SET-PLAN IMPLEMENTATION

The Steering Group of the SET-Plan in its last meeting on October 28th, 2010 agreed to speed-up the execution of activities of the Implementation Plans (IPs) of the European Industrial Initiatives (EIIs). It was decided to collectively identify the possibilities for launching joint actions between Member States and/or Member States and the European Commission.

The mapping exercise carried out through this questionnaire builds upon this decision of the Steering Group. It aims to identify topics for leveraging best ongoing efforts with complementary joint actions, as prioritized by the Implementation Plans. In this phase the mapping will focus on projects and activities with a total budget higher than 1 M€.

We trust that you also consider the success of this exercise important for the immediate implementation of the SET-Plan.

MAPPING OF PROJECTS, ACTIVITIES, RESOURCES AND INVESTMENTS

To which EII(s) is your project, activity, resource or investment relevant? (multiple choices are possible)

<table>
<thead>
<tr>
<th>WIND</th>
<th>SOLAR</th>
<th>GRIDS</th>
<th>CCS</th>
<th>NUCLEAR</th>
<th>BIOENERGY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

A. PROJECTS AND ACTIVITIES

GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Name of project:</th>
<th>Thermal-hydraulics of innovative nuclear systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acronym:</td>
<td>THINS</td>
</tr>
<tr>
<td>Location:</td>
<td>24 partners, the 8 key partners are listed below: KIT, CEA, SCK.CEN, ENEA, NRG, PSI, HZDR, KTH, DUT</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SHORT PROJECT DESCRIPTION**

*Provide a short abstract of max. 100 words*

This project is devoted to important crosscutting thermal-hydraulic issues encountered in various innovative nuclear systems, such as advanced reactor core thermal-hydraulics, single phase mixed convection and turbulence, specific multiphase flow, and code coupling and qualification. The main objectives of the project are: • Generation of a data base for the development and validation of new models and codes describing the selected crosscutting thermal-hydraulic phenomena. The project will achieve optimum usage of available European resources in experimental facilities, numerical tools and expertise. The main outcomes of the project will be a synergized infrastructure for thermal-hydraulic research of innovative nuclear systems in Europe.

**PROJECT GOALS & OBJECTIVES**

**Goals:**
*Indicate main qualitative goals*

- • Generation of a data base for the development and validation of new models and codes
- • Development of new physical models and modeling approaches

**Objectives:**
*Indicate quantitative objectives (similar to KPIs of the IPs of the EIIs). Also indicate intermediate milestones where applicable.*

No quantitative objectives

**PERFORMANCE OF THE PROJECT**

**Assumed state-of-the-art:**
*Describe quantitatively the state-of-the-art that the project objectives are based upon*

Project reports, Publications
Numer of young scientists trained during the project

**Achievements so far:**
*If intermediate results are available, please indicate the current achievements (qualitative and/or quantitative)*

In the first year more than 40 publications; More than 20 Master students and PhD students are working on this project

**Difficulties and potential risks:**
*Indicate briefly problems encountered or to be encountered in the short term (e. g. overall legislative context, public acceptance, permitting, etc.)*

No
FUNDING & BUDGET

<table>
<thead>
<tr>
<th>Funding programme:</th>
<th>European Commission FP7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding public entity:</td>
<td>About 50% from European Commission</td>
</tr>
<tr>
<td>Total (public &amp; private) project budget (€):</td>
<td>10 Millions Euro</td>
</tr>
<tr>
<td>Public funding (€):</td>
<td></td>
</tr>
<tr>
<td>Total effort (person-months)</td>
<td>926</td>
</tr>
</tbody>
</table>

DISSEMINATION OF PROJECT RESULTS

Publications, presentations in conferences and workshops, and other dissemination means: Give highlights only

- Journals, Conferences

TOWARDS COMMERCIALISATION

Indicate (new) products and/or services expected from the project. Are new business models required for commercialisation of the project results?

Highlight expected commercialisation benefits, e.g. patents, spin-offs, new products, business partnerships

Support to design of new nuclear systems

SYNERGIES WITH THE IMPLEMENTATION PLANS OF THE EUROPEAN INDUSTRIAL INITIATIVES – NETWORKING – KNOWLEDGE SHARING

Contribution to/Relevance with the IPs: To your opinion, to which activities of the IPs of the EIIs is this project related to? Indicate contributions / complements.

Please note that reference here is made to the activities of the IPs as published in http://setis.ec.europa.eu/activities/implementation-plans

Potential synergies with other projects and activities: Can you identify any other project(s) in your country, another MS or at European level that could be synergetic with this project?

NURISP
Networking: Would you be willing to share results with the projects identified above?
*Indicate willingness to networking and also potential conditions
Needs agreement of the Consortium

Knowledge sharing: Would the abovementioned Networking necessitate a formal knowledge sharing agreement? To your view would this be the preferred route?

Future steps: Are there any follow-up activities considered after the completion of your project?
Is there a need to scale up activities in this topic at European level?
*Yes

B. RESOURCES AND INVESTMENTS

RESOURCES AND INVESTMENTS
Describe in short any RD&D infrastructures that your project relies on. Are these available or do they need to be developed?
*Existing test facilities and simulation tools in the partner institutions

If these are to be developed, what is the corresponding investment required? What is the allocated budget (€) for this investment in your project?

OTHER INFORMATION

Date:
*when the questionnaire was completed
February 05, 2011

Information provider:
*Give the name and affiliation of the contact person for the questionnaire. If you are the project coordinator, check the box
project coordinator

Please send the completed form to set-plan-secretariat@ec.europa.eu preferably by FEBRUARY 15.
Thank you for your cooperation!