

Conference on Innovations & Green Economy

Panel on “INNOVATION IN MARKETS” - intelligent networks

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WHAT NEEDS TO BE DONE IN ORDER TO HAVE SMART INTEGRATED GRIDS IN THE VERY NEAR FUTURE?

WHY DO WE NEED INTELLIGENT NETWORKS?

- The European energy and climate change targets for 2020 require:
 - a major acceleration of the development and deployment of cost-effective low-carbon energy technologies
 - a single, stronger and smarter European electricity grid to accommodate the massive deployment of renewable and decentralized energy sources

WHAT NEEDS TO BE DONE?

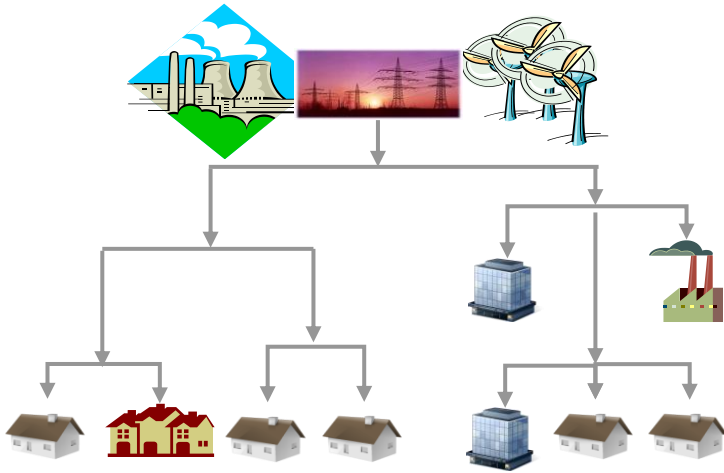
- System and technology innovation:
 - integrating new technologies under real life working conditions
 - tests of new solutions through large scale demonstration projects



SMART GRIDS CONCEPT

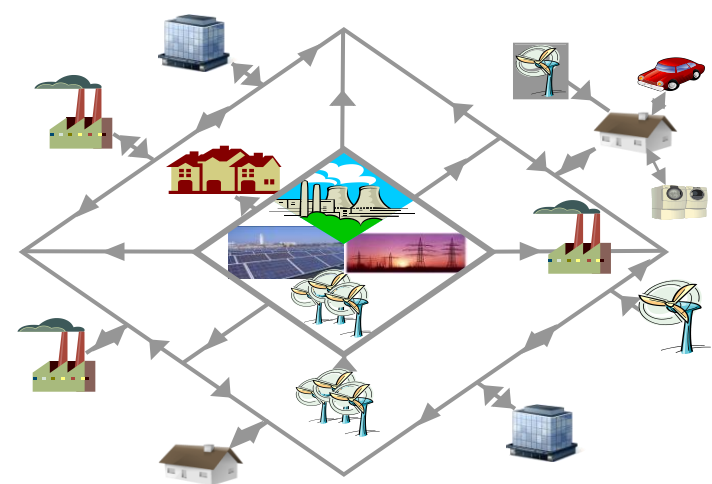
Comparison of traditional grid and Smart Grid

Traditional grid



- Radial topology
- Centralized generation
- One-way energy flow
- Low level of information
- Manual operations
- Low customer participation

Smart Grid



- Meshed topology
- Distributed generation
- Bi-directional energy flow
- High level of information
- Automatic and semi-automatic operations
- Active customer participation



WHAT NEEDS TO BE DONE IN ORDER TO HAVE SMART INTEGRATED GRIDS IN THE VERY NEAR FUTURE?

HOW CAN IT BE DONE?

- Stand-alone demonstration projects or
- Coordinated implementation plan on EU level
 - The European Electricity Grid Initiative (EEGI)
 - SET Plan EII on Electricity Grids

EXPECTED BENEFITS

- avoid unnecessary duplication and overlaps
- replication of new developments
- exchange of best practices
- promote solutions that support European standardization and interoperability
- benefits evaluation, costs estimation
- scaling up and replication scenarios



HOW CAN THE EU HELP THE INDUSTRY TO MAKE THE GRIDS SMART?

- Support and close coordination of programs and initiatives
- Foster standardization activities
- Incentives for involved stakeholders



WHAT ARE THE BENEFITS OF THE INTEGRATED SMART GRIDS FOR CONSUMERS?

SYSTEM AND CUSTOMERS BENEFITS

- increased hosting capacity for renewable and distributed sources
- high level of quality of electricity supply to all customers
- active participation of users in markets and energy efficiency
- economically efficient deployment of future networks, for the benefit of grid users
- opening of business opportunities and markets for new players in the smart grids area



HOW DOES CEZ PARTICIPATE?

- Membership in EDSO for Smart Grids, EEGI, ...
- Innovation program FutureMotion
- Smart grids demonstration project in Vrchlabí

