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FP7 – Energy

Priorities of
DG TREN

**EU-Russia cooperation
on energy research**

**Meeting of the
energy working group**

Moscow, 21.2.2007

Torsten Wöllert

DG TREN.A

**Delegation of the
European
Commission to
Russia**



Energy – key challenges

Global energy demand predicted to increase by 60% over the next 30 years

Finite nature of conventional oil and natural gas reserves

EU energy dependency could rise from 50% to 70% by 2030; volatility of oil prices and geopolitical instability

Over 90% of EU CO₂ emissions causing climate change are attributable to energy

Global energy investments of €12 trillion required up to 2030 – huge market potential, but EU under severe threat from global competitors



Cooperation specific programme – Energy theme - ten activities

Renewable electricity
generation DG RTD & TREN

Renewable fuel production
DG RTD & TREN

Renewables for heating and
cooling DG TREN

Smart energy networks
DG RTD & TREN

Knowledge for energy policy making
DG RTD & TREN

Horizontal programme actions DG RTD & TREN

Energy savings and energy
efficiency (incl. CONCERTO &
CIVITAS-Plus) DG TREN

CO₂ capture and storage for
zero emission power generation
DG RTD

Clean coal technologies
DG TREN

Hydrogen and fuel cells
DG RTD & TREN



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FP7

TREN

ENERGY
Call 2007



Renewable energy sources supported in FP7

	Biomass
	Hydro
	Geothermal
	Wind
	Photovoltaics
	Solar thermal
	Ocean



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 TREN Call

Topic code	Title	Funding scheme
Photovoltaics		<i>Pietro.Menna@ec.europa.eu</i>
2.1.7	Secure, reliable and affordable supply of feedstock for the PV industry	Coordination and Support Action (support type)
2.1.8	Improved production equipment and cost reduction	Collaborative project
2.1.9	Innovative/improved PV manufacturing processes	Collaborative project
2.1.10	Development and demonstration of standardized building components	Collaborative project
2.1.11	Multiple benefits of PV systems	Collaborative project



Renewable Electricity Generation TREN Call

Topic code	Title	Funding scheme
Biomass		<i>Andreas.Heinz@ec.europa.eu</i>
2.2.4	Large-scale co-firing	Collaborative project
2.2.5	Novel solid biofuels for electricity generation	Collaborative project
2.2.6	High-efficiency medium-to-large scale electricity generation from biomass	Collaborative project
Wind		<i>Roberto.Gambi@ec.europa.eu</i>
2.3.4	Demonstration of large scale systems for on- and off-shore wind farms	Collaborative project
2.3.5	Integration of wind power into the European power system	Collaborative project
2.3.6	Wind mapping for offshore applications	Collaborative project



Renewable Electricity Generation TREN Call

Topic code	Title	Funding scheme
Concentrated solar power		<i>Pietro.Menna@ec.europa.eu</i>
2.5.3	Low cost, high efficiency daily storage systems	Collaborative project
2.5.4	Improve the environmental profile of the CSP installations	Collaborative project
2.5.5	CSP: Innovative heat transfer concepts	Collaborative project
2.5.6	Intermediate size, lower concentration ratio CSP systems	Collaborative project



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 TREN Call

Topic code	Title	Funding scheme
1st generation fuel from biomass		<i>Kyriakos.Maniatis@ec.europa.eu</i>
3.1.1	Bioethanol from sugar and starch crops	Collaborative project
3.1.2	Biodiesel from oil crops, animal tallow and used cooking oils	Collaborative project
2nd generation fuel from biomass		<i>Kyriakos.Maniatis@ec.europa.eu</i>
3.2.5	Synthetic biofuels via gasification	Collaborative project
3.2.7	Hydrogenation of oils and fats	Collaborative project



Renewable Fuel Production TREN Call

Topic code	Title	Funding scheme
Biofuel use in transport		<i>Antonio.Tricas-Aizpun@ec.europa.eu</i>
3.6.1	Demonstration of liquid and gaseous biofuels use in transport/ vehicles	Collaborative project
Cross cutting issues		<i>Kyriakos.Maniatis@ec.europa.eu</i> <i>Jose.Fluxa@ec.europa.eu</i>
3.7.3	Standardisation and sustainability issues	Coordination and Support Action (support type)
3.7.4	Promotion and dissemination	Coordination and Support Action (support type)



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
Low/medium temperature solar thermal energy		<i>Jose.Riesgo@ec.europa.eu</i>
4.1.1	Collector design and components	Collaborative project
4.1.2	Small scale thermal cooling units	Collaborative project
4.1.3	Small distributed systems for seawater desalination	Collaborative project
4.1.4	Large scale systems for industrial heat processes	Collaborative project
Geothermal energy		<i>Elisa.Boelman@ec.europa.eu</i>
4.3.1	Improved ground source heat pumps	Collaborative project
4.3.2	Improved underground systems	Collaborative project



Renewables for Heating and Cooling TREN Call

Topic code	Title	Funding scheme
Cross cutting issues		<i>Jose.Riesgo@ec.europa.eu</i>
4.4.1	Advanced compact storage systems	Collaborative project



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
	Conversion technologies for zero emission power generation	<i>Thomas.Schneider@ec.europa.eu</i> <i>Kai.Tullius@ec.europa.eu</i>
6.1.1	Solid fuel gasification development – improvement of gasifier technologies	Collaborative project
	Coal based poly-generation	<i>Thomas.Schneider@ec.europa.eu</i> <i>Kai.Tullius@ec.europa.eu</i>
6.2.1	Poly-generation concepts for coal fired power plants	Collaborative project



Cross-cutting actions CCS – Clean Coal TREN Call

Topic code	Title	Funding scheme
Cross cutting and regulatory issues		<i>Thomas.Schneider@ec.europa.eu</i> <i>Kai.Tullius@ec.europa.eu</i>
5+6.2.2	Support to regulatory activities for zero emission power generation	Support Action (support type)
5+6.2.4	Initiating a CO2 value chain in the energy sector using early opportunities	Collaborative project
5+6.2.5	Extending the value chain for GHG emissions other than CO2 associated with coal production and use	Collaborative project



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 TREN Call

Topic code	Title	Funding scheme
Cross cutting issues		<i>Wolfgang.Kerner@ec.europa.eu</i> <i>Mark.Vangampelaere@ec.europa.eu</i>
7.3.4	Analysis and scenarios of energy infrastructure evolution	Collaborative project
7.3.5	More efficient integration of renewable energy into future infrastructures	Collaborative project



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
Efficient energy use in the manufacturing industry		<i>Kyriakos.Maniatis@ec.europa.eu</i>
8.1.1	Manufacturing industry: wastes and waste heat recovery and transfer	Collaborative project
8.1.2	Manufacturing industry: SMEs energy innovation	Collaborative project
8.1.3	Manufacturing industry: Innovative energy efficient manufacturing processes	Collaborative project
High-efficiency poly-generation		<i>Kyriakos.Maniatis@ec.europa.eu</i>
8.2.1	High efficiency poly-generation - applications with renewable energies	Collaborative project



Energy Efficiency and Savings

Topic code	Title	Funding scheme
CIVITAS Plus		<i>Maria.Alfayate@ec.europa.eu</i>
8.5.1	Testing innovative strategies for clean urban transport – CIVITAS plus Specific Guidance document!	Collaborative project
Socio-economic research & innovation		<i>Maria.Alfayate@ec.europa.eu</i>
8.6.1	Support action for evaluation and monitoring CIVITAS-Plus	Coordination and Support Action (support type)
Thematic promotion and dissemination		<i>Jose.Fluxa@ec.europa.eu</i> <i>Maria.Alfayate@ec.europa.eu</i>
8.7.1	Promotion and dissemination	Coordination and Support Action (support type)
8.7.2	Support action for coordination and dissemination CIVITAS-Plus	Coordination and Support Action (support type)



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 TREN Call

Topic code	Title	Funding scheme
Scientific support to policy		<i>Inigo.Sabater@ec.europa.eu</i>
9.2.2	Energy technology watch	Coordination and support action (support type)



2008 TREN Call

- Similar order/higher than 2007 call
- Indicative topics/areas
(indicative list only, depends also on success of 2007 call)
 - Energy 1: JTI on H2 and fuel cells to start in 2008?
 - Energy 2: RES-electricity incl. waste, ocean, hydro
 - Energy 3: RES-fuels possibly focussing on 2nd gen.
 - Energy 4: RES-heating/cooling incl. biomass
 - Energy 6: Clean coal incl. CTG, CTL
 - Energy 7: Smart Grids will be open
 - Energy 8: Energy efficiency incl. eco-buildings, poly-generation (fossil fuels), CONCERTO (?)
 - Energy 9/10: Studies



Staying Informed



Research Policy, Energy Research

http://ec.europa.eu/research/energy/index_en.htm
rtd-energy@ec.europa.eu

Energy Policy, Energy Research

http://ec.europa.eu/energy/index_en.html

Green Paper “A European Strategy for Sustainable,
Competitive and Secure Energy”

http://ec.europa.eu/energy/green-paper-energy/index_en.htm

Energy Package of 10 January 2007

http://ec.europa.eu/energy/energy_policy/index_en.htm

CONCERTO (FP6)

<http://www.concertoplus.eu/>

Competitiveness and Innovation Framework Programme
Intelligent Energy-Europe

http://ec.europa.eu/enterprise/enterprise_policy/cip/index_en.htm

http://ec.europa.eu/energy/intelligent/index_en.html



Intelligent Energy



**Thank you
for your
attention!**

**Directorate-General
for Transport and Energy**

**Delegation of the
European Commission to Russia**

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