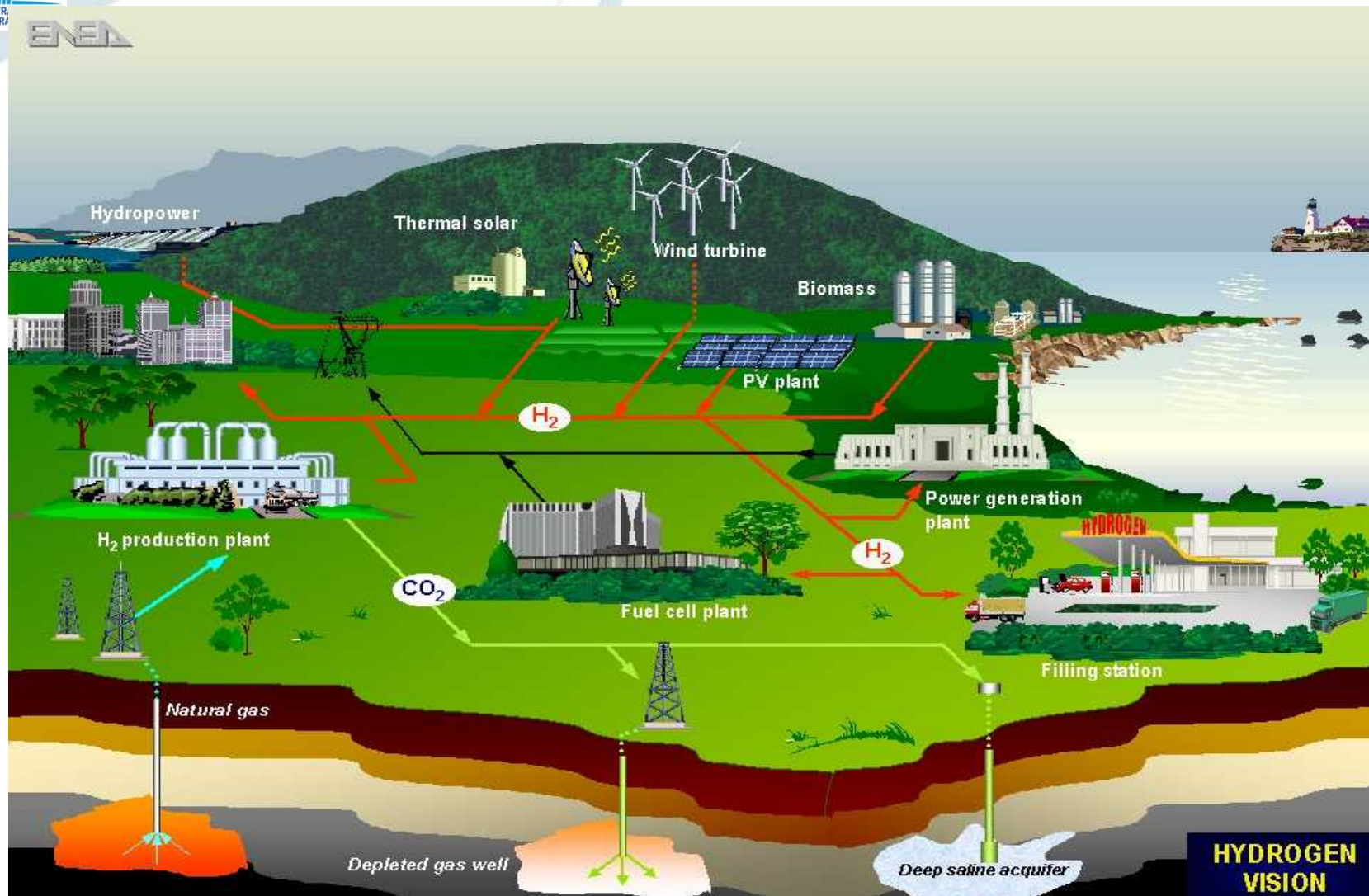




FP7 Energy Programme

1st Call Topics

Energy future





FP7 First Calls

Launch 22 Dec 2006 Deadline 3 May 2007	DG RTD Call FP7-ENERGY-2007-1-RTD Budget 109.3 M€ for 2007 (& 35 M€ for 2008?)
Launch 22 Dec 2006 Deadline 3 May 2007	DG TREN Call FP7-ENERGY-2007-2-TREN Budget 128 M€ for 2007
Launch 22 Dec 2006 Deadline July 2007	ERA-NET Joint Call FP7-ERANET-2007-RTD (Budget 7.5 M€ for 2008)



Renewables for heating and cooling

Technologies to increase efficiencies and drive down the costs of active and passive heating and cooling from renewable energy sources, ensuring their use in different regional conditions (e.g. district/dedicated space heating and cooling, building integration, energy storage)

Overall goal for 2010
12% of renewable energy sources in the energy mix



Renewables for Heating and Cooling

TREN Call

Topic code	Title	Funding scheme
4.1.1	Collector design and components	Collaborative
4.1.2	Small scale thermal cooling units	Collaborative
4.1.3	Small distributed systems for seawater desalination	Collaborative
4.1.4	Large scale systems for industrial heat processes	Collaborative
4.3.1	Improved ground source heat pumps	Collaborative
4.3.2	Improved underground systems	Collaborative
4.4.1	Advanced compact storage systems	Collaborative



Renewable electricity generation

Technologies to increase overall conversion efficiency, cost efficiency and reliability, driving down the cost of electricity production from indigenous renewable energy sources, including biodegradable waste, and the development and the demonstration of technologies suited to different regional conditions.

Goal for 2010

21% of green electricity



Renewable Electricity Generation RTD Call

Topic code	Title	Funding scheme
2.1.1	Intermediate band (IB) materials and cells for PV	Small collaborative
2.1.2	Dye-sensitised PV solar cells	Small collaborative
2.1.3	Concentrating photovoltaics: cells, optics, modules	Large collaborative
2.1.4	Research for binary thin-film photovoltaics	Small collaborative
2.1.5	Environmental aspects of photovoltaics	Support action
2.2.1	Advanced gas cleaning technologies for biomass	Small collaborative
2.2.2	Innovative technologies for efficient electricity production in biomass-fired IGCC	Small collaborative
2.2.3	New and improved slagging and corrosion control technologies for large-scale biomass co-firing processes	Small collaborative



Renewable Electricity Generation RTD Call

Topic code	Title	Funding scheme
2.3.1	Development of components and systems for turbines and wind farms	Large collaborative
2.3.2	External conditions, resource assessment and forecasting for wind energy	Small collaborative
2.3.3	Testing, standards and certification for wind energy systems	Small collaborative
2.4.1	Understanding and Mitigation of Induced Seismicity Associated with Geothermal Field Development	Small collaborative
2.5.1	Key components for CSP	Small collaborative
2.5.2	Using CSP for water desalination (Specific International Cooperation Action)	Support action



Renewable Electricity Generation RTD Call

Topic code	Title	Funding scheme
2.6.1	New components and concepts for ocean energy converters	Small collaborative
2.6.2	A strategy for ocean energy	Coordination action
2.6.3	Pre-normative research for ocean energy	Small collaborative
2.7.1	New or improved hydro components and concepts	Small collaborative
2.7.2	A strategy for hydropower	Coordination action
2.8.1	Solar irradiation resource assessment and forecasting	Support action



Renewable Electricity Generation TREN Call

Topic code	Title	Funding scheme
2.1.7	Secure, reliable and affordable supply of feedstock for the PV industry	Support action
2.1.8	Improved production equipment and cost reduction	Collaborative
2.1.9	Innovative/improved PV manufacturing processes	Collaborative
2.1.10	Development and demonstration of standardized building components	Collaborative
2.1.11	Multiple benefits of PV systems	Collaborative



Renewable Electricity Generation TREN Call

Topic code	Title	Funding scheme
2.2.4	Large-scale co-firing	Collaborative
2.2.5	Novel solid biofuels for electricity generation	Collaborative
2.2.6	High-efficiency medium-to-large scale electricity generation from biomass	Collaborative
2.3.4	Demonstration of large scale systems for on-and off-shore wind farms	Collaborative
2.3.5	Integration of wind power into the European power system	Collaborative
2.3.6	Wind mapping for offshore applications	Collaborative
2.5.3	Low cost, high efficiency daily storage systems	Collaborative
2.5.4	Improve the environmental profile of the CSP installations	Collaborative
2.5.5	CSP: Innovative heat transfer concepts	Collaborative
2.5.6	Intermediate size, lower concentration ratio CSP systems	Collaborative



Renewable fuel production

Integrated fuel production systems and conversion technologies: to develop and drive down the unit cost of solid, liquid and gaseous (including hydrogen) fuels produced from renewable energy sources including biodegradable waste, aiming at the cost-effective production, storage and use of carbon-neutral fuels, in particular biofuels for transport and electricity generation.

Goal for 2010

5.75% of alternative transport fuel



Renewable Fuel Production RTD Call

Topic code	Title	Funding scheme
3.2.1	Pre-treatment of lignocellulosic biomass for ethanol production	Small collaborative
3.2.2	New and advanced technologies for hydrolysis and/or fermentation of lignocellulosic biomass	Small collaborative
3.2.3	High purity syngas cleaning technologies for biofuels	Small collaborative
3.2.4	Biological conversion of syngas into liquid biofuels	Small collaborative
3.2.7	Identifying research needs and technological opportunities for biofuels production in Latin America (Specific International Cooperation Action)	Support action



Renewable Fuel Production RTD Call

Topic code	Title	Funding scheme
3.3.1	Forest-based biorefinery	Large collaborative
3.3.2	New uses for glycerine in biorefineries	Small collaborative
3.3.3	Developing biorefinery concepts	Support action
3.5.1	Fuel production using solar radiation (Future and Emerging Technologies topic)	Small collaborative
3.7.1	Harmonisation of biomass resource assessment	Coordination action
3.7.2	Marine biomass	Support action



Renewable Fuel Production TREN Call

Topic code	Title	Funding scheme
3.1.1	Bioethanol from sugar and starch crops	Collaborative
3.1.2	Biodiesel from oil crops, animal tallow and used cooking oils	Collaborative
3.2.5	Synthetic biofuels via gasification	Collaborative
3.2.6	Hydrogenation of oils and fats	Collaborative
3.6.1	Demonstration of liquid and gaseous biofuels use in transport/ vehicles	Collaborative
3.7.3	Standardisation and sustainability issues	Support action
3.7.4	Promotion and dissemination	Support action



Hydrogen and fuel cells

Transport, stationary and portable applications

Critical materials, processes and emerging technologies

Fundamental and applied research and technological development

Large-scale demonstration (“lighthouse”) projects

Hydrogen and Fuel Cell Technology Platform
Possible Joint Technology Initiative



Hydrogen and Fuel Cells RTD Call

Topic code	Title	Funding scheme
1.1.1	Basic research for materials and processes for Polymer Electrolyte Membrane Fuel Cells (PEMFC)	Small collaborative
1.1.2	Basic research on materials and processes for High Temperature Fuel Cells (SOFC & MCFC)	Small collaborative
1.1.3	Innovative concepts for fuel cells (Future and Emerging Technologies topic)	Small collaborative
1.2.1	New materials and processes for advanced electrolysers	Small collaborative
1.2.2	New materials and processes for advanced multi-fuel processors	Small collaborative
1.2.3	Advanced Materials for High Temperature thermo-chemical processes	Small collaborative
1.2.4	Novel nanostructured materials for hydrogen storage	Small collaborative
1.3.1	Pre-normative research to support EU and international regulatory activities	Small collaborative



CO₂ capture and storage technologies for zero emission power generation

Fossil fuels in World Primary Energy 80% now, 78-82% (2030) (IEA)

Aim: reduce adverse environmental impacts of fossil fuel use

Highly efficient power and steam generation with near zero emissions

Efficient and reliable CO₂ capture and storage technologies:
Particularly underground storage

Decrease cost to <20€/tonne

Capture rates above 90%

Prove the long-term stability, safety & reliability of CO₂ storage



CO2 Capture and Storage RTD Call

Topic code	Title	Funding scheme
5.1.1	Advanced pre-combustion capture techniques	Large collaborative
5.1.2	Fluid bed based capture techniques	Small collaborative
5.1.3	Advanced separation techniques	Small collaborative
5.1.4	Separation techniques in gaseous fuel power generation	Small collaborative
5.2.1	Development of a suitable methodology for the qualification of deep saline aquifers for CO2 storage	Large collaborative



Clean coal technologies

Coal share of World Primary Energy

~25% now, ~20-25% in 2030 (IEA scenarios)

Development and demonstration of clean coal & other solid fuel conversion technologies to:

significantly increase plant efficiency and reliability

minimise pollutant emissions

reduce overall costs

also produce secondary energy carriers (including H₂) and liquid or gaseous fuels

Complementary to CO₂ capture and storage technologies.



Clean coal technologies

TREN Call

Topic code	Title	Funding scheme
6.1.1	Solid fuel gasification development – improvement of gasifier technologies	Collaborative
6.2.1	Poly-generation concepts for coal fired power plants	Collaborative



Cross-cutting actions CCS - Clean Coal RTD Call

Topic code	Title	Funding scheme
5+6.1.1	Feasibility study and development of an integrated solution for a large scale zero emission fossil fuel power plant	Large collaborative
5+6.2.1	Support to regulatory activities for CO ₂ capture and storage	Support action
5+6.2.3	Socio-economic assessment of pathways for the deployment of CCS in Europe	Support action
5+6.2.6	Support to international collaboration in zero emission power generation (Specific International Cooperation Action)	Support action



Cross-cutting actions CCS - Clean Coal TREN Call

Topic code	Title	Funding scheme
5+6.2.2	Support to regulatory activities for zero emission power generation	Support action
5+6.2.4	Initiating a CO ₂ value chain in the energy sector using early opportunities	Collaborative
5+6.2.5	Extending the value chain for GHG emissions other than CO ₂ associated with coal production and use	Collaborative



Smart energy networks

To increase the efficiency, flexibility, safety and reliability of the more integrated European electricity and gas networks

Electricity:

Interactive customers/operators network

Large scale integration of RES

Distributed generation: fuel cells, micro-turbines

Innovative ICT solutions, RES storage, power electronics &

High Temperature Superconducting devices

Gas:

Intelligent and efficient gas transport and distribution

Integration of RES technologies



Smart Energy Networks RTD Call

Topic code	Title	Funding scheme
7.1.1	Develop and validate innovative control strategies and network architectures for active networks with large-scale penetration of renewables sources and distributed generation	Large collaborative
7.1.2	Develop new tools to simulate smart distribution networks	Small collaborative
7.2.1	Simulation and state estimation of smart electricity transmission networks	Large collaborative
7.3.1	Electricity network assets management	Coordination action
7.3.2	The value of innovative storage solutions for smart networks	Small collaborative



Smart Energy Networks TREN Call

Topic code	Title	Funding scheme
7.3.4	Analysis and scenarios of energy infrastructure evolution	Collaborative
7.3.5	More efficient integration of renewable energy into future infrastructures	Collaborative



Energy efficiency and savings

Vast potential to reduce energy demand at low cost through energy savings & improved energy efficiency

New concepts and technologies for optimising community energy systems for buildings, transport, services and industry

Eco-buildings, minimum climate impact buildings

Renewable energy co-generation and poly-generation

Integrated demand management in cities & communities

Large-scale demonstration plus innovative R&D on specific technologies



Energy Efficiency and Savings TREN Call

Topic code	Title	Funding scheme
8.1.1	Manufacturing industry: wastes and waste heat recovery and transfer	Collaborative
8.1.2	Manufacturing industry: SMEs energy innovation	Collaborative
8.1.3	Manufacturing industry: Innovative energy efficient manufacturing processes	Collaborative
8.2.1	High efficiency poly-generation - applications with renewable energies	Collaborative
8.5.1	Testing innovative strategies for clean urban transport	Collaborative
8.6.1	Support Action for evaluation and monitoring CIVITAS-Plus	Support action



Knowledge for energy policy making

Development of tools, methods and models to assess the main economic and social issues related to energy technologies

Databases and scenarios

Impact of technological progress on EU energy policies
Impact of energy policies and technologies on security of supply, environment, society and competitiveness



Knowledge for Energy Policy Making RTD Call

Topic code	Title	Funding scheme
9.1.1	Energy security of supply	Small collaborative
9.1.2	Energy behavioural changes	Small collaborative
9.1.3	Energy technological foresight and scenario development	Small collaborative
9.1.4	Energy technology transfer (Specific International Cooperation Action)	Small collaborative (SICA)
9.2.1	Energy foresight network	Coordination action



Knowledge for Energy Policy Making TREN Call

Topic code	Title	Funding scheme
9.2.2	Energy technology watch	Support action



Horizontal Programme Actions

European Research Area (ERA) and programme management and coordination

Coordination of FP7 Energy and Member States' and Associated Countries' initiatives using the ERA NET scheme

Trans-national co-operation among NCPs

Monitoring the expected impacts of FP7 Energy projects



Horizontal Programme Actions RTD Call

Topic code	Title	Funding scheme
10.0.2	Trans-national co-operation among NCPs	Coordination action
10.0.4	Development of a methodology for monitoring the expected impacts of FP7 Energy projects	Support action



ERA NET Call

Topic code	Title	Funding scheme
7.3.3	Stepping up the cooperation of national and regional research activities on Smart Energy Networks	Support action
10.0.1	Optimise EU action through a better coordination of the international cooperation initiatives of the EU and Member States	Support action
10.0.3	Fostering coordination between national and European energy RTD strategies and programmes	Support action



Other programmes where Energy proposals can be submitted

- **Transport, Nanotech, Biotech Themes**
- **CIP – Intelligent Energy for Europe**
- **RFCS Coal and Steel Programme**
 - Clean Coal, Carbon Capture and Storage
- **IDEAS Specific Programme**
 - European Research Council
 - Frontier research
- **PEOPLE Specific programme**
 - Marie Curie Fellowships and Networks
- **CAPACITIES Specific programme**
 - SMEs
 - Infrastructures
 - ERA NET