

# RENESENG

Renewable Systems Engineering

CONSORTIUM: 15 partners

EU GRANT: €4,2M

GA N°: 607415

COORDINATOR: NTUA



## CONCEPT

The Renewable Systems Engineering grant (RENESENG) is a new FP7 Marie Curie project that researches and trains a new breed of engineers with project experience in biorefineries and emphasis on advanced process design, synthesis, model-based screening and analysis and process integration.

RENESENG continues and builds on a series of successful EU and national projects and will be training future scientists and engineers in biorefinery related topics.

The project duration is 4 years starting on 1st of November 2013.

RENESENG aims to prepare a new generation of highly-qualified researchers in Biorefinery and bio based Chemical Systems Engineering Sciences in Europe.

The programme is expected to bear high impact in the design of newly establishing industrial complexes in biorefining and more generally in eco-industries.

RENESENG brings together interdisciplinary academic and industrial teams of high quality expertise, embracing disciplines in agricultural sciences, chemistry and chemical engineering, biology and biotechnology, computer science, process engineering, logistics and business economics, as well as social sciences with an emphasis on life cycle analysis skills.

In parallel RENESENG will develop a program of training activities including, development of communication, business, and social skills, visits and social events allowing to prepare a new profile of researchers able to transmit their knowledge in to the wide stakeholder base associated with the bioeconomy. RENESENG ensures high quality careers prospects for all, through the active participation of 6 industrials, the creation of spin-offs and the sustainable implementation of a multicenter PhD training program.

## OBJECTIVES

The project brings state-of-the-art systems technologies mobilizing a critical mass in Europe that is already particularly active in this area but needs to coordinate the efforts and reduce fragmentation of knowledge.

The principal scientific challenge of the network will be to foster inter-disciplinary research from expert groups with dedicated interests in bio-renewables using a model-assisted systems approach as an integrating aspect, further capitalizing on its potential and role to address complex and large problems.

The aim is to develop and validate modelling, synthesis, integration and optimization technology addressing:

- 1) Lignin-based and cellulosic processes
- 2) Water-based paths to biomass production
- 3) Waste treatment paths
- 4) Hybrids of bio-renewables with other forms of renewables.

## CIMV CONTRIBUTION

CIMV was in charge of supplying raw materials (lignin, cellulose) to all partners in the consortium.

**COMPLETER CONTRIBUTION CIMV AU PROJET**

Contribution to the Bioeconomy



[www.reneseng.com](http://www.reneseng.com)

## 7th FRAMEWORK PROGRAMME

The complete name of FP7 is 7th Framework Programme for Research and Technological Development. It will last for seven years from 2007 until 2013. The programme has a total budget of over € 50 billion. This represents a substantial increase compared with the previous Framework Programme FP6 (41% at 2004 prices, 63% at current prices), a reflection of the high priority of research in Europe.

Indeed, FP7 is a key tool to respond to Europe's needs in terms of jobs and competitiveness, and to maintain leadership in the global knowledge economy.

This money will (for the most part) be spent on grants to research actors all over Europe and beyond, in order to co-finance research, technological development and demonstration projects. Grants are determined on the basis of calls for proposals and a peer review process, which are highly competitive.

In order to complement national research programmes, activities funded from FP7 must have a "European added value". One key aspect of the European added value is the transnationality of many actions: research projects are carried out by consortia which include participants from different European (and other) countries; fellowships in FP7 require mobility over national borders. Indeed, many research challenges (e.g. fusion research, etc), are so complex that they can only be addressed at European level.

But in FP7 there is also a new action for "individual teams" with no obligation for trans-national cooperation. In this case, the "European added value" lies in raising the competition between scientists in fundamental "frontier" research from the national to the European level.

The Framework Programmes for Research have two main strategic objectives:

To strengthen the scientific and technological base of European industry;

To encourage its international competitiveness, while promoting research that supports EU policies.

### MARIE SKŁODOWSKA-CURIE ACTIONS

The Marie Skłodowska-Curie actions (MSCA) support research training and career development focused on innovation skills. The programme funds worldwide and cross-sector mobility that implements excellent research in any field (a «bottom-up» approach).

There are MSCA grants for all stages of a researcher's career, from PhD candidates to highly experienced researchers, which encourage transnational, intersectoral and interdisciplinary mobility. The MSCA will become the main EU programme for doctoral training, financing 25,000 PhDs.

Endowing researchers with new skills and a wider range of competences, while offering them attractive working conditions, is a crucial aspect of the MSCA. In addition to fostering mobility between countries, the MSCA also seek to break the real and perceived barriers between academic and other sectors, especially business. Several MSCA initiatives promote the involvement of industry etc. in doctoral and post-doctoral research.

