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**WORK PROGRAMME 2012**

**COOPERATION**

**THEME 5**

**ENERGY**

# Indicative budget for the Energy Theme of the 2012 work programme

Call/ activity	DG RTD EUR million	DG ENER EUR million
FP7-ENERGY-2012-1	<b>136,00</b>	
FP7-ENERGY-2012-2		81,00
FP7-ENERGY-SMARTCITIES-2012		40,00
FP7-ERANET-2012-RTD	<b>17,00</b>	
FP7-2012-NMP-ENV-ENERGY-ICT-EeB		35,00
FP7-KBBE-2012-6	<b>5,00</b>	
General Activities (see Annex 4)	<b>1,82</b>	2,53
<b>Total Other actions</b>	<b>4,38</b>	<b>2,43</b>
<b>Estimated total budget allocation</b>	<b>164,20</b>	<b>160,96</b>

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## 1. Renewable Energy Generation:

### ■ Photovoltaics:

- Reliable, cost-effective, highly performing PV systems (1)
- Demonstration of smart multifunctional PV modules (2)

### ■ Wind:

- Innovative wind conversion systems (10-20MW) for offshore applications (1)
- Demonstration of innovative designs to reduce fatigue loads and improve reliability of multi-MW turbines (2)

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## 1. Renewable Energy Generation (continued):

- Concentrated Solar Power:
  - Research, development and testing of solar dish systems (1)
  - Hybridisation of CSP with other energy sources (1)
- Ocean Energy:
  - Demonstration of first ocean energy farms (2)
- Cross-cutting Issues:
  - Power generation in the low temperature range (1)

## 2. Renewable Fuel Production:

- Second Generation Fuel from Biomass:
  - Biofuels from microalgae or macroalgae (1)
  - Development and testing of advanced sustainable bio-based fuels for air transport (1)
  - Pre-commercial industrial scale demonstration plant on lignocellulosic ethanol (2)
- Cross-cutting Issues:
  - Development of new or improved logistics for lignocellulosic biomass harvest, storage and transport (1)

## 3. Renewables for Heating and Cooling:

- Low/Medium Temperature Solar-Thermal Energy:
  - Research and development for medium temperature range solar collectors (100°-250°C) (1)

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4. CO<sub>2</sub> Capture and Storage Technologies for Zero Emission Power Generation:
- CO<sub>2</sub> Storage
    - Sizeable pilot tests for CO<sub>2</sub> geological storage (1)
    - Impact of the quality of CO<sub>2</sub> on transport and storage (1)
    - Pilot plant-scale demonstration of advanced post-combustion CO<sub>2</sub> capture processes with a view to integration in fossil fuel power plants (2)
    - Pilot plant-scale demonstration and integration of emerging and new combustion technologies (2)
  - Cross-cutting and Regulatory issues:
    - Support to the coordination of stakeholders' activities in the field of Zero Emission Energy Production (1)

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## 5. Smart Energy Networks:

- Development of Interactive Distribution Energy Networks:
  - Integration of variable distributed resources in distribution networks (1)
  - Enhancing electricity networks through use of distributed intelligence (1)
  - Empowering smart customers to participate in active demand and energy system efficiency (1)

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## 5. Smart Energy Networks (continued):

- Pan-European Energy Networks
  - Planning for European Electricity Highways to ensure the reliable delivery of renewable electricity and pan-European market integration (1)
  - Networking of national R&D and demonstration projects on smart metering infrastructure and data processing (1)
  - Facilitating the deployment of safe stationary batteries (1)
  - Support to the coordination of stakeholders activities in the field of Smart Grids (1)

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## 6. Energy Efficiency and Savings:

- Efficient energy use in the manufacturing industry and building sector:
  - Next generation heat pump technologies (1)
- Smart Cities and Communities:
  - Strategic sustainable planning and screening of city plans (SC)
  - Large scale systems for urban area heating and/or cooling supply (SC)
  - Demonstration of nearly Zero Energy Building Renovation for cities and districts (SC)

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## 7. Horizontal Programme Actions:

- ERA-NET:
  - ERA-NET Plus - Bioenergy Demonstrations of the European Industrial Bioenergy Initiative (EN-RTD)
  - ERA-NET on Solar Electricity: Implementation of the Solar Energy Industry Initiative (EN-RTD)
- Other Horizontal Actions:
  - Future Emerging Technologies (1)

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**Hans-Günther Schwarz**

**Abteilung Energie- und Umwelttechnologien**



*Bundesministerium  
für Verkehr,  
Innovation und Technologie*

**Tel.: +43 - 1 - 71162 - 652932**

**E-Mail: [hans-guenther.schwarz@bmvit.gv.at](mailto:hans-guenther.schwarz@bmvit.gv.at)**