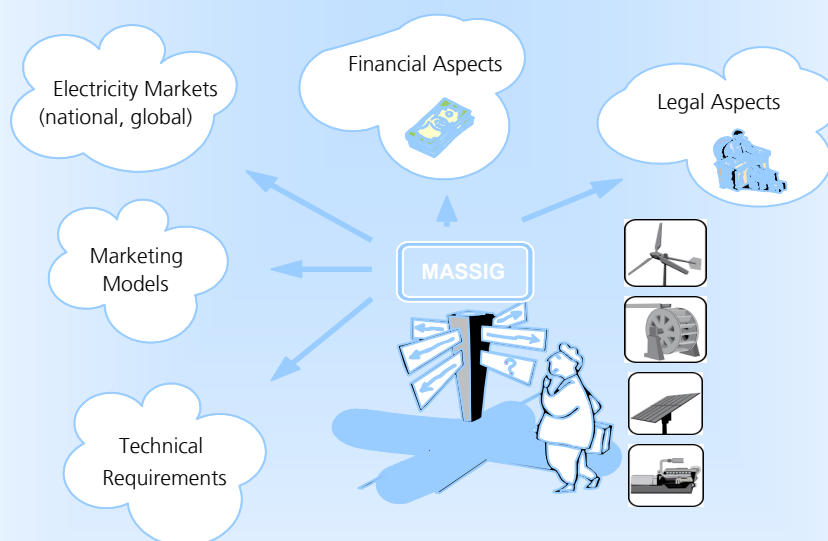


# Market Access for Smaller Size Intelligent Electricity Generation

# MASSIG

## PROJECT-BROCHURE



supported by

## BACKGROUND

Currently financial revenues for distributed generation (DG), especially from renewable energy resources (RES), mostly depend on feed-in tariffs, quota systems, green certificate solutions and other regulatory instruments. On a long term perspective, however, a full integration of DG and RES into the complex system of energy supply and markets will be necessary. One reason for this is the necessity to balance overall demand and supply, which is not promoted by flat rate incentives. But even in systems with market based support schemes we can observe that DG still provides valuable system services to a very limited extent.

Despite of national distinctions, this situation is a common task for all EC countries.

Based on liberalization and the non-discriminating access to the energy markets alternative options start to exist, that allow entering those markets by RES and DG. Products like base load, peak load or hour contracts sold at the energy exchanges are examples for this.

Also contributions to balancing power and green certificate trading belong to promising market opportunities.

The MASSIG project intends to identify and describe such promising market options.



## WORKPACKAGES

- (1) Management
- (2) Market potentials and trends for Distributed Generation in Europe
- (3) Pre-conditions for entering "big markets" by "small DG"
- (4) Technical adjustments to market requirements
- (5) Gain-Loss evaluation for new marketing approaches
- (6) Market Access – "How To?"
- (7) Communication and Dissemination
- (8) Common Dissemination Activities



## MAIN OBJECTIVES

Operators of big power plants already today exploit the new sales options in the liberalized markets, but investors and owners of smaller generation units mostly can not. There are two major reasons: first there are a number of technical and non-technical criteria to be met. Second, there is a lack of “user-friendly” information about the opportunities available and especially the “how-to?” meaning the first steps for plant operators to access electricity markets.

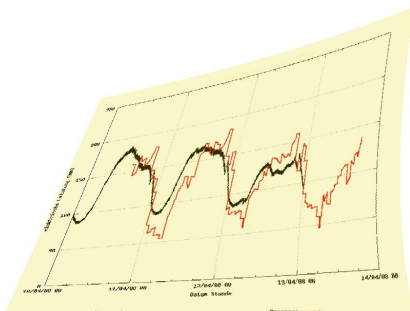
The project will pave the way for investors / owners of RES and DG for finding alternative marketing approaches, making their investments more independent from subsidies or grants. For this, the project elaborates concepts and procedures to bring them to the markets and help them selling power and other electricity products generated by DG in the power range up to several hundred kW per single unit. Technologies using RES and CHP units are in the main focus for the actions.



Technical pre-conditions for entering electricity exchanges and offering service products (such as minute reserve) will be identified and concrete action plans are set up on how to achieve the required properties (e.g. by combining different generators and technologies). For co-generation, the relation between thermal demand response and required electricity generation is addressed. As part of the project, the application of load and generation prognoses as well as operation management as tools to tailor the properties of such decentralized “virtual power plants” will be described.

## EXPECTED RESULTS

As a crucial question, tools and examples for evaluation of financial gains by using the new marketing options in comparison to the conventional situation will be given and a procedure for profit estimation and overall economic system optimization will be developed.



One key question is “what are the concrete necessary actions to participate in the electricity markets?” Non-technical requirements will be described, the different market parties will be identified and a plan of actions is developed for implementing new market approaches.

Thus the key focus of the project lies on giving guidance and information to the target groups on how to enter the energy markets and which approaches are most promising regarding technical and economic options.

## PROJECT PARTNERS

### Fraunhofer Institute for Solar Energy Systems ISE (DE)

With a staff of approximately 600, Fraunhofer ISE is the largest solar energy research institute in Europe. The work at the Institute ranges from the investigation of scientific and technological fundamentals for solar energy applications, through the development of production technology and prototypes, to the construction of demonstration systems.



### badenovaWÄRMEPLUS GmbH & Co KG (DE)

badenovaWÄRMEPLUS is a subsidiary company of the German utility badenova. It produces and sells heat to 40.000 customers located in the region Freiburg, center of the development of renewable forms of energy. badenova is partner in many pilot projects to promote solar electricity technology, photovoltaic, CHP-units, hydro-power and biogas installations.



### EMD International A/S (DK)

EMD has over 20 years of experience within software development, preparation of detailed feasibility analyses, study appraisals and second opinion analyses for many different types of distributed energy projects. It is in a position to give an unbiased appraisal of the viability of cogeneration, RES and other energy projects at a particular site.



### The University of Manchester (GB)

The University of Manchester is Britain's largest single-site university, created by bringing together The Victoria University of Manchester and UMIST. There are approximately 26,000 undergraduate and 9,000 postgraduate students at the University of Manchester and there are more than 4,500 academic and research staff.



### European Renewable Energy Council (BE)

EREC, the European Renewable Energy Council, is the umbrella organisation of the sectorial European renewable energy industry, trade and research associations covering all sectors of renewable energy. It represents an industrial sector with an annual turnover of approx. 30 billion EUR and 350,000 jobs.



### Politechnika Lodzka (Technical University of Łódź) (PL)

The Technical University of Łódź is one of the largest universities in Poland with 18,000 students and over 1,500 academic staff members. The Institute of Electrical Power Engineering carries multiple research projects in the field of power system operation and economics, distributed generation and energy quality.



### Vienna University of Technology, Energy Economics Group (AT)

The Energy Economics Group (EEG) is within the Institute of Power Systems and Energy Economics at Vienna University of Technology. EEG has managed and carried out many international as well as national research projects funded by the European Commission, national governments, public and private clients focusing on renewable and new energy systems.

