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LES PÔLES DE COMPÉTITIVITÉ

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## capenergies Cluster

### for non-greenhouse gas energy sources

from Research to Production and Energy Efficiency

**Cluster supported by :**

- Conseil Régional PACA
- DRIRE PACA et Corse
- Collectivité Territoriale de Corse
- Conseils Généraux du 04, 05, 06, 13 et 84
- Communauté du Pays d'Aix
- Marseille Provence Métropole
- Nice Cote d'Azur



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## The French Competitiveness Clusters Programm



- Programme launched in 2004
- To foster cooperation between industry, R&D labs and universities
- To develop highly competitive industrial sectors
- 71 french competitiveness clusters so far
- Capenergies has been accredited by the Government in 2005

## Location of Capenergies



- Southern France, Corsica, Guadeloupe and Reunion Islands



natural assets for renewable energy (sun, wind, water, biomass...)  
 a local energy policy  
 a dense network of companies/labs/universities involved in energy  
 ITER (International Thermonuclear Experimental Reactor) :  
 an excellent leverage for the economic sector

## Why such a cluster on non-GHG energies?



### ■ A worldwide challenge to meet :

- fossil fuels shortage forecast
- climate change



### ■ The answers :



- Development of alternative non-greenhouse gas energy systems
- Energy Efficiency and demand control

## Capenergies's missions



### ■ Developing cooperative projects on energy solutions/systems:

- specific projects
- framework programmes
- competence centres and demonstration platforms



### ■ Assisting members in developing their projects and products:



- Facilitating partnerships between:
  - 3 Cluster components (research, training, industry)
  - 9 thematic fields
  - systems and technologies

### ■ Funding sources for projects follow up

### ■ Supporting their international development

### ■ Providing expertise, market analysis, training support...

**430 members covering the energy sector  
80 % of the companies are SME**



- Energy efficiency
- Solar
- Wind
- Hydro, Sea energy, Géothermal
- Biomass, Bio energy
- H2, Energy storage
- Coupling Energy systems
- Fusion
- Fission

230 members in PACA

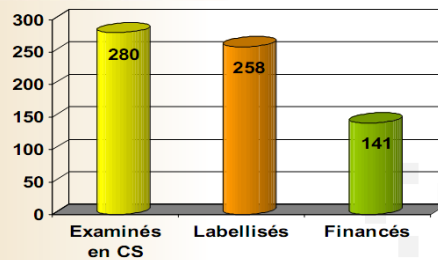
50 members in Corse

60 members in Guadeloupe

50 members in La Réunion

40 members in others regions and Monaco

**Strategy - A dynamics of projects**



June 2010

- 280 projects submitted
- 258 certified projects
  - distributed over 9 thematics
  - concerning 130 different members
  - A high rate of SMEs involved
  - for a total investment of 639 M€.
  - From research to development
- 141 financed projects (55%)
  - for a total investment of 365 M€
  - and subsidies of 140 M€ (38%)

## Examples of projects



- Technological management of energy consumption points in housing and tertiary sector,
- Integration of solar systems (solar farm, isolated area, building) : heating, air conditioning, electricity,
- Micro and pico hydro-electric plants on irrigation channels and driving water pipes,
- Development of fuel cell systems and their industrial applications
- Hydrogen production via biological means,
- Production of synthetic fuel from biomass
- .... And even more...

## Zoom on Capenergies / Solar energy



### Industry, R&D labs and universities members :

- « **R&D labs** »
  - CEA, École des Mines (materials, PV, thermo)
  - Im2np (opto-PV), CSTB
- « **Industry** »
  - GDF Suez, EDF EN, Solaire Direct, Solar Euromed
  - CNIM/Bertin, GIORDANO, TENESOL
  - NEXCIS (PV thin film, Indium/Sélénium)
  - SAED, NEP Solar ...

## Zoom on Capenergies / Solar energy



Some examples of project :



■ The SME NEXCIS is developing an innovating manufacturing process for photovoltaic modules (CIGS).



■ The SME SAED: SAED's low temperature solar power plant is an innovative solar equipment which transform the solar radiation in hot water with high efficiency.



■ Project PROSOLFRE: the CNIM group is developing a prototype of concentrated solar power module based on Fresnel technology.



■ Detailed Atlas of Solar potential in PACA area (Ecole des Mines)

## Framework programs



■ Design, Monitor and implement energy application systems fully customized to local environment (neighbourhoods, industrial areas, overseas territories)



■ Develop highly innovative Sector

■ Generate economical return in terms of employment and investment

■ Pool together regional skills in order to enhance the visibility of territorial attractiveness



## Examples of Framework programs



### ■ R&D Renewable Energy platform : Vignola



- The first R&D platform in the world that is coupling Renewable Energies, hydrogen production and storage devices thanks to fuel cell system
- A demonstration facility for monitoring technological and economical feasibility of energy application systems coupled together



### ■ Smart Grids : Premio

- Build in a specific area a new energy local framework : Production, storage and monitoring Energy application systems in a neighbourhood or an industrial area including renewable sources and energy efficiency devices.
- A regional demonstration facility with future national and international applications

## Examples of Framework programs



### ■ Solar Technical platform : MEGASOL



- Technical platform for solar central on ground (150 acres in Cadarache) open to SME and industrials for testing and optimising their solar technology. Opening on 2011.
- A regional demonstration facility with future national and international applications

### ■ Bioenergy/Bioproduct : SALINALGUE

- Microalgue product for bioenergy et some other bioproduct (6 000 ha in région PACA).
- A regional demonstration facility with future national and international applications



## International Strategy



### ■ International R&D partnerships



- Alliances with other clusters (Italy: SIIT, Spain: SOLARTYS)
- Sharing International members networks
- Collaborations to respond European and cross-border calls for project proposals (IC MED, KIS PIMS)



### ■ International commercial and industrial partnerships



- Business trips  
Targeted countries by Capenergies' SME :  
Euro - Mediterranean countries / USA, India, China



- "Piggy back"  
Matching SME's international strategies with the networks of subsidiaries belonging to big firms members of Capenergies (EDF, GDFSuez, Veolia, Areva...)



- Contribution to the Mediterranean Solar Plan



### ■ Follow up The regional councils initiatives in terms of International attractiveness of our territories



Thank you for your attention

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