



## Why smart energy grids in FI-PPP

- All the “standard” reasons why smart energy grid is a hot topic
  - Distributed power generation, increasing automation and intelligence in the customer side, requirements for EU wide energy markets, ...
  - Grand vision of an integrated system where the distributed control system is used for the whole power distribution chain.
- Many analogies to telecommunications networks
  - Management and control, heterogeneous technologies, billing, roaming, etc.
- The experimentation should define at least a set of interfaces and functionalities for users, power producers and power distributors.
  - Implemented as an overlay in the first phase. Later other solutions should also be considered.



## Enablers and innovations needed

- Security, trust and dependability are the principal assumptions for communication and control in a smart grid.
- Sensor and actuator networks, seamless wireless connectivity, wireless broadband for utilities, ad hoc connectivity and context awareness provide basis for the automated and optimized control for power flow.
- Distributed services and control mechanism for handling the overall energy market.
- Human-to-network interfaces supporting different network access technologies.
- “Identity-to-identity” in addition to “device-to-device” approach
- And many more.



## Why VTT

- Multidisciplinary research institute, which has expertise on ICT technologies as well as energy production and distribution.
- Strong interests for implementing network solutions supporting smart grid applications.
  - Seamless networking, broadband wireless for utilities, home automation, mechanisms for distributed control, secure trust-to-trust communications, etc.
- Support and feedback from VTT's own energy sector R&D

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