

ENSEA – FACTSHEET

Project summary

In a shared effort to reach the "20-20-20" climate and energy goals, energy industry developments will undergo vast and radical transformation in the coming years. This transformation is often called an "energy transition" suggesting the movement from one state of being to another. In practical terms, this means movement from a fossil fuel dominated world to usage of more durable and environmental friendly alternatives. In addition, it means moving from one energy system, characterized by mass production, low technology developments and mature markets, to another. This new energy supply system is however characterized by use of multiple resources at the same time, interlinking technologies, high technological intensity and high resource interdependencies.

Facilitating the transition from use of old and wasteful energy resources to this preferred state of being influenced by the inflexibility of more durable energy resources; demands an integrated energy system. An integrated system that can balance the use and development of different energy resources at the same time, is the only way to replace large scale fossil energy use. In the future, we will need to make use of more diverse sets of durable resources in order to be able to replace fossil resource. In more practical terms, we will need to fill the energy gap when wind and sun are not available.

Building on regional strengths, ENSEA will establish links between research-driven clusters, formulate joint strategies and collaboration across the Triple Helix that facilitate the exploitation of new ideas and stimulate innovation. In this process we will strengthen the research potential of European regions encouraging and supporting regional 'research-driven clusters' associating universities, research centers, enterprises, regional authorities and other stakeholders across Europe

ENSEA brings together four high growth potential research-driven energy clusters (>20 research institutes, > 90 billion Euro investments within the energy sector) that have a common ambition in exploiting the potential of high level energy research conducted to facilitate and enhance the energy transition. The ENSEA regions have the technological- and natural resources needed to meet this challenge:

- Gas exploration, transport and storage.
- Large-scale power production with carbon capture & storage.
- Decentralization through large-scale wind energy, green gas and smart grids.
- Development of clean technologies

ENSEA combines Europe's largest players within the field of production and distribution of natural gas and electricity (Energy Valley), fossil gas and oil exploration (Scottish region), supplier of clean energy (Rogaland) and renewables (Ems Achse). The interaction between these activities create a highly advanced energy system, with a balancing function between conventional and sustainable energy. The gas infrastructure and storage facilities, combined with green gas, make it possible to use the central power production as a buffer for inflexible resources like wind and sun. The combination of offshore wind, (green) gas and carbon capture & storage enables large scale introduction of sustainable energy.

Increased international cooperation on these interconnected and interdependent technologies is necessary to prevent inefficient resource use and speed up the energy transition in general. At this point in time, cooperation is ad hoc and needs to undergo formalisation in order to coordinate efficient knowledge development that is able to cope with the technical balancing issues briefly described above. By facilitating highly directed knowledge development ENSEA aims to align the extensive research and education programs to contribute to global issues of energy supply, climate change, innovation and employability. In doing so, ENSEA will formalize an international network of large and small businesses that are able to capitalize on these knowledge intensive technological developments; making use of typical small business strengths and scientifically embedded processes that are able to measure and monitor our network developments. In addition, existing bonds of ENSEA partners with the Sichuan region in China will be used to initiate the exchange of energy transition related knowledge as well as business opportunities.

The balancing function of the ENSEA regions combined is not only a crucial precondition for sufficient and affordable sustainable energy, it will prevent inefficient use of public as well as private funding while contributing to the development of a competitive and innovative energy economy throughout the North Sea region.

Duration:

1/10/2012 - 31/09/2015

Total budget:

€ 3.191.990

Funding:

€ 2.889.696

Partners:

- STICHTING ENERGY VALLEY (NL)
- WACHSTUMSREGION EMS-ACHSE E.V (DE)
- UNIVERSITETET I STAVANGER (NO)
- ROGALAND FYLKESKOMMUNE (NO)
- LYSE PRODUKSJON AS (NO)
- SCOTTISH ENTERPRISE (UK)
- UNIVERSITY OF STRATHCLYDE (UK)
- SCOTTISH RENEWABLES FORUM LIMITED (UK)

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