iGREEN Grid

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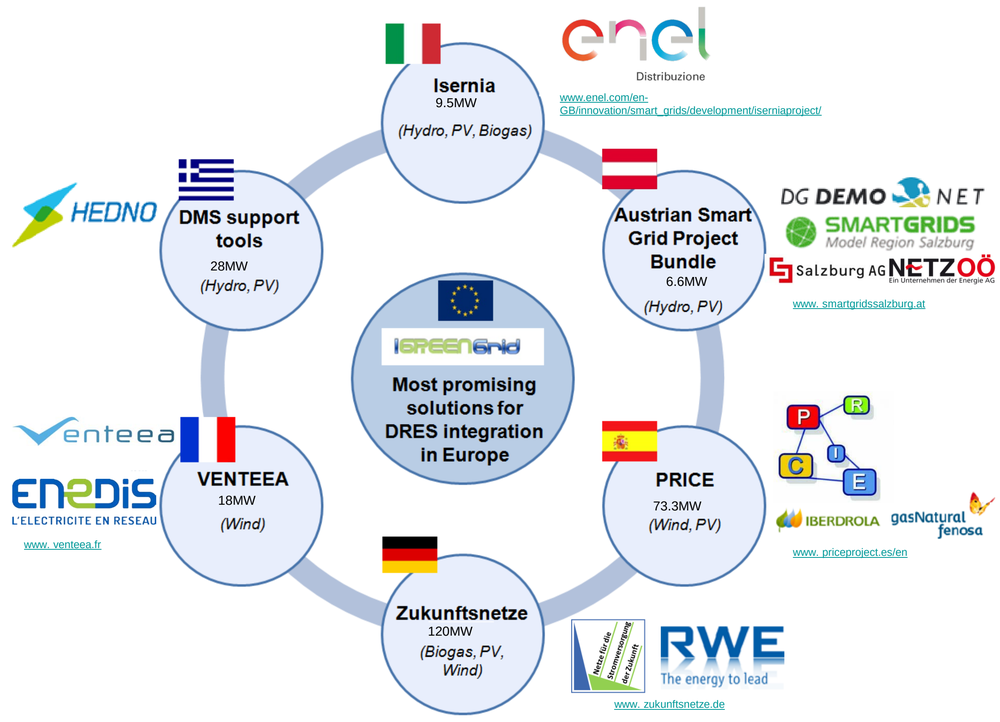
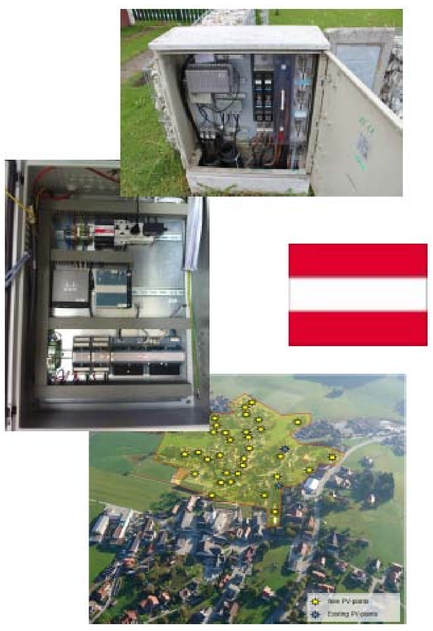


Demos



Integration of renewable energy resources into existing distribution grids using a smart planning, monitoring and control approach.

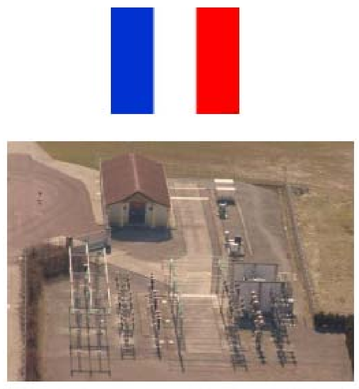
The Methods use in this approach are:

- Voltage Control:

  Develop new planning rules, monitoring techniques and introduce robust active control where necessary.

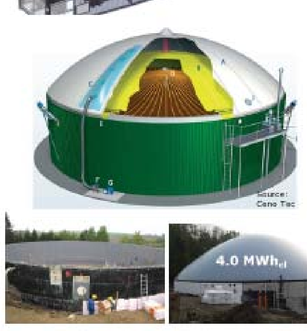
- Load Generation Management:

  Customer engagement and automated load control using the Building Energy Agent.



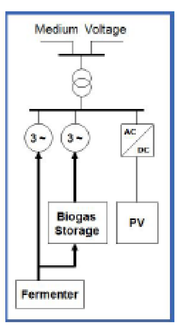
Adapting the electric network in order to have a better integration of renewable energies into the network. The methods use in this approach are:

- Active data exchange with the wind power generator.
- Use of generation forecast and voltage regulation.
- MV/LV network automation improvement and development of new products.
- Determine the impact of RES on quality and reliability of energy supply.
- Multi-users/multi-services storage use.

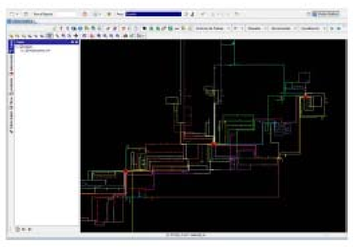


Analysis which innovative grid concept is the most efficient solution in terms of environmental policy and energy management for Smart Grid concept implementation. The objectives of this demo are:

- Scientific development of grid concepts that are geared towards current and future customer requirements.
- Development of methods and tools.

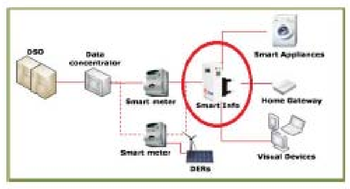


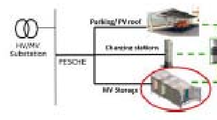
- Implementation of a grid concept using the developed planning and resource principles in a test area.
- Further development of planning and resource principles for networks derived from the theoretical grid concepts.



Deployment of a global intelligent electrical network solution, in order to get experience and knowledge in deploying and managing intelligent power systems. The objectives of this demo are:

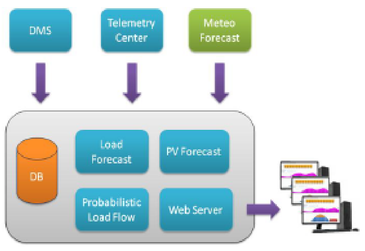
- Interoperability and common open standards.
- DRES monitoring system based on state estimation.
- Improve the integration of existing DRES.
- Improving MV/LV observability, operation and maintenance.
- DSVC system for voltage stabilization in MV feeders and LV generators.
- Specification of a DRES Control Center.

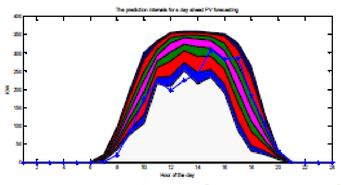




Test under real field conditions new Smart Grids technologies (including storage systems). The Methods use in this approach

- Smart Info gives customers easy access to their consumption and shall also play the role of a key element of a domestic network.
- Multifunctional storage to optimize the energy management, the load profiles and ancillary services to the distribution network.
- Substation automation through a dedicated communication infrastructure, a new automation logic for fault identification and for anti-islanding functionalities will be implemented.





Testing of advanced management tools and monitoring applications on DRES installations at MV networks. The Methods use in this approach are:

- Congestion Management.
- RES Hosting Capacity Estimation (and Management).
- Power Quality and RES Condition Monitoring.
- Reduction of network losses.
- Evaluation of Control Policies.