

SNETP Newsletter n° 6

September 2010

A few words from the Chairman of the Governing Board

■ **Bookmark your calendar: SET Plan Conference, Brussels, 15-16.11. 2010**

SNETP is now three years old, and will hold its second General Assembly in September 2010 in Brussels. It gathers more than eighty European organisations, and has become a recognised forum where common visions can be elaborated at the EU scale, and where common initiatives can be fostered.

The major documents needed by the EU to feed its policy in the field of nuclear fission technologies have now been issued: the Vision Report as a starting point already in 2007, the Strategic Research Agenda made available in June 2009, and more recently the Deployment Strategy document released in May 2010 for the last SET Plan Conference in Madrid.

While keeping this activity of support to the EU policy making, SNETP also enters a new phase oriented towards the implementation of specific actions and projects.

This evolution is already embodied in the organisational structure of the platform, with the rising activity of the three "Technology Working Groups" corresponding to the three overarching objectives described in the Vision Report: maintaining the competitiveness of today's Gen II and Gen III fission technologies (based on light water reactors), ii) develop the applications of nuclear fission energy beyond electricity (in particular with cogeneration of heat for industrial applications), and iii) enhance the sustainability of the contribution of nuclear fission to low carbon energy production by preparing the Gen IV technologies (based on fast neutron reactors with closed fuel cycles).

Last June, the Gen II and III Working Group had its constitutive meeting in Prague. This

Group will establish priorities for the R&D to be performed or initiated from 2010 to 2020 in the area of Gen II and III reactors, and propose innovative modes of co-operation between the stakeholders (utilities, vendors, R&D organisations and TSOs) in performing this R&D.

Since last June also, the ESNII Task Force, which already started its work at the end of 2008, is formally established through a Memorandum of Understanding between its thirteen first participant organisations. The ESNII Team, which brings together representatives of the Task Force and representative of the SET Plan Steering Group, started its work to prepare the official launch of the European Sustainable Nuclear Industrial Initiative at the next SET Plan Conference next November in Brussels, under the Belgian presidency. This will be a major opportunity to address the status of the projects of this Initiative: the sodium cooled prototype ASTRID, the lead cooled accelerator driven system demonstrator MYRRHA, the gas cooled technology development programme ALLEGRO, etc. There is already a strong commitment of major European players in these projects, where the technical challenges and the financial needs are at the level of their expected impact; a scale at which the support of the whole Community will make the difference.



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Publication of SNETP's Deployment Strategy

The DS was officially released during the ENC conference in Barcelona

Launched in September 2007, SNETP now gathers over 80 stakeholders involved in nuclear fission (industry and services, research, universities, safety organisations, non-governmental organisations and associations) from 20 European countries.

In 2008 the European Commission announced the Strategic Energy Technology Plan (SET Plan) in which the role played by nuclear (fission) energy in limiting greenhouse-gas emissions and in contributing to Europe's security of supply is clearly recognised.

In June 2009, SNETP published its Strategic Research Agenda (SRA), presenting the main nuclear R&D topics for short-, medium- and long term.

In May 2010, SNETP officially released its Deployment Strategy at the European Nuclear Conference 2010, in Barcelona.

The Deployment Strategy identifies the key actions necessary to implement the SRA and the funding requirements in order to:

1. allow for the long-term operation of the current fleet and support the deployment of the new generation of Light Water Reactors (so called Gen II and III),
2. prepare the next generation of Fast Neutron Reactors (so called Gen IV) and
3. develop non-electric applications of nuclear energy (a.k.a. cogeneration).

Today SNETP aims to play a leading role in coordinating and implementing R&D and

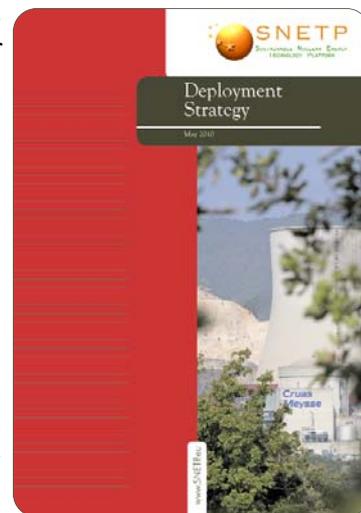
promoting actions in the fields of education, training, knowledge management, communication and dissemination:

- During 2010-2020, the total R&D investments for Gen II and III are estimated to EUR2009 5 billion. SNETP should allow for at least 20% cost savings by avoiding duplication and reducing fragmentation of R&D effort.
- During 2010-2020, European funding requirements for Fast Neutron Reactors and cogeneration R&D efforts on prototypes or demonstrators are estimated at about EUR2009 12.5 billions, which could be significantly reduced in case of international partnerships; the share of the cost is estimated at 80% from the public sector and 20% from industry. SNETP recommends that Member States and the European Union strongly support the corresponding Industrial Initiatives.

The Deployment Strategy represents the outcome of many stakeholders involved in SNETP representing industry, research organisations, technical safety organisations and academia. As Chairmen of the Working Group, we would like to take this opportunity to express our gratitude to all of them.

SNETP is now ready to transform a shared vision into reality by defining priority actions and coordinating activities on each one of the above listed three technologies, thus contributing to European energy policy. Next steps include:

1. SNETP will focus on the identification of the most important topics in the SRA, and on research activities concentrated on the most critical issues.
2. This will be followed by the elaboration of an Implementation Plan, describing how research should be organised in



Deployment Strategy was published in May 2010

order to share R&D capabilities and competences and to ensure the leverage of necessary resources.

3. The SNETP Working Groups will then organise efficient execution of the implementation plan amongst the SNETP members.

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Mr. Pazdera from CEZ is presenting the Deployment strategy document at ENC 2010 in Barcelona

Technological Working Group (TWG) on Gen II and III

SNETP structures its work on Gen II & III reactor R&D

The Governing Board of SNETP decided in the meeting of November 2009 that a Technological Working Group (TWG) needs to be established to focus on Research and development (R&D) of Generation II and III type reactors, and related cross-cutting R&D issues.

The TWG on Gen II and III was constituted in meeting held in Prague on the June 8th, 2010 hosted by NRI. In total approximately 30 members of the SNETP participated in the meeting.

The TWG will coordinate, prioritise, monitor and report on Gen II/III R&D activities described in the Strategic Research Agenda (SRA) and prepare the relevant part of the implementation plan underlying the SNETP Deployment Strategy (DS). The main tasks will be:

- Organise interactions with European initiatives, national programmes, as

well as with other international initiatives.

- Establish the roadmap and priorities of the R&D to be performed or initiated from 2010 to 2020 in the area of Gen II and III reactors.
- Propose a mode of co-operation between the different stakeholders (utilities, vendors, R&D organisations and TSOs) in performing the R&D.
- Analyse the possible advantage of cooperation with parties outside SNETP and recommend ways to organise such cooperation.

The NULIFE Network of Excellence (NoE) which is proceeding to permanent entity in 2011 will play an important role inside the TWG in proving the operation mode and in implementing some key areas of the Gen II and III of the SRA and DS.

The TWG will act as the driving force to establish an European Industrial Initiative under the European SET-Plan with refer-



Constitutive meeting in Prague, June 2010

ence to "maintain competitiveness in fission technologies, together with long-term waste management solutions".

The TWG is open to all members of SNETP willing to contribute actively in the work of the group. The TWG is chaired by a representative of utility (Tomas Lefvert, Vattenfall) and co-chaired by representatives of research (Jiri Zdarek, UJV) and safety (Giovanni Bruna, IRSN).

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Nuclear Energy: a Sustainable Contributor to the Low-Carbon Economy

Latest perspectives from the „European Union“

The European Council of March 2007 set the ground for a real European Energy Policy, with the formulation of the "3x20" targets to be reached in one decade: 20% GHG reduction, 20% renewable energy production and 20% energy savings. These objectives correspond to the "requirements" that energy needs to be clean, safe, secure and affordable or in other words "sustainable". In parallel, it has been recognised that the targets will not be met without important increasing of efforts in the area of research and innovation; this led to the formulation of the SET Plan – issued also

in 2007 – which was designed as a driving force for the creation of the Sustainable Nuclear Energy Technology Platform (SNETP).

The year 2010 is the year when the implementation strategies and plans are being adopted and the following decades are envisaged as to be highly challenging.

So far, this year saw the launch of the Europe 2020 Strategy with its five flagships. Two of these are confirming the line taken by "decisions of 2007": Climate Change and Energy, Research and Innovation. Under the umbrella of this global strategic document, the European Commission is preparing more detailed paper on Energy Strategy 2011-2020, to be issued in November 2010, with a view to be presented and enforced at the European Council on Energy scheduled for the beginning of 2011.

November 2010 will continue to be a rather busy month on energy issues:

- with the aim to fit into the timing of the Energy Strategy, the Commission plans to issue the next PINC presenting the perspectives for nuclear energy at Community level for upcoming years and probably decades. The content of this Programme Indicatif Nucléaire (PINC) will, inter alia, take into account the works provided by ENEF (European Nuclear Energy Forum) regarding the role of nuclear power in the sustainable energy mix of the future;
- last but not least, ESNII (European Sustainable Nuclear Industrial Initiative) is expected to be launched on the 15-16 November 2010 SET Plan Conference in Brussels, with the main aim to place the nuclear initiative on equal level as other initiatives on low-carbon technologies.

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Strategic Energy Technology Plan

SET Plan Conference Madrid June 3rd – 4th

The previous October 2009 SET Plan Conference Stockholm has given a strong impulse to the European energy community to put Europe on the right way for a truly long-term sustainable development. The Madrid Conference which took place on 3rd and 4th June under the Spanish Presidency has highlighted the importance of the SET Plan operational implementation for the achievement of the European ambitious energy and climate goals and in particular has launched the first European Industrial initiatives.

About 400 people participated to this event coming from Industry, research community, financial entities as well as the representatives of the Member States and of the European Commission were present.

The conference focussed on the launching of the first European Industrial Initiatives (EII) and also on the first R&D projects initiated under the European Energy Research Association (EERA) which shall complement with a longer term vision the EIIs. These latest steps are:

- With the "green light" from the Steering Group of the SET Plan, CCS, Solar (photovoltaic and thermal), wind energy and the grids industrial initiatives have been officially launched with the edition of a joint statement which emphasized on the commitment of industry, research community, Member States and the European Commission to boost the innovation and demonstration projects.
- To avoid fragmentation and to achieve a better efficiency in R&D programs, EERA considers the optimization of the European research capabilities and testing facilities sharing. The first projects which will be operationally launched by autumn 2010 are related to wind energy, photovoltaics, and smart grids and geothermal. Each of them represents a commitment of about 100-150 man-year/year on the mid term period.

European Energy Research Alliance (EERA) shall complement with a longer term vision the EIIs.



Yves Kaluzny (CEA) presents SNETP and ESNII at the SET-Plan Conference in Madrid

These projects are driven by research and focus on the medium and long term. During the discussion, it appeared as essential to assure a good connexion between the European industrial initiatives (oriented to the 2020 objectives with demonstration projects) and the EERA projects which prepare future technology breakthroughs and shall anticipate on EIIs future needs.

The conclusions of the Madrid Conference clearly show a strong impuls for the development of renewable energy projects in order to match at least the 2020 objectives – 20% of renewable in the energy mix – and also demonstrate the key role of the future grids to accommodate this development of intermittent energy: the "smart grid" concept is the cornerstone of the future European energy mix.

ESNII status has been presented during a specific session chaired by Frantisek Pazdera, together with two other potential representatives of the EII: for bio-energy and smart cities.

The ESNII presentation has given the opportunity not only to describe the initiative itself but also to recall the present contribution of nuclear energy to the European energy security of supply, its competitiveness and its contribution to the greenhouse gas reduction. ESNII has been presented in the perspective of sustainability of nuclear energy as a next step after time life extension of today's reactors and following the deployment of Gen 3 reactors: it shall address also applications beyond electricity generation. According to the SET plan requirements, the main achievements in the preparation of the launching of the initiative were described as:

- Formal governance of the Initiative with signature of a Memorandum of understanding (MOU) which demonstrates the commitment of industry and R&D organization to ESNII objectives;
- Edition of the concept paper which describes the technology roadmap up to the demonstrators commissioning, the support infrastructure, an estimation of the overall cost and which proposes Key Performance Indicators for the monitoring of the achievements of the initiative.

- First draft of the implementation plan shall focus on the priorities for the upcoming three next years. Its finalization is required for the official launch of the initiative.

Major projects within ESNII are ASTRID, MYRRHA, ALFRED and ALLEGRO

above all by public funding coming from the Member States and the European Union: there is a lack of relevant financial instruments to support investments covering

costs for construction of demonstrators or testing facilities. It should be considered that due to the industrial risks and long term perspective for commercialization of similar projects, the public funding is necessary in order to share such risks and motivate private investors to participate on the starting phase of these projects.

ESNII is to be launched at the next SET Plan conference in Brussels in November 2010

The specific session on "stimulating investment in the SET Plan" has shown how challenging it can be to attract private industry investments for innovation technologies: the lack of short term benefits caused very low "market appetite"! Nevertheless beyond the Framework program, the European Union has put in place through the ETS - NER 300 and with the European Energy Program for Recovery appropriate resources (several billion of

Euros) to grant demonstration projects in CCS and renewable energies. One of the aims for our future work is to gain similar status for nuclear energy as for the moment it shall be recognized that nuclear energy does not benefit from above mentioned specific tools to such extend.

Within the final phase of the implementation plan, the financing issues are to be a priority in the upcoming months aiming at achieving a fair funding scheme for nuclear energy as well as for other technologies covered by the SET Plan.

Bearing in mind everything stated above the ESNII is ready to be launched at the next SET Plan conference in Brussels on November 15th-16th 2010.

The presentation emphasised on the operational progress of major projects and on the existing financial commitments beyond the already committed funds (100 M€) in the FP7:

- Belgian Government decision on MYRRHA with 60 M€ funding on the next 5 years;
- French Government allocation of 650 M€ for ASTRID development;
- A MOU has been signed on May 20th between Czech, Hungarian and Slovak organizations to develop the Gas Fast Reactor technology and ALLEGRO.

Globally the first developments or design phases are funded but it will be still necessary to consolidate the overall funding of these projects partly by private investors but



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SNETP Secretariat news

The latest news on activities of the SNETP are regularly updated on our website www.snetp.eu. Shortly will be presented electronic versions of Factsheets on Nuclear energy competitiveness and security of supply. Other documents related to the Strategic Research Agenda are under preparation. An updated Directory of all platform partners is to be prepared shortly.



SNETP General Assembly
14th of September, 2010



The SNETP secretariat has the pleasure to announce the

Second General Assembly of the Sustainable Nuclear Energy Technology Platform (SNETP) on the 14th of September, 2010



Who are the members of SNETP?

Focus on Westinghouse Electric Company

Westinghouse Electric Company provides fuel, services, technology, plant design, and equipment for the commercial nuclear electric power industry.

Westinghouse Electric Company is indeed fully committed to the commercial nuclear power industry, but the company traces its roots back to 1886, when it was founded by **George Westinghouse**, acknowledged during his lifetime as the world's greatest engineer. Throughout its long history, the name Westinghouse has been associated with a large number of significant achievements, mostly related to electricity and electronics.

Today's Westinghouse Electric Company continues to find innovative ways of applying nuclear power technology for the advancement of the world's economies. Our primary vision is to be the customers' choice to supply leading-edge nuclear technology to satisfy the world's growing demand for energy.

Westinghouse is the original supplier for 120 nuclear units around the world. Nearly 50 percent of the nuclear power plants in operation worldwide, and nearly 60 percent in the United States, are based on Westinghouse technology. Worldwide, the nearly 15000 employees of Westinghouse Electric Company continue to pioneer value-added engineering and services creating success for our customers in their increasingly demanding markets.

The three recently created regions of Westinghouse (Europe, Asia, Americas) support this mission through 3 product lines: Nuclear Fuel, Nuclear Services and Nuclear Power Plants. The European



Westinghouse Electric Belgium S.A., Nivelles Service Center

region has more than 4000 employees serving the area from operations in Sweden, Spain, Belgium, Germany, France and the UK.

Primary research and technology development activities at Westinghouse Electric Company which support the commercial nuclear industry clients are carried out by the Science and Technology Department, located at the George Westinghouse Research & Technology Park

in Churchill, Pennsylvania. Current research there focuses on five major areas: energy systems, chemical processing, materials and corrosion, materials reliability, and decision analysis.

Many of the scientists and engineers in the Science and Technology Department are among the world's leading experts in their fields. This expertise helps Westinghouse advance nuclear power technology for the benefit of our customers and electricity users worldwide.

Westinghouse is the only company with a single focus on commercial nuclear power. As the need for energy continues to grow, Westinghouse is experiencing unprecedented growth. Construction is underway in China for four units of our advanced-design nuclear power plant.

The AP1000™ nuclear power plant has been selected as the technology of choice by many U.S. utilities, and countries across the globe are looking into the feasibility of expanding their use of nuclear power with the AP1000.

In keeping with the continual efforts to align our organizational capabilities and expertise to more effectively deliver products and services to meet our customer needs, a Materials Center of Excellence has been created to focus on the following:

- Innovative solutions to materials issues related to operating plant components including the Owners Group initiatives.
- Provide broader opportunities for personal growth and development.
- Support of business unit strategic initiatives that require material expertise and solutions.
- Materials development activities for future products, services and new plant market that may be needed.
- Growth of business and industry leadership for new material developments, materials issues and degradation of plant components.



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**Mr. Fernando Naredo (naredof@westinghouse.com),
 Vice President Europe Government Affairs
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FP7 project highlights

ADRIANA (ADvanced Reactor Initiative And Network Arrangement)

The EU FP7 project ADRIANA represents the common effort of EU countries targeted to ensure the sustainable energy for EU.



The project has received funding from the European Atomic Energy Community's (Euratom) Seventh Framework Programme FP7/2007-2011 under grant agreement n° 249687.

The project has been proposed to setting up the network dedicated to the construction and operation of research infrastructures in support of developments for the European Industrial Initiative for sustainable nuclear fission (ESNII).

The general objective of ADRIANA is to analyze the developments needed for the three chosen Gen-IV prototypes (SFR, GFR and LFR), systems with a closed fuel cycle, to specify their parameters and characteristics, and to define the needed experimental facilities. Some of these facilities exist and others should be constructed. The project defines the needed research infrastruc-

tures, refurbishment or upgrading of existing facilities, irradiation facilities and hot laboratories, construction of new ones, state of the art instrumentation technologies available, and consider the trans-national access to the experimental facilities.

To reach the goals of the ADRIANA project the consortium of 15 institutes and research centres was created. This provides a guarantee of achieving the project objectives in a high quality including the compliance with the EU requirements on integration and dissemination of its results.

The project work is divided into 8 parallel work packages with different objectives, which are:

- WP1 - Project management,
- WP5 - Instrumentation, diagnostics and exp. devices,
- WP2 - SFR facilities,
- WP6 - Irradiation facilities and hot labs,
- WP3 - LFR facilities,
- WP7 - Zero power reactors,
- WP4 - GFR facilities,
- WP8 - Road map.

The project objectives will be accomplished within 18 months and are structured into 6 main stages with deliverables and to 2 milestones:

Main stages:

- **Month 4:** Preliminary reports describing the present situation and future needs.
- **Month 6:** Map of the existing research infrastructure and list of research projects.
- **Month 12:** Project update and project seminar.
- **Month 14:** Reports on future needs and infrastructure road map.
- **Month 15:** Evaluation of existing research infrastructures for long-term vision of sustainable energy.
- **Month 18:** Project final report, Roadmap proposal for building knowledge and facilities needed for new nuclear energy systems development.

Milestones:

- **M1 - month 6:** Review of existing facilities and future needs completed.
- **M2 - month 12:** Data and information for specification of future needs evaluated.

The project was successfully started on 1st February 2010 during the Kick-Off Meeting organized by the project coordinator UJV Rez plc., held in UJV's headquarter in Rez, in the Czech Republic.

The successful project progress was proven during the Adriana's 1st Extraordinary Workshop held 7-8th July 2010 in UJV Rez. The Workshop focused to the WP's team work on reach the defined milestones and project scheduling.

Results of the Project will be utilized in conformance with the SET Plan, the European Industry Initiative on sustainable nuclear fission energy and the SNETP. All stakeholders being involved or having high interest in Euratom fission research programmes (coming from the Advisory and End-User's Group, from the ADRIANA beneficiaries and others) are invited to support the consortium and to continue in sustainability and updating of its roadmap.

The results of the project will serve to beneficiary organisations involved in the Project and externally they will be available to Euratom, European institutions and decision makers, particularly those interested in the field of energy and/or environment policies.

The Project will be interesting and important for the sphere of education and training i.e. for universities, which could participate in the use of experimental facilities especially of the training facilities that are also included in the Project.

For more and detailed information about the project, please visit the project public website at the address <http://adriana.ujv.cz> and read the Project presentation document.



Team of the research project ADRIANA

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■ Event highlights: ENEF Plenary meeting: Bratislava



European Nuclear Energy Forum (ENEFF) Plenary Meeting took place in Bratislava, 25-26 May 2010. The work of ENEFF has been organised between 2007 and 2009 around two

Plenary meetings per year, held successively in Bratislava and Prague. During these Plenary meetings, the activities of the working groups are presented and contribute to an open dialogue among all stakeholders.

There were presented and discussed detailed progress reports on the work of the ENEFF Working Groups (WGs) – Opportunities, Risks and Transparency – and their affiliated Sub Groups.

Opportunities WG, which is chaired by Jean-Pol Poncelet of AREVA, highlighted the competitiveness of nuclear energy and outlined concrete ways of offering stable and competitive electricity prices for Europe's consumers.

The report on the work of the Risks WG, which is chaired by Dr. Walter Hohlefelder of E.ON, focused on the need to produce a European legal framework on nuclear safety issues.

Presentation on the work of the Information and Transparency WG, chaired by Janos Toth from the European Economic and Social Committee, was followed by a debate on issues related to the improvements of public consultation and the need to define the role of local and national decision-makers in the process.

SNETP and European Sustainable Nuclear Industrial Initiative (ESNII) were presented in the frame of this meeting.

Around 200 participants attended, representing all stakeholder groups engaged in the ENEFF process. From 2009 on, it was decided that their frequency should be annual.



Alain Porrachia, CEA, presents SNETP at the ENEFF Plenary



Bernard Bigot, general administrator of CEA, visits the SNETP stand at the ENEFF Plenary meeting in Bratislava

International events

18-20.10.2010 Prague

High Temperature Reactor Technology conference

- www.htr2010.eu

21.10.2010 Brussels

SCK•CEN Topic day on GEN II

- http://www.sckcen.be/en/Events/TD_GENIII

3-4-5.11.2010 Barcelona

International Nuclear Energy Development Forum, Barcelona 2010

- <http://www.forwardnetworking.com/site/2010/04/inedf-barcelona-1st-2nd-3rd-november-2010/>

15-16.11.2010 Brussels

Set Plan Conference

- <http://www.setplan2010.be/>

Contact information:

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SNETP internal workspace (members only): <https://extranet.snetp.eu>

Contact the secretariat to be given a login and a password.

Upcoming SNETP milestones

- 07.09.2010 Brussels
ESNII Task Force meeting n°.9
- 13.09.2010 Brussels
ESNII Team meeting n°.1
- 14.09.2010 Brussels
SNETP General Assembly
- 15.09.2010 Brussels
Governing Board meeting n°.6
- 20-21.09.2010 Genova
Executive Committee meeting n°.9
- 07.10.2010 Amsterdam
GEN II III group meeting n°.2
- 20-21.01.2011 Madrid
Executive Committee meeting n°.10