

FP7 2012 ROADSHOW

NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES

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Overview of Presentation

- Approach for 2012
- Recovery Packages
- Key Enabling Technologies
- Specific Challenges
- Focus
- Theme Information
- Support Networks
- Mobility Programmes



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Approach to 2012

- Span the spectrum from enabling research, to applications and demonstration activities
- Focuses on smart and sustainable growth, for a greener industry, its three constituent activities being the tools rather than ends in themselves
- Supports the European Economic Recovery Plan through three Public-Private Partnerships (PPPs): 'Factories of the future', 'Energy efficient Buildings' and 'Green cars'
- Increasing emphasis on applications and longer-term research in key enabling technologies
- Increase of research funding




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Recovery Packages

- **Factories of the Future – Public-Private Partnership (FoF)**
 - Help EU manufacturers to adapt to global competitive pressures by increasing the technological base of EU manufacturing through the development and integration of the enabling technologies of the future, such as engineering technologies for adaptable machines and industrial processes, ICT, and advanced materials (EUR 1.2 billion)
- **Energy-efficient Buildings – Public-Private Partnership (EeB)**
 - Promote green technologies and the development of energy-efficient systems and materials in buildings with a view to reducing radically their energy consumption and CO₂ emissions (EUR 1 billion)
- **Green Cars – Public-Private Partnership (GC)**
 - Research on a broad range of technologies and smart energy infrastructures essential to achieve a breakthrough in the use of renewable and non-polluting energy sources, safety and traffic fluidity (EUR 1 billion)




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Key Enabling Technologies

- The shape and potential of industries worldwide will be transformed over the next 5 to 10 years
- The main driving force will be the deployment of key enabling technologies (KETs)
- Those nations and regions that master these technologies will be at the forefront of managing the shift to a low carbon, knowledge-based economy, which is a precondition for ensuring welfare, prosperity and security of its citizens
- Based on current global research and market trends the KETs have been identified
 - Nanotechnology
 - Micro- and nanoelectronics, including semiconductors
 - Smart industrial control
 - Photonics
 - Advanced Materials
 - Biotechnology




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Specific Challenges

- **Energy and Energy efficiency**
 - Activities inline with Strategic Energy Technology (SET) Plan
 - Energy Efficient Buildings
 - Green Cars
 - Complement activities of the Transport and Energy Themes
- **Environmental issues and sustainable development**
 - Complement activities of the Environment and FAFB Themes
- **Raw Materials**
 - Extraction and processing of raw materials; reduction of waste and recycling
- **Health and safety**
 - Nano safety, medicine and materials complementing the Health Theme
- **Factories of the Future**
 - Adapt to global competitive pressures by increasing the technological base




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Focus


- Particular attention to the involvement of industry
 - Increased from 35% in FP6 to 40% in FP7
- Strong support of SME participation
 - Currently around 23%
- Demonstration and validation activities receive increased attention, going beyond pilot implementations in industrial settings
- Enhance the use of project results and provides external assistance through the 'Exploitation Strategy and Innovation Consultants' (ESIC) service



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Theme Information

- Collaborative Projects:** Small or medium scale focused research projects and large scale integrating projects aimed more at research for applications and innovation
- SME-targeted collaborative Projects:** Outputs benefiting participating SMEs and the targeted SME dominated industrial communities
- DEMO-targeted collaborative Projects:** Special emphasis on demonstration activities, in order to prove the industrial viability of new technologies
- Coordination and Support Actions (CSA):** Relate to coordination, networking or supporting activities at European and international, national or regional level
- Specific International Co-operation Action (SICA):** Targeting collaborations with specific regions or countries




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Large-scale Integrating Collaborative Projects

- Deadline:** First stage - 8 November 2011
- Indicative budget:** EUR 110 million
- Minimum:** EUR 4 million

Activity / Area	Topics called Funding Schemes
Maximising the contribution of nanotechnology to sustainable development	NMP.2012.1.2-1 Nanotechnology solutions for in-situ soil and groundwater remediation NMP.2012.1.2-2 Development and phase-1 clinical trials of novel therapeutic nanotechnology-enabled systems for the diagnosis and treatment of atherosclerosis
Ensuring the safety of Nanotechnology	NMP.2012.1.3-1 Systematic investigations of the mechanisms and effects of engineered nanomaterial interactions with living systems and/or the environment NMP.2012.1.3-3 Regulatory testing of nanomaterials
Cross-cutting and enabling R&D	NMP.2012.1.4-1 Pilot lines for precision synthesis of nanomaterials
Innovative materials for advanced applications	NMP.2012.2-3 Biomaterials for improved performance of medical implants
Raw materials	NMP.2012.4.1-1 New environmentally friendly approaches in minerals processing

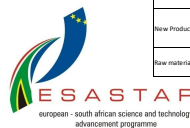


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Small-scale Focused Collaborative Projects

- Deadline:** First stage - 8 November 2011
- Indicative budget:** EUR 124 million
- Maximum:** EUR 4 million

Activity / Area	Topics called Funding Schemes
Maximising the contribution of nanotechnology to sustainable development	NMP.2012.1.1-1 Rational design of nano-catalysts for sustainable energy production based on fundamental understanding
Ensuring the safety of Nanotechnology	NMP.2012.1.3-2 Modelling toxicity behaviour of engineered nanomaterials
Cross-cutting and enabling R&D	NMP.2012.1.4-2 Hierarchical assembly of nano-scale building blocks NMP.2012.2-1 Joining dissimilar materials NMP.2012.2-2 Fine chemicals from CO ₂
Enabling R&D	NMP.2012.1-3 Self-healing materials for prolonged lifetime NMP.2012.2-2 Materials for data storage
Innovative materials for advanced applications	NMP.2012.2-3 Advanced materials for high temperature space exploration (SCM) NMP.2012.2-4 Cost-effective materials for larger blades for off-shore wind energy applications
New Production	NMP.2012.3-1 Photocatalytic materials for depollution (ISCA) NMP.2012.3-3 Highly efficient chemical syntheses using alternative energy flows NMP.2012.3-2 Total Safety Management for industrial organisations
Raw materials	NMP.2012.4.1-2 Development of advanced magnetic materials without, or with reduced use of, critical raw materials




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SME Collaborative Projects

- Deadline:** First stage - 8 November 2011
- Indicative budget:** EUR 48 million
- Maximum:** EUR 4 million
- Criteria:** SME(s) receive >35% of the funding
SME(s) must have a decision making role

Activity/Area	Topics called Funding Schemes
Cross-cutting and enabling R&D	NMP.2012.1.4-3 Nanoscale mechanical metrology for industrial processes and products
Innovative materials for advanced applications	NMP.2012.2-5 Halogen-free flame retardant materials
Integration	NMP.2012.4.0-1 Novel materials and design-based solutions for the creative industry
Raw materials	NMP.2012.4.1-2 Innovative recycling technologies of key metals in high-tech applications




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FoF Public Private Partnerships

- Deadline:** 1 December 2011
- Indicative budget:** EUR 100 million

Activity/Area	Topics called	Funding Schemes
FoF-NMP-2012-1	Adaptive production systems and measurement and control equipment for optimal energy consumption and near-to-zero emissions in manufacturing processes	Large Scale Collaborative Projects
FoF-NMP-2012-2	Methodologies and tools for the sustainable, predictive maintenance of production equipment	SME Collaborative Projects
FoF-NMP-2012-3	Intelligent production machines and 'plug-and-produce' devices for the adaptive system integration of automation equipment, robots and other intelligent machines, peripheral devices, smart sensors and industrial IT systems	
FoF-NMP-2012-4	High-performance manufacturing technologies in terms of efficiency (volumes, speed, process capability etc), robustness and accuracy	DEMO Targeted Project
FoF-NMP-2012-5	High precision production technologies for high quality 3D multi-parts	Small Scale Collaborative Projects
FoF-NMP-2012-6	Knowledge-based tools and approaches for process planning and integrated process simulation at factory level	DEMO Targeted Project
FoF-NMP-2012-7	Innovative technologies for casting, material removing and forming processes	



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EeB Public Private Partnerships

- **Deadline:** 1 December 2011
- **Indicative budget:** EUR70 million

Activity/Area	Topics called	Funding Schemes
eE.NMP.2012-1	Interaction and integration between buildings, grids, heating and cooling networks, and energy storage and energy generation systems	Large Scale Collaborative Projects
eE.NMP.2012-2	Systemic Approach for retrofitting existing buildings, including envelope upgrading, high performance lighting systems, energy efficient HVAC systems and renewable energy generation systems	
eE.NMP.2012-3	Development and validation of new 'processes and business models' for the next generation of performance based energy-efficient buildings integrating new services	SME Collaborative Projects
eE.NMP.2012-4	Nanotechnology based approaches to increase the performance of HVAC systems	Small Scale Collaborative Projects
eE.NMP.2012-5	Novel materials for smart windows conceived as affordable multifunctional systems offering enhanced energy control	
eE.NMP.2012-6	Methodologies for Knowledge transfer within the value chain and particularly to SMEs	CSA



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eE.NMP.2012-4	Nanotechnology based approaches to increase the performance of HVAC systems	Small Scale Collaborative Projects
eE.NMP.2012-5	Novel materials for smart windows conceived as affordable multifunctional systems offering enhanced energy control	
eE.NMP.2012-6	Methodologies for Knowledge transfer within the value chain and particularly to SMEs	CSA



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Green Cars Public Private Partnerships

- **Deadline:** 1 December 2011
- **Indicative budget:** EUR20 million

Activity/Area	Topics called	Funding Schemes
GC.NMP.2012-1	Innovative automotive electrochemical storage applications based on nanotechnology	Small Scale Collaborative Projects
GC.NMP.2012-2	Innovative advanced lightweight materials for the next generation of environmentally-friendly electric vehicles	Large Scale Collaborative Projects
GC.ENV.2012-6-6-3		
GC.SST.2012.1-1		



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Support Networks

- **ESASTAP**
 - <http://www.esastap.org.za/esastap/home/index.php>
- **NMP Team**
 - <http://www.nmpteam.com/>
- **CORDIS**
 - http://cordis.europa.eu/home_en.html
 - <http://cordis.europa.eu/partners/web/guest/home>
 - <http://ec.europa.eu/research/participants/porta/page/home>
- **Key Enabling Technologies (KETs)**
 - http://ec.europa.eu/enterprise/sectors/ict/key_technologies/kets_high_level_group_en.htm
 - Photonics21
 - ◻ <http://www.photonics21.org/>
- **Intellectual Property**
 - http://tp.cordis.europa.eu/pubfp7/docs/ipr_en.pdf



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NMP Mobility Programmes

- **COST Domain**
 - Materials, Physical & Nanosciences (MPNS) Theme
 - Complements FP
 - Focus on multidisciplinary cooperation
 - Coordination through cooperation in networks
 - SA-COST reciprocal agreement
- **Marie Curie Actions**
 - Human resource development in R&D
 - Building individual & institutional capacity
 - Several programmes
 - International Research Staff Exchange Scheme (IRSES)
 - Industry Academia Pathways & Partnerships (IAPP)
 - International Incoming & Outgoing Fellowships
 - Initial Training Networks (ITN)



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Thank You

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