Experiences with COST
NuTeC

Nuclear Technological Center (NuTeC, www.nutec.be)
Center of Environmental Studies (CMK, www.uhasselt.be/cmk)

Industrial Sciences: “Nuclear and environmental Engineering”
- Environmental Technology-Radiochemistry
- Medical Nuclear Technology

Application and development of nuclear measurement methods
Environmental and energy related research
EMR dosimetry
Experiences with COST

1. Introduction

2. The making of the COST network NORM4Building

3. Life in a COST Action
What is COST?

- European RTD (Research and Technological Development) Framework Program

- COST supports the ‘construction’ of new European networks of researchers
COST sponsors

- ORGANIZATION OF MEETINGS
- SHORT-TERM SCIENTIFIC MISSIONS
  - The life blood of an Action
- TRAINING SCHOOLS
- PUBLICATIONS and DISSEMINATION

- But: no sponsorship for research
Why would you participate in a COST Action?

- It’s all about the Network
  - Your network can help you to generate output

- Joint international publications
  - Papers, books

- Finding the right partners for H2020 or other European project (eg Research Fund for Coal and Steel)
  - Marie Curie actions
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Main objective ‘NORM4BUILDING’

- Exchange of multidisciplinary knowledge and experiences (radiological, technical, economical, legislative, ecological, ...)

  - Stimulate the reuse of NORM residues in new tailor-made sustainable building materials

  while considering exposure to external gamma radiation and the resulting indoor air quality.
## COST project NORM4BUILDING

### NORM residues (with interesting properties for reuse in building materials)

<table>
<thead>
<tr>
<th>NORM residues</th>
<th>Codification EU-Waste Catalogue?</th>
<th>Estimated production (Milion Tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>coal fly-ash</td>
<td>001 02 or 10 01 16</td>
<td>44 (2003, EU 15)</td>
</tr>
<tr>
<td>slag and bottom ash from a coal-fired power plant</td>
<td>10 01 01 or 10 01 14</td>
<td>8 (2003, EU 15)</td>
</tr>
<tr>
<td>phosphorous slag from thermal phosphorus production</td>
<td>06 09 02</td>
<td>-</td>
</tr>
<tr>
<td>phosphogypsum from phosphoric acid production,</td>
<td>-</td>
<td>180 (2003, World)</td>
</tr>
<tr>
<td>red-mud, (bauxite residue), from alumina production</td>
<td>01 03 07</td>
<td>120 (2003, World)</td>
</tr>
<tr>
<td>unprocessed slag from primary iron production</td>
<td>10 02 02</td>
<td>260-310 (2011, World)</td>
</tr>
<tr>
<td>steel or stainless steel, lead slags</td>
<td>10 04 01</td>
<td>130-210 (2011, World)</td>
</tr>
<tr>
<td>copper slags, from primary and secondary production.</td>
<td>10 06 01</td>
<td>24,6 (2009, World)</td>
</tr>
<tr>
<td>tin slags from primary and secondary production</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>specific residues originating from pyro- and hydro-metallurgies producing platinum group metals or rare earth elements</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

[1] Ecoba - SPECIAL PRINT CPI 04/06
Composition of a “building material”

Ceramic or concrete, there is an analogy in microstructure:

There is a matrix that constitutes the **binding phase** (blue in the image)

There are also **aggregates** (green or reddish hues)

Efforts are done to replace **both** binder and aggregates with alternative, secondary resources

Source: http://www.bruker.com/
NORM4Building: “the making of”

- Founding fathers:
  - Wouter Schroeyers (Nuclear Technology)
  - Yiannis Pontikes (Construction engineering)

- Building the network:
  - From meeting to meeting
  - Organisation of EAN-NORM meeting in Hasselt

- NORM community = small world
  - Almost all relevant European experts on board
Four working groups

Working Group 1
1. Studying **state of the art** in the reuse of NORM residues in building materials
2. Development of a **data base with best practices**

Working Group 2
1. Develop **new options for tailor-made building materials** to incorporate NORM residues.

Working Group 3:
1. Improve **measurement capacity** to verify that NORM containing building materials are in accordance to European legislation.
2. Supporting **standardization** of measurement protocols and development of standards.

Working Group 4:
1. Improving **radiological impact assessment models** for a number of building scenarios.
2. Investigating the influence of different **legislative radioprotection scenarios**.
Organization – 4 year Action

Management Committee
Steering Committee

Advisory board:
* NORM processing and construction industries
* Regulators

WG 1

WG 2

Scientific Committee

WG 3

WG 4

MetroNORM

* Eureka! 5415
  Newcomat
  * FP7 Suscon, Leema and EASEE

European Alara Networks (EAN-NORM,...)
European Commission working groups
(National) policy makers

Other COST actions
Inter-COST workshops?
Starting up a COST Action

- **Risk:**
  - A lot of inactive partners can join the management committee of a COST action

- **Solution:**
  - Invite the experts that you would like to involve before the start of an Action to fill up the management committee positions.

- Best experts ≠ people that publish the most
  - You need active members
Starting up a COST Action

- Choose your working group leaders and STSM coordinator carefully

- Build a local network around your COST Action

- Consider and organise your COST Action from the start as a tool to:
  - Generate output
  - Search for the right research partners
  - Get industry on board
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Chair of a COST Action?

**Chair:**

- **International relevance:**
  - Considered to be a strong partner for projects, papers...

- **Invitations for:**
  - Participation in international organisations,
  - Lectures @ international conferences
  - ...

- **Ideal for sharpening your coordination skills**
Grant holder of a COST Action?

- Grant holder =
  - A lot of administrative work (underpayed by COST)
  - Is a matter of control
    - Difficult to be a chair and not the grant holder
      - You need a grant holder on which you can rely
      - Very close interaction is needed between chair and grant holder
  - Demonstrates to partners that you can handle the administration of European Projects: that your institute is a serious partner
Some practical aspects

- Electronic tool of COST takes some time to get used to.
  - COST financial system is not always compatible with own administrative system

- Fixed fee’s for hotels and meals (no receipts needed)

- Taxes (BTW) and overhead can complicate the organisation of events
  - ‘BTW’ is not sponsored by COST
Current status of NORM4Building

Participants per country (MC - MCsub - WG - MCobs)

119 experts from 30 countries
The COST network NORM4Building
Thank you for your attention

Questions?