

SOLID-DER - Reaching large-scale integration of Distributed Energy Resources in the enlarged European electricity market

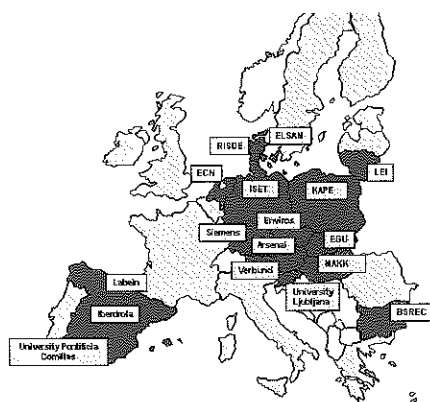


Fig 1 Project consortium

Due to the increasing importance of climate and renewable energy policy, EU Member States are gradually greening their electricity supply system and part of this supply will come from small-scale Distributed Energy Resources (DER). This development requires, however, a changing approach towards distribution and transmission network management to integrate increasing DER shares at acceptable network costs.

In both the Fifth and Sixth Framework Programmes, many R&D projects analyse the integration of DER in the electricity network in Europe. Several of them have obtained interesting results but their diversity and fragmentation threaten the beneficial impact that they may achieve in practice. Furthermore, practically none of them has analysed recent developments in the new EU Member States. SOLID-DER, a three-year 6th Framework project, will have to fill this gap by including:

- An assessment of recent developments in the regulatory and support framework of DER and electricity networks in the new Member States.
- An assessment of technical constraints and solutions for DER integration, including interconnection requirements and tools & techniques for innovative network management,

demand response and DER energy market integration.

- Cost-benefit case studies to investigate cost-benefit flows when increasing shares of DER in the electricity supply systems.
- An improved dialogue and involvement of all energy sector stakeholders in both "old" and "new" EU Member States.

The project is coordinated by the Energy research Centre of the Netherlands (ECN), carried out in cooperation with 16 other research institutes and universities (see figure 1). As the project includes 7 research organisations from the new EU Member States, information about the increasing role of DER in these countries will also be gathered.

First results show that recent introduction of support mechanisms for renewable electricity in the new Member States are leading to increasing renewable electricity shares (see table 1) and the development of new projects. A major driver in this development is the need to comply with the targets of the Renewables Directive (2001/77/EC) by 2010.

Nevertheless, some major barriers remain towards increased integration of DER. Examples, from both old and new Member States, show on one hand regulatory barriers in the form of complex network access procedures and lengthy spatial planning procedures. Economic barriers on the other hand include unstable or only temporary support for DER supply and the perception among many stakeholders that increasing DER supply will increase the costs for network reinforcements, in the end causing electricity prices to rise.

To overcome these barriers, a number of steps have to be taken to improve the DER integration in the short and medium term, such as:

- Regulatory adjustments such as simplification of authorisation procedures for spatial planning and construction permits, but also developing European interconnection standards for grid connection.
- Develop a framework of targeted awareness campaigns for various stakeholders on benefits of DER, overcoming the lack of awareness.
- Application of innovative network approaches, such as advanced power electronics and network management tools, both on distribution and transmission level.

Project results will be presented in the new Member States among power sector stakeholders by means of national seminars during the first quarter of 2007. Furthermore, in the framework of the project two international conferences will be organised. The first will be held in Sofia on April 25, 2007 and the second conference is planned in Warsaw for the second half of 2008.

Country	RES-E share (% cons. 2000)	RES-E share (% cons. 2004)	RES-E target (% cons. 2010)	Support for RES-E
Bulgaria	6.5	7.9	11.0	FIT
Czech Republic	3.9	4.2	8.0	FIT
Estonia	0.1	0.5	5.1	FIT
Hungary	0.6	2.4	3.6	FIT
Latvia	47.7	47.4	49.3	FIT
Lithuania	3.5	3.8	7.0	FIT
Poland	1.6	2.0	7.5	TGC
Romania	> 20	23.3	33.0	TGC
Slovakia	> 12	14.4	31.0	FIT
Slovenia	28.0	27.7	33.6	FIT

Table 1 Renewable electricity shares

For more information see the project website: <http://www.solid-der.org/>

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