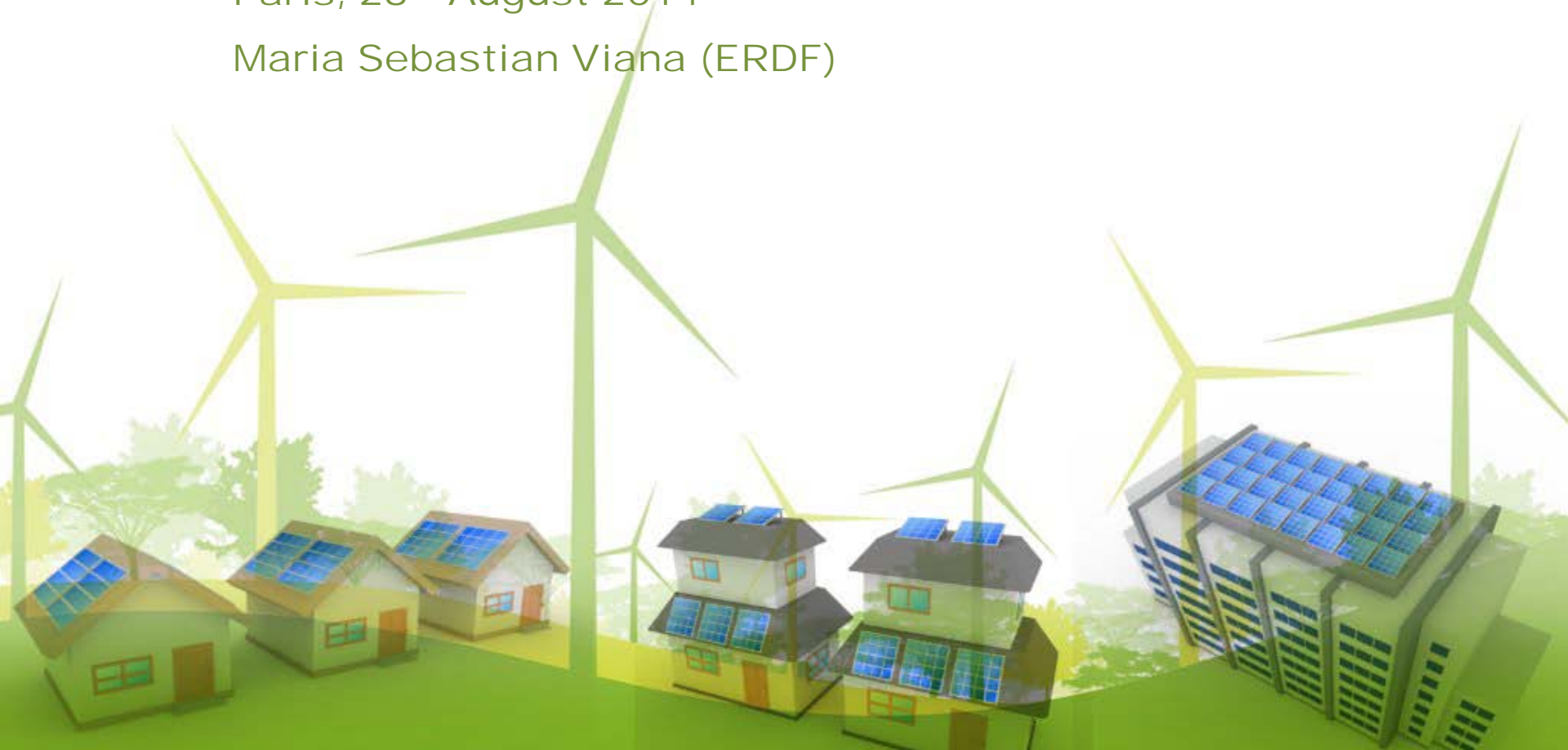


IGREENGrid Project Presentation

Paris, 28th August 2014

Maria Sebastian Viana (ERDF)

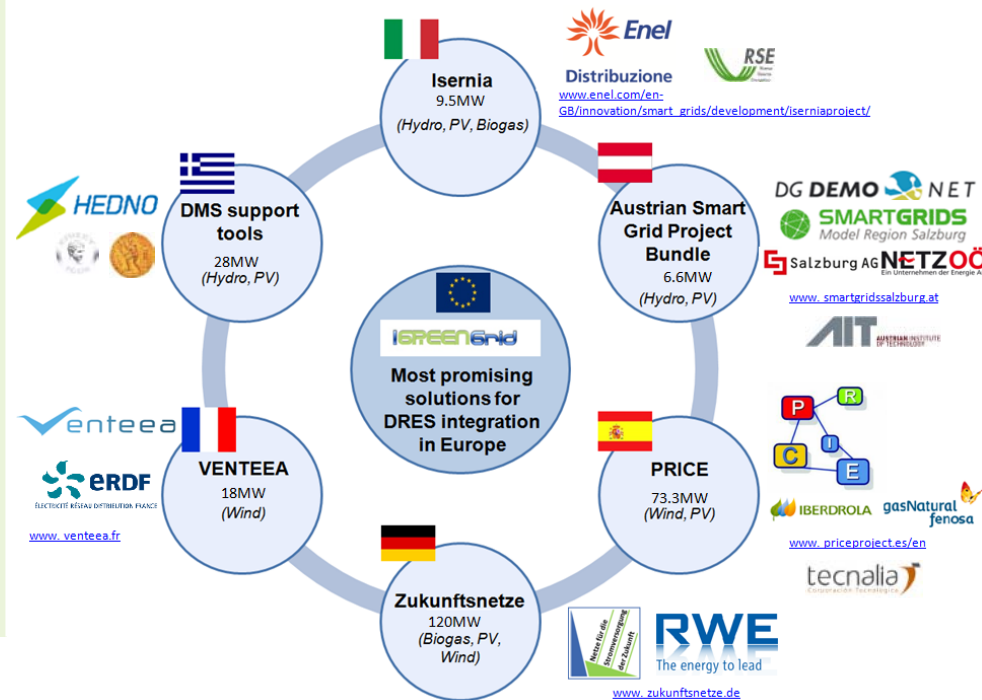


“This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 308864”.

The Project:

Integrating Renewables in the European Electricity Grid

Duration	36 months
Period	01/01/2013 – 31/12/2015
Project Budget	6,6 M€ (EC grant: 4,3 M€)
Project Coordinator	IBERDROLA DISTRIBUCIÓN ELÉCTRICA
Partners	8 DSO, 4 R&D Centres



IGREENGrid project must ensure a strong coordination with **GRID+**, **SiNGULAR** and **SuSAINABLE** projects throughout the project.



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Project Summary:

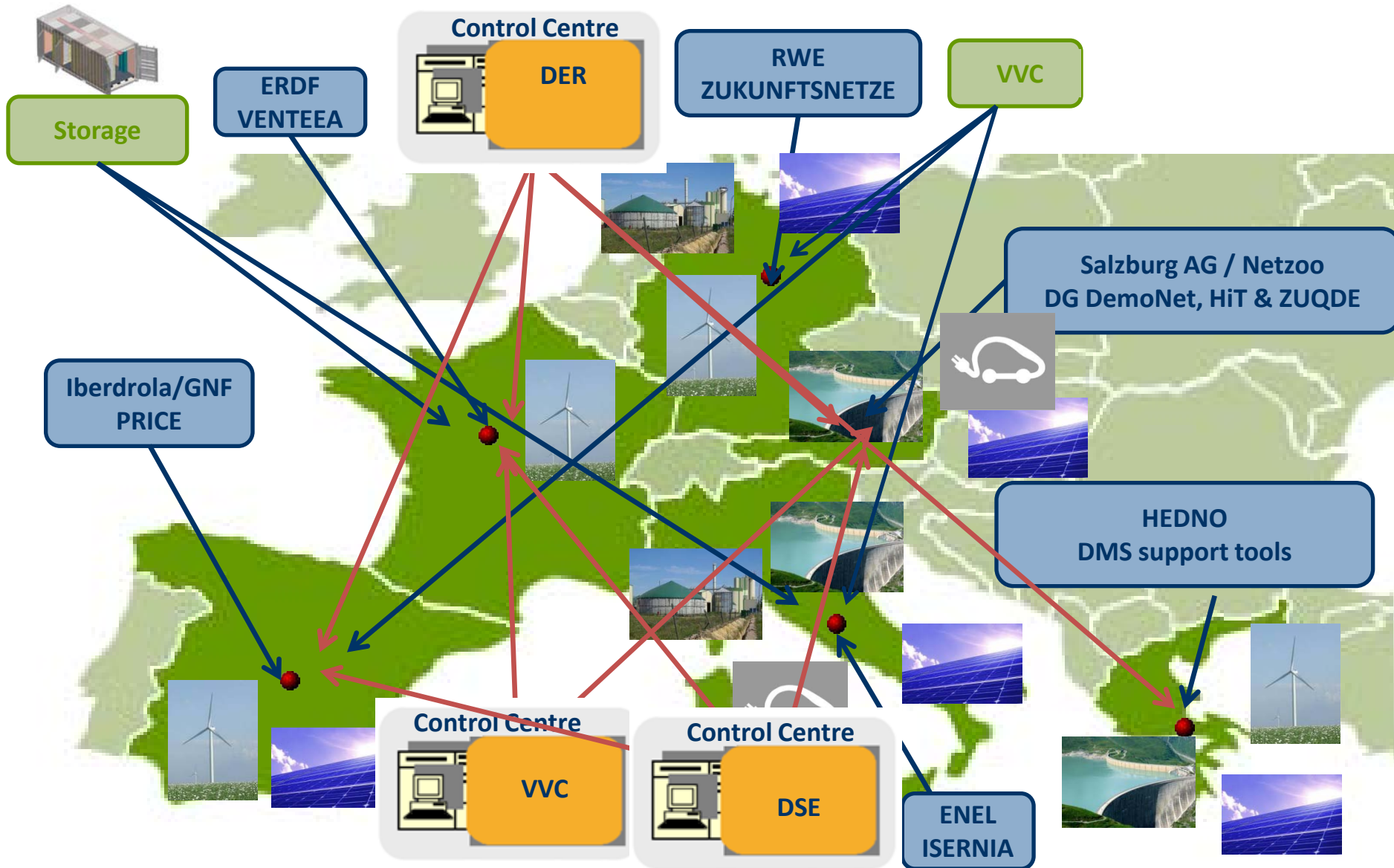
IGREENGrid project focuses on **identifying the most promising solutions for increasing the hosting capacity** for Distributed Renewable Energy Sources (DRES) in power distribution grids without compromising the reliability or jeopardizing the quality of supply.

The main **final result** will be a set of **guidelines**:

- ❑ Most promising solutions.
- ❑ Recommendations for the **integration of DRES** in distribution grids, Methodologies and tools.
- ❑ Criteria to establish **hosting capacity** and to manage **curtailment procedures**.
- ❑ **Technical requirements** to DRES, equipment manufacturers & technology providers.
- ❑ Assessment of the **scalability** and **replicability** at EU level (from technical, regulatory and economic point of view).



Local Demo Projects:



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Demonstrators Objectives (1/2):

❑ PRICE (Spain):

- **Monitor and automate** the MV/LV network, improve operation, maintenance and the integration of already existing distributed generation.
- **Forecasting and monitoring** system for distributed generation.
- DSVC system for **voltage stabilization**.
- Specification of the **Distributed Generation Control Center**.
- Contribution to **interoperability** and common open standards.

❑ ISERNIA (Italie):

- Use of **multifunctional Storage**: supporting EV charging infrastructure and MV network (voltage control & peak shaving).
- Use of Customer Information devices.
- **Demonstrates a new telecommunication** technologies aimed.
- **Tests** a series of **Smart Grid technologies**.

❑ ZUKUNFTSNETZE (Germany):

- **Identification of efficient distribution grid concepts**.
- **Improve** the methodology of an **asset assessment** of operational devices in MV networks.
- **Full observability** of a MV line with a massive penetration of DER.
- **Real test demonstration** of several solutions in MV grids to ensure the quality of power supply.



Demonstrators Objectives (2/2):

- **DG DemoNet, HiT & ZUQDE (Austria):**
 - **Increase DER hosting capacity of MV and LV networks** with new control concepts and active integration of DER network operation.
 - **Intelligent Planning and monitoring.**
 - **Asset management** and MV Voltage control optimized economically.
 - **Generation and load coordination.**
 - **Evaluation** of monitoring and control solutions based on "Smart metering".

- **VENTEEA (France):**
 - Test a **MV state estimator**, Voltage regulation and Substation control system for real-time monitoring .
 - System information exchange to facilitate RES integration (DEIE.)
 - **Use of a multi-funcional storage of 2 MVA** multi-owner/multi services.
 - Test different automation and communication solutions to **optimize the integration** of wind generation in MV network.

- **DMS support tools (Greece):**
 - Demonstrates and tests the management of the DER installations in the MV. Distribution networks using the smart metering infrastructure considering that they are equipped with **AMI connected to the Telemetry Centre.**
 - Completes a database containing the necessary geographical information.
 - **Develops of Forecasting tool** focusing on PV forecasting.



First Project Results (1/2):

❑ Identification of barriers to overcome:

- Distribution networks **need to be further developed**, e.g.: carrying capacity, ICTs and control platforms. **DSO will need rights and technical capabilities over RES** for the effective and optimal management of the active operation of the network.
- The advanced systems, the **lack of standardization** and the new functionalities create **additional costs** and **need to be recovered** by the regulatory scheme.
- The **coordination between TSOs and DSOs** should be clarified and improved. The regulation seems to be behind the real needs of the Smart Grid.

❑ Data Gathering Methodology:

- Definition of a **common data framework** and data gathering methodology for facilitating the evaluation and comparison of DRES integration solutions.
- **Specification and Implementation of a flexible software tool**, which can be used as an efficient data repository to evaluate DRES integration Solutions.



First Project Results (2/2):

Performance evaluation of smart grid strategies for RES integration is one of the main tasks of IGREENGrid.

□ **IGREENGrid KPIs Definition:**

- Definition of a set of common indicators to quantify the benefits deriving from the DRES integration distribution grids:
 - First category KPIs:
 - **DRES hosting capacity.**
 - **Quality of supply.**
 - **Energy efficiency.**
 - Second category KPI:
 - **R&I solution usage time.**
 - **Primary substation power flow.**
 - **Forecasting accuracy indicator.**
 - **CO2 emissions indicator.**

KPI evaluation (in line with the EEGI KPIs) is currently in progress. Preliminary results seem very promising from the KPI applicability point of view thanks to the strong collaboration of network operators providing field experience and data and research centres providing KPI calculation procedures.



Thank You,

28th August 2014

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