



PROJECTS APPROVED
235
TOTAL BUDGET (€M)
550

Capenergies

GREENHOUSE GAS-FREE ENERGIES OF THE FUTURE

MAIN INTERESTS

- Energy demand control
- Solar power
- Wind power
- Hydro power, sea power, geothermal power
- Biomass and bioenergies
- Hydrogen, energy storage, energy vectors
- Nuclear fission
- Thermonuclear fusion
- Coupling and integrating energy systems

130 MEMBERS

210 companies: Bureau Veritas, Ponticelli Frères, Veolia, Dalkia, EDF, GDF-SUEZ, AREVA, Vinci Energies, Cete Apave SudEurope, Cari, etc.

including 7 foreign companies: Kraftanlagen Heidelberg (Germany), IBM France (USA), Ineos Manufacturing France SAS, Siliken France, Nep Europe (Switzerland), etc.

36 centers of excellence: French Atomic Energy Commission (CEA), French Radioprotection and Nuclear Safety Institute, French National Center for Scientific Research (CNRS), *Ecole Centrale de Marseille*, *Centre Conseil du Solaire et des ENR*, Universities of Nice Sophia Antipolis, Provence and Méditerranée, CSTB, Cemagref, etc.

51 local authorities

R&D WITHIN THE CLUSTER

2,700 RESEARCHERS

123 PROJECTS FINANCED

€121M STATE AID

€4.5M FROM THE IF ⁽¹⁾

€50M FROM THE NRA ⁽²⁾

NUMBER OF PATENTS FILED IN 2007
BY APPROVED PROJECTS: **N/A**

(1) IF: INTERMINISTERIAL FUND

(2) NRA: NATIONAL RESEARCH AGENCY

EXAMPLE PROJECT

APACHE

Participants: Armines, Dufour Yachts, ECT Industries, Eurocopter, Helion, Lisa Airplanes, Mettle, Venturi, etc.

Budget and duration: N/A

This project is seeking to develop fuel-cell battery systems that comply with user requirements set out by aviation (light aircraft, helicopters, etc.) and naval (sailing boats, yachts, motorboats) manufacturers.

CLUSTER STRENGTHS

→ **Number of employees at cluster members: 51,000**

- **High potential for renewable energy:** with the **largest potential for solar power in France, the second-largest source of hydro power in France and the third-largest source of wind power and biomass**, the Provence-Alpes-Côte-d'Azur (PACA) region represents an outstanding 'testing ground' for all innovative experiments in the field of renewables.
- **The ITER project: global recognition for the Provence-Alpes-Côte-d'Azur region.** When ITER was established in Cadarache, it put the region onto the world stage for research into nuclear fusion.
- **An ambitious regional energy policy,** backed up by a regional development strategy, paying particular attention to energy supply issues.
- A group of participants providing expertise, technological resources and projects with a high international profile.
- **A critical issue for the environment and climate across the planet,** in an international context that requires new approaches and new developments to address the energy problem.

INTERNATIONAL OUTLOOK

Weak

→ **Cooperation with foreign clusters**

- Cooperation agreements with the Italian cluster SIIT
- Cooperation agreements with the Mediterranean Observatory on Energy

→ **Participation in European programs**

- Some Capenergies members are taking part in European Union programs for international cooperation projects (7th Framework Program – FP7, Eureka, IEE, Med, Alcotra, etc.)

→ **Involvement in international projects**

- Joint missions abroad (India, China, Japan, Tunisia, Morocco, Algeria, United States, Germany, Great Britain)
- Participation in Intersolar international trade show held from 27-29 May, in Munich

PROJECTS

PROJECT	PARTICIPANTS	DESCRIPTION
GESCOOP	Cristopia, EDF, Euromed Marseille	This project involves setting up a service for companies that own an energy control process so as to increase, within a cooperative, the cuts in CO ₂ emissions generated by the processes and to negotiate the cuts on the emissions exchange market.
ALGOMICS	CEA Cadarache	Comprehensive studies of energy conversion and storage in microalgae.
STOCSOL	Giordano Industries, CEA Cadarache, CNRS Marseille, Cristopia	Developing a high-performance heat storage system using phase-change materials. This storage system will be combined with a solar heating system or sanitary hot water production system, making it possible to increase the percentage of solar power used for heating and hot water production.
SHAMASH	CNRS- Lov, Ifremer, CEA, Gepea, Cirad University Laboratory, Inria Sophia Antipolis, etc.	The focus of this project is on the production of high-calorie lipids by microalgae: species selection, studies on production processes, lipid purification and extraction.
SYMBIOSE	Naskeo Environnement	Methanogenesis-microalgae coupling: energy production in association with organic waste treatment and CO ₂ fixing.
ATG	Nheolis	Research and development on a new wind power concept.
ECO ÉNERGIES PALMBEACH	Siemens SA	PalmBeach hotel energy savings.
GEISER	Areva TA	Coupling a nuclear reactor with seawater desalination units operating on the multi-effect distillation (MED) and reverse osmosis (RO) principles.
ECOLUMEN	Resistex	Software measuring energy control and environmental impact in lighting installations.
PEPITE	Helion	Solar power and fuel-cell batteries for stable electrification.

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