



Forum for European-Australian Science and Technology cooperation

FP7 thematic focus – Energy

University of Melbourne – 19th November 2009

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Forum for European-Australian Science and Technology cooperation (FEAST)

- Information portal: www.feast.org
- Support helpdesk (European programs, FP7, COST, ...)
- National Contact Point (NCP):
Energy NCP
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RTD in Europe

European programs
(not only European Commission!)

Member states

Associated countries

7th Framework Programme (FP7)

European Science Foundation (ESF)

Eureka

EIT

National programs

National programs

Cooperation

Ideas

People

Capacities

Euratom

JRC

COST

10 themes
5: Energy

ERC

Marie Curie

FP7

- 2007-2013
- €53.2 billion
- 60% in cooperative RTD projects
- Member states (27) + Associated Countries + ICPC + Australia

European opportunities grid

Objective	Training	Career development	Build/maintain networks	Collaborative projects	Strategic planning
Postgraduate student	MC ITN Erasmus Mundus				
Postdoc	Marie Curie fellowships	Marie Curie fellowships			
Junior lecturer		ERC	MC IRSES COST	FP7 Cooperation Bilateral projects	
Group leader		ERC	MC IRSES COST	FP7 Cooperation Bilateral projects	
Research management					FP7 NoE FP7 large IP
Policy community					FP7 capacities ERANET

Understanding FP7 projects

- FP projects: cordis.europa.eu/search/index.cfm
- Projects with Australia: www.feast.org/projects
- Become an evaluator for FP7:
 - Register on cordis.europa.eu/emmfp7.
 - The Commission draws on a wide pool of evaluators (*circa* 50,000 in FP6).
 - The Commission will invite individuals on a call-by-call basis. The evaluators are selected against expertise and experience criteria. Geography, gender and rotation are also considered (replace ¼ each year).
 - Typically an evaluator will review 6–8 proposals remotely and then spend a couple of days in Brussels.
 - Some evaluators will participate in “hearings” with the consortia. Travel and subsistence are reimbursed with a €450 honorarium per day. The name of the evaluators are published after the evaluations.

FP7 general rules of participation

- European countries = MS + AC.
- AU participation (Rules for participation, Article 11): third country with S&T agreement.
- No funding to third countries (except ICPC), including Australia. Exceptions:
 - The contribution of Australia is essential for carrying out the indirect action;
 - Provision is made in the specific or Work Programmes;
 - Provided for in a bilateral S&T agreement or any other arrangement between the EU and the country in which the legal entity is established.
- Grant agreement (unique for FP7).

FP7 funding schemes

- Collaborative Project (CP)
 - Objective driven research projects
 - Research & demonstration activities (dissemination, training)
- Network of Excellence (NoE)
 - Research institutions combine and functionally integrate some of their activities and capacities, 'virtual centre of research'
 - Joint Programme of Activities
- CSA
 - Funding: 100%, no funding of research
 - Coordinating (CA)
 - 3 entities from 3 different MS or AC
 - Promote and support networking, joint initiatives, training, exchange, expert groups
 - Supporting (SA, SSA in FP6)
 - 1 entity
 - Support implementation of FP, prepare for future Community research

How to participate in FP7

- Work Programme (Y-1.5+)
- Calls published on cordis.europa.eu/calls
- Submission by the coordinator on the EPSS system:
<https://www.epss-fp7.org/epss/>
- Project structured in Work Packages,
- Eligible costs for Australian partners requested in the application: travel and research (plus indirect costs or oncosts)
- Evaluation Summary Report (ESR)
- Consortium Agreement signed among partners, important to IPR (foreground in consortium)
- Negotiation between the EC and the coordinator
- **Start (Y)**
- Contractual issues (Y+2+6)
- Lower contractual compliance: special clauses in the Grant Agreement.

How to participate... continued

- When applying, seek support from:
 - Europe adviser office
 - Research office and services
 - FEAST (NCP), www.feast.org/fp7/ncp
- 60% of Australians in FP7 projects have been misinformed by European coordinators

Selecting a consortium

- European coordinator and leadership.
- Track record in FP applications.
- Funding limits indicated for each topic in the Work Programme are eligibility criteria.
- Balance consortium between big/old member states and new member states.

Energy objective in FP7

- *Adapting the current energy system into a more sustainable one, less dependent on imported fuels and based on a diverse mix of energy sources, in particular renewables, energy carriers and non polluting sources; enhancing energy efficiency, including by rationalising use and storage of energy; addressing the pressing challenges of security of supply and climate change, whilst increasing the competitiveness of Europe's industries.*

Overarching activities

- Activity 1: Hydrogen and Fuel Cells
- Activity 2: Renewable Electricity Generation
- Activity 3: Renewable Fuel Production
- Activity 4: Renewables for Heating and Cooling
- Activity 5: CO₂ Capture and Storage Technologies for Zero Emission Power Generation
- Activity 6: Clean Coal Technologies
- Activity 7: Smart Energy Networks
- Activity 8: Energy Efficiency and Savings
- Activity 9: Knowledge for Energy Policy Making
- Activity 10: Horizontal Programme

Activity 1: Hydrogen and Fuel Cells

- Implemented by the Fuel Cells and Hydrogen Joint Technology Initiative (FCH JTI).
- JTI is an industry led public private partnership which will define and manage a strategic, target-oriented R&D program.
- Content covers fundamental, industrial and applied research as well as demonstration and relevant cross-cutting activities.
- ec.europa.eu/research/fch

Activity 2: Renewable Electricity Generation

- **Rationale:** *RD&D of technologies for electricity production from renewables, suited to different regional/economic/technical conditions.*
- **2.1: Photovoltaics**
 - Further development of very thin wafer based c-Si photovoltaics.
 - Development of novel materials, device structures and fabrication methods suitable for thin film solar cells and TCOs including organic photovoltaics. *Joint call with India.*
 - Development of new concentrator modules and field performance evaluation of Concentrated PV systems. *Joint call with India.*
- **2.2: Biomass**
- **2.3: Wind**
 - Cross-sectoral approach to the development of very large offshore wind turbines.
 - Support to the coordination of stakeholders' activities in the field of wind energy.
- **2.4: Geothermal**
- **2.5: Concentrated Solar Power**
 - Dry-cooling methods for multi-MW sized concentrated solar power plants.
 - Main CSP components for high-temperature operation.
 - Small scale steam engine powered by Linear Fresnel Reflector (LFR) system- Development of prototype. *Joint call with India.*
- **2.6: Ocean** (see 10.1)
- **2.7: Hydro**
- **2.8: Innovative Integration of Renewable Energy Supply and Energy Efficiency in Large Buildings and/or Concerto Communities**
- **2.9: Cross-Cutting Issues**
 - Demonstration of innovative multi-purpose solar power plant.

Activity 3: Renewable Fuel Production

- **Rationale:** *RD&D of fuel production systems & conversion technologies for production and supply chains of fuels from biomass. Emphasis on new types of biofuels for transport & electricity and on new production, storage and distribution for existing biofuels.*
- **3.1: First Generation Biofuel from Biomass**
- **3.2: Second Generation Fuel from Biomass**
- **3.3: Biorefinery**
- **3.4: Biofuels from Energy Crops**
 - Biofuels from algae.
- **3.5: Alternative Routes to Renewable Fuel Production**
 - Liquid or gaseous fuel production using direct biological conversion of solar radiation.
- **3.6: Biofuel used in Transport**
- **3.7: Cross-Cutting Issues**

Activity 4: Renewables for Heating and Cooling

- **Rationale:** *RD&D of technologies and devices for substantial cost reductions, increased efficiencies, reduce environmental impacts.*
- **4.1: Low/Medium Temperature Solar Thermal Energy**
- **4.2: Biomass**
 - Demonstration of a new generation of boilers and stoves.
- **4.3: Geothermal Energy**
- **4.4: Innovative Integration of Renewable Energy Supply and Energy Efficiency in Large Buildings and/or Concerto Communities**
- **4.5: Cross-Cutting Issues**
 - Support to the coordination of stakeholders' activities in Renewables for Heating and Cooling.

Activity 5: CO₂ Capture and Storage Technologies for Zero Emission Power Generation

- **Rationale:** *RD&D of technologies to reduce environmental impact of power and steam generation plants, based on CO₂ capture and storage technologies, in particular underground storage.*
- **5.1: CO₂ Capture**
 - Demonstration of advanced CO₂ capture concepts.
- **5.2: CO₂ Storage**
 - CCS – storage site characterisation.
 - Trans-national cooperation and networking in the field of geological storage of CO₂.
 - CCS – site abandonment.

Activity 6: Clean Coal Technologies

- **Rationale:** *RD&D to improve efficiency, reliability and cost of coal fired power plants. Also includes the production of secondary energy carriers (including hydrogen). 'Clean coal': a sustainable solid hydrocarbon value chain with a focus on efficient and clean coal utilization.*
- **6.1: Conversion Technologies for Zero Emission Power Generation**
 - Efficiency Improvement of Oxygen-based combustion.
- **6.2: Coal-Based Poly-Generation**
- **6.3: Cross-Cutting Issues**
 - Extending the value chain for GHG emissions. *With Activity 5.*

Activity 7: Smart Energy Networks

- **Rationale:** *Facilitate the transition to a more sustainable energy system. Increase the efficiency, flexibility, safety, reliability and quality of the European electricity and gas systems and networks.*
- **7.1: Development of Inter-Active Distribution Energy Networks**
 - Large-scale demonstration of smart electricity distribution networks with distributed generation and active customer participation.
- **7.2: Pan-European Energy Networks**
- **7.3: Cross-Cutting Issues and Technologies**
 - Energy storage systems for power distribution networks.

Activity 8: Energy Efficiency and Savings

- **Rationale:** *Research, optimisation, validation and demonstration of new concepts. Optimisation of proved and new concepts and technologies for buildings, transport, services, and industry.*
- **8.1: Efficient Energy use in the Manufacturing Industry and Building Sector**
 - Valorisation of low temperature heat.
 - Demonstration of Energy Efficiency through Retrofitting of Buildings.
- **8.2: High Efficiency Poly-Generation**
- **8.3: Large-Scale Integration of Renewable Energy Supply and Energy Efficiency in Buildings: Eco-Buildings**
- **8.4: Innovative Integration of Renewable Energy Supply and Energy Efficiency in Large Communities: Concerto**
- **8.5: Innovative Strategies for Clean Urban Transport: Civitas-Plus**
- **8.6: Socio-Economics Research and Innovation**
- **8.7: Thematic Promotion and Dissemination**

Activity 9: Knowledge for Energy Policy Making

- **Rationale:** *Tools, methods and models to assess the main economic and social issues related to energy technologies.*
- **9.1: Knowledge Tools for Energy-Related Policy Making**
- **9.2: Scientific Support to Policy**

Activity 10: Horizontal Programme

- **Rationale:** *Topics that have a horizontal character not linked to any particular technology.*
- **10.1 The Oceans of Tomorrow – Joining Research Forces to Meet Challenges in Ocean Management**
 - Quantification of climate change impacts on economic sectors in the Arctic.
 - Vectors of changes in ocean and seas marine life, impact on economic sectors.
 - Sub-seabed carbon storage and the marine environment.
- **10.2: Future Emerging Technologies for Energy Applications (FET)**
 - Materials, technologies and processes for sustainable automotive electrochemical storage applications.

Energy call FP7-Energy-2010-1

- Deadline 15th October 2009 – **closed**
- €54 million budget
- Renewable Electricity Generation (Activity 2)
 - 2.1: Photovoltaics
 - Further development of very thin wafer based c-Si photovoltaics.
 - 2.3: Wind
 - Cross-sectoral approach to the development of very large offshore wind turbines.
 - 2.5: Concentrated Solar Power
 - Dry-cooling methods for multi-MW sized concentrated solar power plants.
 - Main CSP components for high-temperature operation.
- Renewable Fuel Production (Activity 3)
 - 3.5: Alternative Routes to Renewable Fuel Production
 - Liquid or gaseous fuel production using direct biological conversion of solar radiation.

The participation of top class research groups from USA and Japan could maximise the impact of this precompetitive topic.

- CO₂ Capture and Storage Technologies for Zero Emission Power Generation (Activity 5)
 - 5.1: CO₂ Capture
 - Demonstration of advanced CO₂ capture concepts.
 - 5.2: CO₂ Storage
 - CCS – storage site characterisation.
 - Trans-national cooperation and networking in the field of geological storage of CO₂.
 - CCS – site abandonment.
- Smart Energy Networks (Activity 7)
 - 7.3: Cross-Cutting Issues and Technologies
 - Energy storage systems for power distribution networks.
- Energy Efficiency and Savings (Activity 8)
 - 8.1: Efficient Energy Use in the Manufacturing Industry and Building Sector
 - Valorisation of low temperature heat.

The active participation of relevant partners from the Carbon Sequestration Leadership Forum, in particular the USA, could add to the scientific and/or technological excellence of the project(s) and/or lead to an increased impact of the research to be undertaken.

Energy call FP7-Energy-2010-2

- Deadline 4th March 2010 – **open**
- €126.4 million budget
- Renewable Electricity Generation (Activity 2)
 - 2.3: Wind
 - Support to the coordination of stakeholders' activities in the field of wind energy.
Up to one project might be funded.
 - 2.9: Cross-Cutting Issues
 - Demonstration of innovating multipurpose solar plants.
Up to two projects may be supported.
- Renewable Fuel Production (Activity 3)
 - 3.4: New Energy Crops
 - Biofuels from algae.

- Renewables for Heating and Cooling (Activity 4)

- 4.2: Biomass

- Demonstration of a new generation of boilers and stoves.

- Strong weight will be put on convincing market deployment strategies. The quality of the market deployment plan will be an important element in the evaluation. Up to three projects will be supported.

- 4.5: Cross-Cutting Issues

- Support to the coordination of stakeholders' activities in Renewables for Heating and Cooling.

- Up to one project may be funded.

- Clean Coal Technologies (Activity 6)

- 6.1: Conversion Technologies for Zero Emission Power Generation

- Efficiency Improvement of Oxygen-based combustion.

- Cross-Cutting Issues (Activities 5 & 6)

- Cross-Cutting and Regulatory Issues

- Extending the value chain for GHG emissions other than CO₂.

- The active participation of partners from emerging economies and the demonstration of the technologies in these countries would be highly beneficial and will likely increase the impact of the project. It is envisaged that a maximum of one project could be funded under this topic.

- Smart Energy Networks (Activity 7)
 - 7.1: Development of Inter-Active Distribution Energy Networks
 - Large scale demonstration of smart distribution networks with distributed generation and active customer participation.
Up to three projects may be funded.

Energy call FP7-Energy-2010-FET

- Deadline 15th October 2009 – **closed**
- €18 million budget
- Horizontal Programme (Activity 10)
 - Future Emerging Technologies for Energy applications (FET).

Energy call FP7-Energy-2010-India

- Deadline 30th November 2009 – **open**
- €5 million budget
- Renewable Electricity Generation (Activity 2)
 - 2.1: Photovoltaics
 - Development of novel materials, device structures and fabrication methods suitable for thin film solar cells and TCOs including organic photovoltaics.
 - Development of new concentrator modules and field performance evaluation of Concentrated PV systems.
 - 2.5: Concentrated Solar Power
 - Small scale steam engine powered by Linear Fresnel Reflector (LFR) system. Development of prototype.

The active participation of relevant industrial partners and industrial research centres as well as the exchange of researchers between European and Indian participants are deemed necessary for achieving the expected impact. Up to three projects will be supported under this call.

“Ocean of Tomorrow” call FP7-Ocean-2010

- Deadline 14th January 2010 – open
- €34 million budget (€6 million from Energy)
- Joining research forces to meet challenges in ocean management
 - Quantification of climate change impacts on economic sectors in the Arctic.
 - Vectors of changes in marine life, impact on economic sectors.
 - Sub-seabed carbon storage and the marine environment.

The participation of industrial partners operating – or planning to operate – sub-seabed CO₂ storage sites is crucial to the implementation of the project. Because sub-seabed carbon storage is a global issue, the participation of one or several partners (funded under their national budget) from either Japan, Australia or the USA would maximise the impact of the project.

“Energy Efficient Buildings” call FP7-2010-NMP-ENV-Energy-ICT-EeB

- Deadline 3rd November 2009 – **closed**
- €65 million budget (€15 million from Energy)
- Demonstration of Energy Efficiency through Retrofitting of Buildings.

“Green Cars” call FP7-2010-GC-Electrochemical-Storage

- Deadline 14th January 2010 – open
- €25 million budget (€5 million from Energy)
- Public-Private Partnership
 - Materials, technologies and processes for sustainable automotive electrochemical storage applications.

Euratom (European Atomic Energy Community)

- Official page: www.euratom.org
- Euratom calls:
cordis.europa.eu/fp7/dc/?fuseaction=UserSite.EuratomCallsPage
(current call “Nuclear Fission and Radiation Protection” FP7-Fission-2010, Deadline 8th April 2010)

Further Information

- Official FP7 Energy page:
cordis.europa.eu/fp7/energy
- FEAST information about FP7:
www.feast.org/fp7
- FP7 Energy calls:
cordis.europa.eu/fp7/dc/?fuseaction=UserSite.FP7CallsPage#Energy
- Contact FEAST: info@feast.org