



Sustainable Energy Systems



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New and Renewable Energy Sources
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Road map

Closing dates	Budget		Comments
	S. M.	M. L.	
18 March 2003	82M€	198M€	~ 65% for new instruments
December 2003	107M€	4M€ (*)	~ 65% for new instruments
December 2004			To be decided
December 2005			
Total	405M€	405M€	

(*) Specific Support Actions + Co-ordination Actions





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DG TREN

1st and 2nd Calls (2003)

First Call for Sustainable Energy Systems :

Identifier: ' FP6-2002-TREN-1 '

Publication date: 17 December 2002 Budget: € 82Mio

Closing Date(s):

Sustainable energy systems: 18 March 2003, 17.00pm

(Sustainable surface transport: 15 April 2003, 17.00pm)

Reference: Official Journal n° C315 of 17.12.2002

Second Call for Sustainable Energy Systems:

Publication : planned in June 2003 Budget: € 107 Mio

Closing Date : planned in December 2003





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Short and medium-term research areas / topics (405 M€)

- × **CLEAN ENERGY, IN PARTICULAR RENEWABLES**
 - × Cost effective supply
 - × Large scale integration

- × **ALTERNATIVE MOTOR FUELS**
 - × Biofuels, natural gas and H₂
 - × CIVITAS 2

- × **ENERGY SAVINGS AND ENERGY EFFICIENCY**
 - × Eco-buildings
 - × Polygeneration





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Clean energy, in particular renewable energy sources and their integration in the energy system including storage, distribution and use

Cost effective supply of renewable energies

To bring the next generation of more cost effective RES technology to the market place; urgent need to reduce costs

Large scale integration of renewable energy sources and energy efficiency

To achieve targets, to establish a significant number of high profile communities in which RES and RUE technologies are integrated into regional / local / municipal energy systems.





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Cost effective supply of RES (1st Call)

IP

- large innovative wind turbines & components; design tools
- low-cost photovoltaic with integrated DC -> AC inverters

STREP

- innovative biomass co-firing
- innovative wind turbines, components and design tools
- new generation of PV technologies / products
- geothermal energy

Co-ordinated Actions, Specific Support Actions : ALL





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Wind energy - IP

- Priority to large wind turbines and their design tools
- Electricity grid interfaces, load assumptions, meteorology issues - eg: short term output forecasting
- Demonstration of larger projects or clusters of innovative projects in different geographical areas (preferably with a substantial future market growth)
- Clusters of projects addressing complementary issues, and involving research, dissemination and educational activities





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Wind energy - STREP

- Traditional demonstrations of innovative technologies
- Innovative wind turbines, components & Design tools for reliable electricity generation at reduced cost
- Priorities include all innovative projects aiming to solve technical problems related to the wind sector





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Photovoltaics - IP

- **Innovative, lower cost photovoltaic modules with integrated inverter to feed power into the grid**
- **Meet requirements for integration into the grid and for ease / reliable module integration in the building**
- **Applicable to modules of different technologies from different suppliers**
- **Promote demand for green PV electricity - 22%target**





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Photovoltaics - STREP

- ***Transfer to industrial scale of a new generation of PV technologies / systems / products***
- ***Demonstrate cost efficient and innovative PV electricity production***
- **No RTD financing for installations of existing commercial products**
- ***Demonstrate competitive (turn-key) PV electricity services***





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Biomass co-firing - STREP

Aim: To promote the co-utilisation of Biomass & Waste with fossil fuels since this is the most effective way to reduce costs for the deployment of bioenergy applications

Proposal Characteristics

Fuel supply chain: should be described in detail

Technology: has to demonstrate clear innovation

Application: Market oriented





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Biomass co-firing - STREP specification

- **The call covers any type of Biomass & non-hazardous waste stream that is well defined and can be marketed.**
- **The call covers all conversion technologies (combustion, gasification, pyrolysis, anaerobic digestion).**
- **Proposals which are based on the combustion of pre-mixed solid BM&W with solid fuels are of secondary priority due to limited innovation.**
- **Preference will be given to large scale projects involving utilities under real market conditions. CHP applications are welcome as they maximise overall efficiency.**





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Geothermal - STREP for cost-effective supply

- **Electricity / CHP :**
Innovative
environmentally sustainable
cost competitive
- **Heating / Cooling**
(including ground coupled heat pumps)
Innovative
environmentally sustainable
cost competitive





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Cost effective supply of RES CA or SSP

- **Electricity, in particular from biomass and / or waste derived fuels, wind, photovoltaics and geothermal**
- **Heating and Cooling from solar, biomass or geothermal**
- **Production and processing of liquid and gaseous biofuels**





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Large scale RES integration - CA or SSP

Prepare for / complement future CONCERTO projects :

- **Measurement and management of RES electricity services in small scale (low voltage) applications**
- **Distributed electricity generation, management and storage in larger scale (medium / high voltage) grids**
- **Heating and cooling supplies, management, planning, storage**
- **Performance indicators and methodologies for RES and RUE management in local communities**





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2nd Call (2003)

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FOCUS ON “CONCERTO”





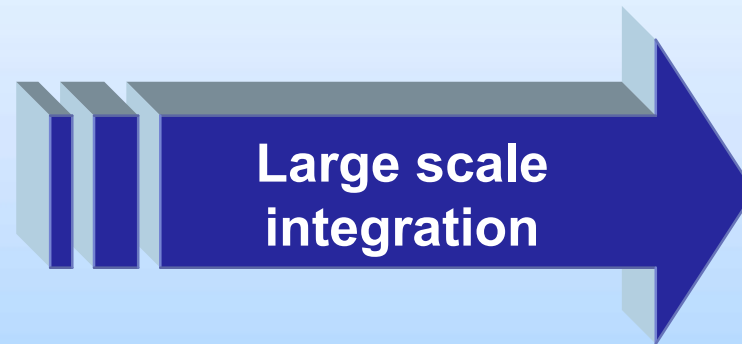
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Large scale integration of Renewable Energy with demand management **“CONCERTO”**

Innovative
Energy
Technologies



Communities

- × Renewable energy sources
- × Eco-buildings
- × Polygeneration





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CONCERTO

- **Demonstrate innovative technologies and innovative technology integration**
- **Applications involving local communities based in clearly defined geographical areas / zones**
- **Full research menu, including socio-economic**
- **RES based transport activities may be included**
- **Measurement and analysis of energy flows, as part of sustainable energy management systems**
- **Common performance indicators and methodology for analysis / measurement**





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CONCLUSIONS

- **Limited number of projects (strong competition)**
- **European dimension is important**
- **Cost reductions are vital for the RES sector**
- **Large scale integration of RES is a growing challenge**
- **Preparatory CA / SSA for Concerto in first call**

- **Technical officers are here today for questions**
- **Meetings will be held during 2003 for CONCERTO**
- **Lists available with contact details**





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Staying informed

- **EUROPA:**
http://www.europa.eu.int/comm/dgs/research/index_en.html
 - **6th Framework Programme (general):**
http://europa.eu.int/comm/research/fp6/index_en.html
 - **Energy research web site:**
http://europa.eu.int/comm/research/energy/index_en.html
 - **DG Energy and Transport web site:**
http://europa.eu.int/comm/energy/index_en.html
- **CORDIS:**
<http://www.cordis.lu/rtd2002/>
- **ManagEnergy** site (local/regional agencies, projects, partner search...) : <http://www.managenergy.net>
- enquiries: tren-fp6@cec.eu.int rtd-sustainable@cec.eu.int

