

## ENDORSE PUBLISHABLE SUMMARY – YEAR 2013

The exploitation of renewable energies is one of the identified routes to move away from fossil-based fuels and decrease the detrimental impacts of the production and use of energy on our environment and societies. The potential of the Sun, rivers, the sea or wind, geothermal and biomass energy are presently being exploited in small shares in the European Union. Increasing those shares through more profitable commercialization of these resources will ultimately lead to better environmental management and will contribute to economic growth.

However, as renewable energies can, by their very nature, be rather prone to climatic conditions and often organized in distributed generation units, their effective exploitation requires careful analysis. The evaluation of resources for investment planning as well as the monitoring of energy production management may significantly reduce the cost of planning and deploying renewable energy systems and can be paramount for the integration of the variable energy sources into the main energy system.

Recent surveys and outcomes of projects funded by the European Commission or the European Space Agency, among others, have shown that there is a need for services, tailored to the specific needs in renewable energies, able to respond reliably and affordably to the expanding needs of end-users such as expert companies, industrial users (engineering bureaus, energy producers, investors, plant managers etc.), public authorities and other organizations including European policy makers.

The ENDORSE project (<http://www.endorse-fp7.eu>) covers all of the above (analysis, evaluation, assessment) and aims at developing new, and enhancing existing user-driven downstream services. By reducing the risks involved in the investment on renewable energy systems it promotes their exploitation for a better future in respect to both the environment and our well-being.

It is presently known that renewable energies (RE) can benefit significantly from Earth Observation (EO) data. Therefore, ENDORSE not only makes use of GMES Core Services and other EO/in situ data and modeling but is also taking them a step further by developing new leading services that provide energy components for GMES and GEOSS and by exploiting the most advanced and accurate EO data. In this way, it permits and promotes further innovation as well as advances in the modeling of the geophysical fields. ENDORSE puts emphasis on extending the development of information technologies in, for example, geography and interoperability, used as tools for more accurate evaluations of resources which are greatly needed for predicting the outcome of investments so as to facilitate the expansion of shares towards the finance of installations.

ENDORSE has identified ten services following the requests of local users – both public and private –focusing on solar, wind and biomass energy, electricity management and daylighting in buildings. These services have a market potential belonging to what is called ‘pre-market services’. These services show to the wider community the potential benefits to their daily work and decision making processes. ENDORSE offers services to different market sectors of renewable energies which are distinguished by the technologies used that define different active market players. As the consortium focuses on local downstream services, these market players are typically small or medium-size companies active in their respective geographically limited markets. Therefore, the consortium will develop the service in close cooperation with a dedicated prime user representative of a large number of users in other European regions. Once there is a concrete service example, this information will be disseminated via workshops, trade fairs, conferences, publications, etc., to other

potential service users/service operators for raising the number of service providers and the service coverage for more regions/users.

ENDORSE has established an efficient workflow for the best achievement of the project. The requirements of a limited number of well-defined users (WP2) will drive the development of the products (WP4) resulting from the research activity (WP3). As well, these requirements will contribute to the key elements for the design of the pre-market services (WP6). The interactions with an extended panel of users (WP5) will enable a refinement in the services development. Thematic workshops will demonstrate products and services to users and service industry and feedback on them will be collected (WP7). This feedback will feed the assessment of the sustainability of pre-market services (WP8). The management of ENDORSE (WP1) as well as the activities of dissemination of the scientific results (WP9) will be carried on during the three years of the project.

The major project objectives for this third period (year 2013) were *i)* the completion of the services and improvements if possible, *ii)* the tests of services by the extended panel of users, *iii)* the holding of workshops for users and service industry to demonstrate the services, *iv)* the provision of guidance and recommendations to each service to maximize its exploitation and integrate it into business practices, and *v)* dissemination of scientific results.

**Completion of the services and improvements if possible.** The ten ENDORSE services were made available in March 2013. They have been partly demonstrated during the second Review Meeting. Following feedbacks by users, several services were refined. In a few cases: S3, B1 and B2, the methods and products were refined. All services have been completed before the end of the period.

**Tests of services by the extended panel of users.** Services were tested by prime-users and other users identified in the end of 2012, the so-called extended panel of users. Tests took place between March and July 2013. Testers have assessed the compliance of the proposed service with the benchmark defined in WP2 (Task 2002) and have provided feedback for refinement. The ultimate goal is to fully check, and possibly address and incorporate the users' requirements. Besides compliance, the assessment exercise also aimed at *i)* strengthening the interactions between ENDORSE and users, *ii)* getting feedback for further improvements of services, and *iii)* assessing the impacts of the developed services on the organization of daily work of users and the perceived value added versus the currently adopted solutions. Overall, all the consulted users expressed a favourable to very favourable assessment of the developed ENDORSE services. The defined benchmarks for services have been satisfactorily met, with only minor exceptions and deviations. This can be considered as an achieved milestone within ENDORSE. Several providers experience difficulties in getting busy companies in testing services and filling questionnaires. In several cases, the number of effective testers was less than announced. The initial period of testing was extended and a few interviews occurred early July 2013.

**Workshops for users.** All along the ENDORSE project, thematic workshops were organised to demonstrate the developed products and services, show test-cases and best practices, raise awareness, test sustainability and collect feedbacks.

Four workshops were organised by ENDORSE during this period. Among them, is InterSolar, the largest fair in Europe in solar energy. Five services were demonstrated there. An objective of ENDORSE is to stimulate the market by the virtue of examples, i.e. by showing to companies what has been done in ENDORSE and to suggest they might create similar services with possibly adaption to local conditions, including cultural differences. Five companies and associations of companies, and

two scientific associations were approached during this period and one German company contacted Transvalor for TMY service (S4), with no follow-up up to now.

All workshops were held in Europe and aimed at European companies. In addition, the service B1 on biomass has been demonstrated during a summer school in Uganda.

**Guidance and recommendations to each service to maximize its exploitation.** The objective of WP8 “Towards the market” was to provide guidance and recommendations to maximize the exploitation of the results of ENDORSE and integrate them in existing sectoral business practices. This was met by carrying out intensive consultation and brainstorming with users and other relevant stakeholders in order to understand and express the strategic value and the market potential for the services. Findings of the tests of services by users and comments collected during workshops were taken into account. The main challenge was to keep a consistent approach across all the 10 ENDORSE services and to apply the same methodological framework throughout, bearing in mind the characteristics of each service. A framework was proposed and refined after discussions with the Advisory Board and tests on a few cases. It proves successful and was used for all services. The WP8 outcomes were being structured by services both in terms of market analysis and recommendations. The deliverable D8.1 “Towards the market” report will be made available as planned in December 2013.

**Dissemination of scientific results.** The scientific dissemination has always been a major objective of the Consortium. The Web site has been set up in the early beginning and has been a masterpiece for project management and for the dissemination of relevant scientific-technological issues useful to downstream services. All public deliverables and other documents, including scientific communications and articles are well exposed there. Scientific results are highlighted in a specific section. All products and services were described as they were progressing. Workshops organized for users (WP 7) were announced and their outcomes were detailed.

A joint workshop has been held between the ENERGEO project and the ENDORSE project in the framework of EnviroInfo 2013 (2-4 September, Hamburg), where expertise in Web technologies in environment has been shared.

The consortium participated to nine international conferences and three German conferences to present a total of 17 communications. Two articles have been published in international peer-reviewed journals, and six should be submitted in the forthcoming months.

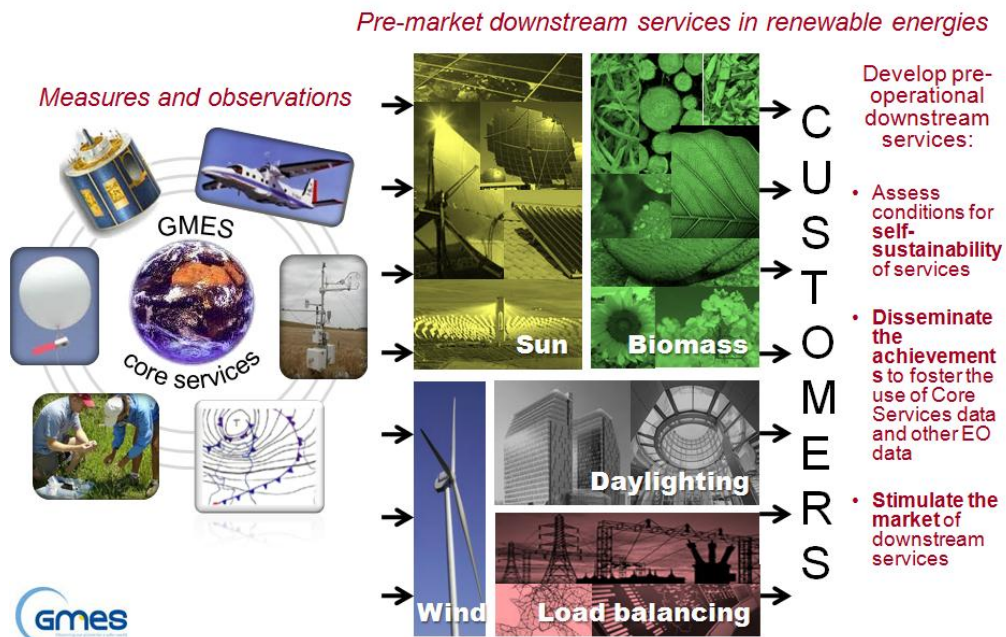


Figure illustrating the objectives and work to be done in the ENDORSE project, from the Web site [www.endorse-fp7.eu](http://www.endorse-fp7.eu).

*List of partners:*

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