Region & homes)

– February 2015

Terni, Italy (E-market for energy)

– June 2015

Malmö, Sweden (Smart City area)

› FINESCE Innovation Community (www.finesce.eu)

- for all interested to follow what we are doing
- membership is free of charge – just enter your email address on our web site or give us a business card



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