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NMP FP7 OPPORTUNITIES FOR CONSTRUCTION

**3rd European Construction Technology Platform
(ECTP) Conference
Amsterdam Nov 19-20, 2007**

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NMP Work Programme (1)

Industrial Transformation “Knowledge-based construction industries”





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The challenge and the vision:
Building a knowledge-based,
competitive and sustainable
construction industry

knowledge-based

client-focused

sustainable

Construction

Intelligent
construction
processes



High-added
value materials

nano-developments

New strategies

Life-cycle

Safety

New process

New product/service



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Theme 4 NMP

Integration of technologies for industrial applications



Objectives :



- **Transforming traditional industry, which faces the challenge of low-cost competition. It should increase its productivity through new processes, high-added value products and new business models;**
- **Fostering scale-intensive and specialized suppliers industry through the adoption and integration of new advanced technologies thus enabling the improvement of its leadership in the global market;**
- **Promoting Science-based Industry which will play a key role in establishing a high-value European industry.**
- **Towards a sustainable supply industry is another key objective in supporting product & productivity innovation, especially for sectors with a large environmental footprint.**





Results Evaluation 2007 (1)

■ Topic: “*Resource efficient and clean buildings*”

(Call Identifier FP7-NMP-2007-4.0-5, **Large** collaborative research projects)

- ❖ **Stage 1:** 19 eligible proposals received
- ❖ **Stage 2:** 7 eligible proposals submitted

➤ **4 proposals selected for funding**

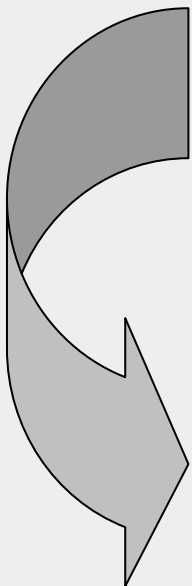
➤ **EC funding requested 33 M€ - Budget 295 M€**

➤ **Success rate** 37% stage 1

57% stage 2



Overall 22%





Results Evaluation 2007 (2)

- Topic: *"Innovative added-value construction product-services"*

(Call Identifier FP7-NMP-2007-4.0-6, **Sme** collaborative research projects)

- ❖ **Stage 1:** 27 eligible proposals received
- ❖ **Stage 2:** 10 eligible proposals submitted



➤ **4 proposals selected for funding**

➤ **EC funding requested 11.5 M€- Budget 75 M€**

➤ **Success rate** 37% stage 1
 40% stage 2

 **Overall 15%**

■ NMP – Activity 4.3: New production

- ✚ NMP-2008-3.4-2 Industrialisation through new integrated construction processes

Large-scale integrating collaborative projects

Content/Scope → To industrialise construction production processes through:

- Focusing on **initial phases** for **capturing** and **formalising** customer needs,
- **Transforming requirements** into formal sustainable **specifications** along the value chain → configurable/customisable life cycle performance based solutions

➤ Advanced high technology design/manufacturing methods into off-site construction production.

➤ New industrial "nD" models, interoperable methods/tools for analysis, simulation, validation, optimisation of the use of resources, monitoring, visualisation, decision support systems re-using existing knowledge, procurement, configuration and logistics management of manufactured components inline with on-site WIP


➤ Rapid reliable on-site assembly methods using intelligent equipment, new materials and new manufactured components for mechanisation, quality control, monitoring, automation or robotisation of on-site construction.

- **NMP – Activity 4.4: Integration of technologies for industrial applications**
 - NMP-2008-4.0-5 Innovative concepts and processes for strategic mineral supply and for new high added value mineral-based products
Large-scale integrating collaborative projects

Content/Scope → To enable realisation of increasing European capability and high value added production of mineral products should cover:

- Pioneering applications with new groups of materials for industrial and end consumer products in light of new customer needs;
- New strategies and technologies underlying transformation of metallic or non-metallic mineral resources;
- New mineral product functionality by intelligent modification of material properties and surfaces within micro-, macro- and nanoscale range;
- New strategies and technologies reducing the environmental footprint of mineral processing such as internal processing systems for re-use and recycle with closed material flows and quantitative use of all by-products with adapted process chains to generate additional life cycles.
- Mineral resource definition based on geological potential modelling of strategic supply;

- **NMP – Activity 4.4: Integration of technologies for industrial applications**

-  NMP-2008-4.0-8 Smart materials for applications in the sectors of construction and of machinery and production equipment
Collaborative projects targeted to SMEs

Content/Scope → **New materials with improved physical or chemical properties, new functionalities and enhanced end user related properties essential for innovation in the construction**

- In thermal, electro-magnetic and acoustic isolation, heat storage and climatic functionality;
- In resistance against an aggressive environment, and inherent surface functionalities (e.g. hygienic and easy to clean, self-cleaning, biocides and/or moisture control properties);
- Smart and multifunctional materials with good mechanical performance, both of the "active" type (with sensor-actuator coupling) and of the "passive type (with intrinsic self-adaptive or compensatory reaction to the change of external conditions).



Provisional

Future plans 2009

Healthy, safe, accessible and stimulating built indoor environments (L)

This topic should lead to a better understanding of the impact of the built indoor environment on health, comfort, productivity and feeling of safety and positive stimulation and to improve this built indoor environment for all people.

Reducing environmental footprint of energy intensive industries (L)

Research will aim at substantial improvement on environmental performance of the process industries (steel, cement, glass, chemical..), mainly by saving resources (eco-design and minimising Consumption of Primary resources), waste prevention, and reduction of effluents and emissions in particular CO₂ and other GHGs.









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Provisional

Future plans 2010

-  **New customer oriented business models (L)**
-  **Innovative use of underground space (L)**
-  **Technologies for a sustainable access to and availability of raw materials**
-  **Technologies for a sustainable access to and transformation of raw materials**
-  **Advanced technologies for structural safety and extension of service life**
-  **Embedded intelligence for use of buildings and life cycle management**



Conclusion

Value proposition as defined action

- Continuity with past activities
- Support industrial change;
- Collaborative research with industrial relevance;
- Multi-annual research planning linked to innovation;
- SME responsive;



Knowledge
Value Chain
Capacity
Continuous Cost Evaluation
Management systems
Human Resources
...



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For more information

- Legal framework within FP6 / Model Grant Agreement
 - www.cordis.europa.eu/fp7/find-doc_en.html
- General information on FP7-NMP
 - www.cordis.europa.eu/fp7/home.htm
 - To find a call www.cordis.europa.eu/fp7/dc/index.cfm
- Get Support
 - www.cordis.europa.eu/fp7/get-support_en.html

THANK YOU
for your attention

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