NMP FP7 OPPORTUNITIES FOR CONSTRUCTION

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

Dominique Planchon  RTD-G.2
NMP Work Programme
Results Evaluation 2007
Construction Topics 2008
Future plans 2009-2010
Conclusions
NMP Work Programme (1)

Industrial Transformation
“Knowledge-based construction industries”
The challenge and the vision:
Building a knowledge-based, competitive and sustainable construction industry

- Knowledge-based
- Client-focused
- Sustainable

Intelligent construction processes

High-added value materials
Nano-developments

New strategies

Life-cycle
Safety
New process
New product/service
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).
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.
<table>
<thead>
<tr>
<th>New customer oriented business models (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative use of underground space (L)</td>
</tr>
<tr>
<td>Technologies for a sustainable access to and availability of raw materials</td>
</tr>
<tr>
<td>Technologies for a sustainable access to and transformation of raw materials</td>
</tr>
<tr>
<td>Advanced technologies for structural safety and extension of service life</td>
</tr>
<tr>
<td>Embedded intelligence for use of buildings and life cycle management</td>
</tr>
</tbody>
</table>
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;

“IDEA:
Transfer function
Role of FP7

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

- **Legal framework within FP6 / Model Grant Agreement**

- **General information on FP7-NMP**

- **Get Support**

Thank you for your attention

Disclaimer
Aspects of these presentations interpret legal documents. Only these legal documents and are legally binding