



# Sustainable Nuclear Energy Technology Platform

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## A few words from the Industry Vice-Chair

It is a pleasure for me to write the introduction of the second newsletter of SNE-TP. Since the first newsletter published in July, the Platform has worked hard to finalise its Strategic Research Agenda – and I congratulate the hundred or so of researchers and engineers who have produced this document, its Executive Summary and the technical annexes. These will be available soon on the Platform's website, [www.snetp.eu](http://www.snetp.eu).

Key messages for the Deployment Strategy have also been defined and the Deployment Strategy Document will be issued in a few weeks. The Education, Training and Knowledge Management (ETKM) Working Group has also been very active.

New organisations have asked to join SNE-TP, which now counts over 60 members from 19 European countries. In addition, SNE-TP is being recognised at international level as a major R&D initiative for fission energy, and this requires the Platform to define its strategy towards international collaborations, with countries such as Russia or China, or international organisations or initiatives such as the IAEA or GIF.

In terms of energy policy at EU level, nuclear fission is increasingly recognised as a key low carbon energy technology. In its communication on low carbon energy technologies (Strategic Energy Technology (SET) Plan) the European

Commission clearly identified nuclear fission as one of the key technologies to contribute to the 2020 objectives and the 2050 vision of a low carbon energy mix. Our Strategic Research Agenda provides the technical R&D road-maps to achieve those objectives.

But funding is a crucial issue for any technology research, and nuclear research is no exception. Therefore, we are putting great hopes in the forthcoming publication of the Commission's communication on the funding of the SET Plan.

Coming to the organisation and mission of the Platform itself, we are increasingly convinced that by associating closely industry and research, SNE-TP will play a key role in coordinating and facilitating fission research at the European level. Reflections have begun to adapt the Platform's organisation to meet these challenges. The Member States Mirror Group and Funding Mechanisms Working Group to be established next year will bring additional support to the operations of the Platform.

In conclusion, I am very pleased that our first General Assembly is gathering over 200 participants, from member organisations and from the public at large. This event is a unique opportunity to discuss the achievements since the launch conference over a year ago, as well as the future of our organisation.

Bernd Güthoff  
Member of Executive Board,  
E.ON Kernkraft GmbH,  
Vice-Chair of SNE-TP



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## SNE-TP publishes its Strategic Research Agenda (SRA)

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SNE-TP will present its Strategic Research Agenda at the first General Assembly, in Brussels, on November 26, 2008. The SRA was drafted by a group of over 100 researchers and engineers representing industry, research, academia and technical safety organisations.



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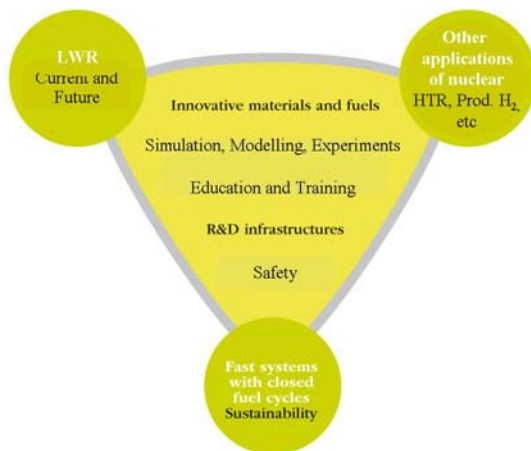
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Topic leaders were responsible for organising the writing of their chapter – and I wish to thank all of them for the dedication they showed in this process. The document was reviewed several times by a large community of SNE-TP actors including FP6 Project coordinators, and organised to reflect the three different technological challenges illustrated below, together with the “cross-cutting” issues:



Annexes of the document include detailed roadmaps as well as “long term” R&D topics which were not selected as main priorities of the Platform. Following the General Assembly, the final draft document will be uploaded onto the SNE-TP website for a public review process. The final publication of the SRA is foreseen in the beginning of 2009.

SRA Chairman, H. Ait Abderrahim, SCK•CEN

## 3<sup>rd</sup> Meeting of the European Nuclear Energy Forum, Bratislava, 3-4 November 2008

Hosted by the Slovak government, the third plenary meeting of the European Nuclear Energy Forum (ENEF) took place in Bratislava on 3 and 4 November 2008, gathering more than 200 high-ranking participants from relevant stakeholders to discuss transparency, risks and opportunities of nuclear energy.

In his welcome message to the Forum, Commissioner Piebalgs highlighted the importance of investing in low carbon electricity generation. He also confirmed that the Commission will present in a few weeks a revised proposal for a Directive on nuclear safety.

Building on the preparatory discussions in the ENEF working groups on 'Transparency', 'Risks' and 'Opportunities', the Forum examined the following issues:

The Forum called for improved "*transparency of nuclear energy*" promoting a 'culture of active information'. This should become a priority for all key actors in the nuclear Community in order to build trust and understanding. To this effect the Forum supports the efforts already initiated by the Commission to facilitate the distribution of objective and reliable information.

As regards "*risks of nuclear energy*" the Forum supports the establishment of an EU legal framework for nuclear safety responding to the public demand as underlined by all Eurobarometer surveys.

Further efforts in the field of education and training also need to be developed establishing the bridge between universities, companies and civil society.

On the "*opportunities of nuclear energy*" the Forum examined various possible options for translating cost aspects of nuclear energy into energy prices for the final consumer. The Forum specifically referred to the Finnish model where large energy intensive industries become shareholders of nuclear power plants, allowing them to benefit from energy prices at cost. Another option is based on consortia regrouping large electricity consumers, which allow them to benefit from more competitive electricity prices.





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In the context of the need to replace 50 % of the EU electricity generation capacity in the coming decades, ENEF stated that it is time to reconsider the EU grid concept. The new European smart grid should be more secure, efficient and integrated and will need to take into account large power plants guaranteeing essential base load electricity for the EU economy, as well as small decentralized power plants resulting from the rapid development of renewable energy.

Ph. Pradel, Chair of SNE-TP, was invited to give a speech in which he informed the members of the ENEF of the forthcoming publication of the Strategic Research Agenda, and the preparation of a European Industrial Initiative for Gen-IV "sustainable fission" technologies. He stressed the necessity to fund research, development and demonstration projects, and identified some key topics which the Forum could address in the future such as the recycling strategies to be put in place for a successful deployment of Gen-III and Gen-IV reactors.

The next plenary session of the Forum will take place in Prague under the Czech Presidency on 28 and 29 May 2009.



SNE-TP Secretariat

[http://ec.europa.eu/energy/nuclear/forum/meetings/2008\\_november\\_en.htm](http://ec.europa.eu/energy/nuclear/forum/meetings/2008_november_en.htm)

## Publication of the next Euratom FP7 Call



The European Commission has just published the 3<sup>rd</sup> call under FP7 Euratom.

[http://cordis.europa.eu/fp7/euratom-fission/home\\_en.html](http://cordis.europa.eu/fp7/euratom-fission/home_en.html) (see "Find a Call")

## EURADWASTE Conference, Luxembourg, 20-22 October 2008

The conference was a success with over 280 registered participants. Issues such as Partitioning and Transmutation, and the relation with geological waste disposal were discussed.



Finally, the establishment of a new Technology Platform entitled IGD-TP (Implementing Geological Disposal Technology Platform) was announced.

Summaries of the conference may be found at: [http://cordis.europa.eu/fp7/euratom-fission/euradwaste2008\\_en.html](http://cordis.europa.eu/fp7/euratom-fission/euradwaste2008_en.html).

The Commission also published the following news alert concerning IGD-TP: <http://ec.europa.eu/research/index.cfm?pg=newsalert&lg=en&year=2008&na=na-201008>



## The Strategic Energy Technology (SET) Plan

The SNE-TP is preparing the basis of the European Industrial Initiative (EII) for "Sustainable Fission", to be launched in the second half of 2009.

The nuclear fission EII will address the need for demonstration of Gen-IV Fast Neutron Reactor technologies, together with the supporting research infrastructures, fuel facilities and R&D work. As indicated in the SRA document, SNE-TP has prioritized the different Gen-IV systems and



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is proposing to develop two technologies in parallel:

- The sodium-cooled fast neutron reactor technology as the reference solution, with the construction of a prototype around 2020 in France, which is strongly supporting this technology.
- An alternative technology – either lead-cooled fast reactor or gas-cooled fast reactor – with the construction of an experimental reactor to demonstrate the technology, in another European country willing to host this programme.

SNE-TP set up a Task Force group to work on the definition of the EII. This group, comprising research organisations and interested industrial partners (technology provider and utilities), has estimated the cost of the EII to between 6 and 10 billion €, including the cost of the demonstrators, the supporting research and fuel facilities, and the necessary R&D work over a period of 15 years.

Although this EII is intended to be partially funded through public/private partnerships, it is clear that Community funding will be necessary, and SNE-TP is looking forward to the future communication of the Commission on the funding of the SET Plan.

technology demonstrators with the objective to make recommendations to the Platform.

- the set up of a network of research infrastructures to support the R&D work.

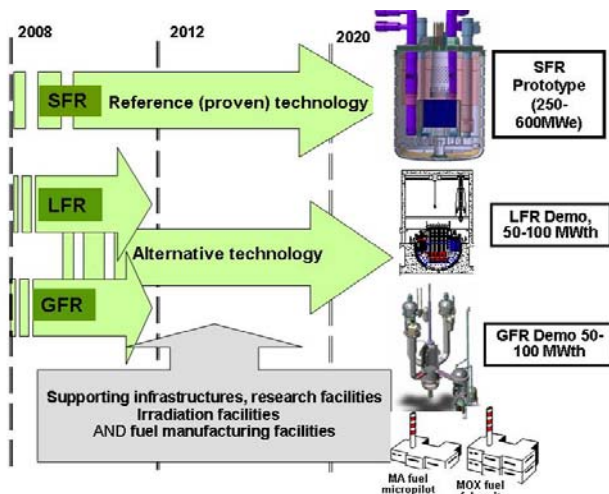
Both these projects will be funded by the Euratom Framework Programme.

Y. Kaluzny, CEA

## Who are the members of SNE-TP? The Polish Nuclear Technology Platform



On 7 September 2007, an initiative group of 14 industry, academia and R&D institutions established the Polish Nuclear Technology Platform (PPTN). The observer status was granted to the President of the Polish National Atomic Energy Agency (Prof. J.Niewodniczański) and the former Polish Prime Minister Prof. J.Buzek, MEP - rapporteur of the SET plan. The Platform is currently coordinated by the Andrzej Soltan Institute for Nuclear Studies in Swierk (IPJ). It is open for new members and observers.



In the meantime, two actions are foreseen:

- the set up of a study by a consultancy company to review all possible funding means as well as the possible legal structures of the different

Although no nuclear power plant operates in Poland, the Platform has considerable experience in application of nuclear technologies in all domains of economy and social life, in particular: power engineering industry, material technologies, industrial diagnostics, health care, environment protection, safety and security systems. Research infrastructures consist of 30MWth research and material testing reactor MARIA, 2-60MeV proton accelerators, 2-20MeV electron linacs, plasma focus facilities, etc.



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Commercial production includes medical and industrial accelerators as well as radioisotopes. The industrial members of the Platform include PGE – the largest Polish energy company and Cuprum KGHM – one of the world's main producers of copper and silver, as well as Pomeranian Special Economic Zone and Wrocław Technology Park (WTP).

On May 29, 2008 (2<sup>nd</sup> Governing Board meeting of SNE-TP), WTP became a member of SNE-TP together with four research institutes: Institute of Nuclear Chemistry and Technology in Warsaw, Institute of Atomic Energy in Swierk, The Andrzej Soltan Institute for Nuclear Studies in Swierk and Institute of Nuclear Physics of Polish Academy of Sciences in Cracow.

The research sector of PPTN also includes AGH University of Science and Technology in Cracow, University of Warsaw, Warsaw University of Technology and Institute of Plasma Physics and Laser Microfusion in Warsaw. Academia and R&D members of PPTN have substantial capacity in the basic and applied research in physics, chemistry and material sciences, related to nuclear technologies. Research is conducted through numerous Polish government and EU funded programs. Platform members participate in major nuclear and particle physics European projects, including the Large Hadron Collider at CERN-Geneva, accelerator complex FAIR at GSI-Darmstadt, fusion reactors W7-X in Greifswald and ITER in Cadarache.



PPTN activities include: the preparation of Polish and European Strategic Research Agendas,

integration of industrial and R&D efforts, commercialisation of the results, expertise exchange, strengthening competitiveness of Polish and EU economy through the use of nuclear technologies, promotion and popularisation of all aspects of nuclear technologies, participation in policy creation and law making processes in relevant areas.

To help PPTN Members and all interested in the field, a Contact Point ([BPK-TJ@IPJ.GOV.PL](mailto:BPK-TJ@IPJ.GOV.PL)) for Nuclear Technologies has been established. It will stimulate exchange of ideas; assist in forming project consortia, applying for funds, proper project execution and application of results for industry and society.

Grzegorz Wrochna, Chair of PPTN, Director of IPJ

## 6<sup>th</sup> Euratom FP Projects: NULIFE Network of Excellence



NULIFE is the Network for Nuclear Plant Life Prediction, with over 40 participating organizations. The initial Five-Year Programme of NULIFE is partly funded by the EC through the EURATOM Framework Programme 6 Network of Excellence instrument.

NULIFE has a leading position in European nuclear PLIM (Plant Life Management) research at the moment. Along with the nuclear "renaissance" there are many networking and planning activities going on or planned. NULIFE members are strongly involved in the Sustainable Nuclear Energy (SNE) Technology Platform (TP) activities. I am chairing the Executive Committee of the Platform; and Valéry Prunier, EdF chairs the GEN II and III subgroup of the Strategic Research Agenda Group. Many NULIFE organisations are also represented in the Deployment Strategy Group and in the Governing Board of SNE-TP.

NULIFE has set up several expert groups to support different projects. Expert Group on Materials (EG1) has concentrated on metallic materials and made the State of the Art report on Priority R&D and harmonisation areas. EG1 has



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supported Stress Corrosion Cracking (SCC) and Thermal Fatigue (TF) pilot projects. Finally, Expert Groups on Integrity & Lifetime (EG2 & EG3) have produced a state of the art report on structural integrity assessment and lifetime prediction tools and procedures.

Additional information on the pilot projects may be obtained from the following contact persons:

- Stress corrosion cracking,  
[rbosch@sckcen.be](mailto:rbosch@sckcen.be)
- Thermal fatigue, [thierry.payen@cea.fr](mailto:thierry.payen@cea.fr)
- Instrumentation & Control,  
[laurent.doireau@edf.fr](mailto:laurent.doireau@edf.fr)
- Dissimilar metal welds,  
[elisabeth.keim@areva.com](mailto:elisabeth.keim@areva.com)

Coordinator: Rauno Rintamaa,  
[Rauno.rintamaa@vtt.fi](mailto:Rauno.rintamaa@vtt.fi),  
website: <http://nulife.vtt.fi>



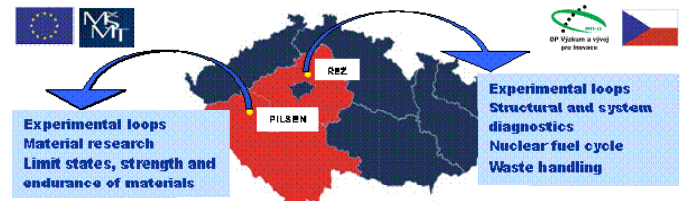
More information on FP6 and FP7 projects may be found on the Platform's website:  
<http://www.snetp.eu/scripts/home/publigen/content/templates/show.asp?P=121&L=EN&ITEMID=6>

## Use of structural funds to build up research infrastructures: the "Sustainable Energy" Project of the Czech Republic

The project "Sustainable Energy" is intended to be realized through the Czech Operational Programme Research and Development for Innovations (OP RDI) within the frame of the European Regional Development Fund (ERDF) as an application of the Lisbon Strategy.

The main objective is to strengthen the regional research, development and innovative potential of the Czech Republic for growth, competitiveness and job creation, so that the Czech Republic becomes an important European point of concentration of these activities. The project

should be realized as bi-regional – in Řež (Central Bohemia) and in Pilsen (South-western region).



Nuclear energy, particularly focused on the research and development of GEN IV power plant technologies, represents the main topic of the project. Other fields of R&D are included: system and structural diagnostics, material research, nuclear fuel cycle, and waste handling.



Supercritical CO2 loop

The applicant, the 'Research and Technological Centre for Sustainable Energy' which will be a subsidiary organization of the Nuclear Research Institute Řež plc, meets all requirements for research organization, and the research and development will be indeed the major domain of its operation. Nevertheless, a tight connection with industry (fostering the technology transfer) and with educational institutions (supporting masters and PhD students) is also planned.

After successfully passing through the first call, the project has been pre-accepted by the governing body of OP RDI, Ministry of Education, Youth and Sports of the Czech Republic, and placed into the so-called short-list of the projects over 50 millions €. If approved by the European Commission, the "Sustainable Energy" project



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will be finalized by 2014. The total costs should not exceed 100 million €, 75% of which should be dedicated to the construction of technology infrastructures.

Jakub Prahl, UJV Rez

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## SNE-TP a “European” Technology Platform

SNE-TP has recently been recognized as a European Technology Platform, fulfilling all the criteria of ETPs such as openness and transparency. It is now listed on the CORDIS site of technology platforms, and SNE-TP will be invited to participate in events organised by the Commission for ETP leaders.

See the CORDIS site for information about ETPs, including the recently published report on the evaluation of ETPs:

[http://cordis.europa.eu/technology-platforms/home\\_en.html](http://cordis.europa.eu/technology-platforms/home_en.html)

SNE-TP Secretariat

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## Recent events: GEN4FIN Seminar, 2-3 October 2008

### GEN4FIN

THIRD FINNISH SEMINAR ON  
GENERATION IV NUCLEAR ENERGY SYSTEMS  
2.-3.10.2008 in Lappeenranta



In the frame of the NETNUC project of the Sustainable Energy (SusEn) research program of the Finnish Academy, the University of Lappeenranta organised a seminar on Generation

IV systems and technologies on October 2-3 2008. Invited lecturers came from both Finland and from other European countries. Presentations on different Gen-IV systems (SCWR, SFR, GFR, and HTR) were made, as well as on fuel cycle, thermal-hydraulics and core physics.

More information on GEN4FIN can be found at:

<http://virtual.vtt.fi/virtual/gen4fin/index.htm>

See also:

<http://www.vtt.fi/inf/pdf/workingpapers/2008/W90.pdf>

More information: [arto.ylonen@lut.fi](mailto:arto.ylonen@lut.fi)

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## Future events:

**Clean coal and nuclear technologies for combating climate change**, Conference in Bedlewo-Poznan, Poland, December 7-9, 2008

Website: <http://www.kpk.gov.pl/poznan>

**MATGEN4**: 2<sup>nd</sup> School for Materials for Generation IV nuclear reactors, Ice Hotel Jukkasjärvi, Sweden · February 2-7 2009. For PhD students and young scientists.

Website: [www.neutron.kth.se/MATGEN-IV](http://www.neutron.kth.se/MATGEN-IV)

**ANIMMA 2009**, Advancements in Nuclear Instrumentation, Measurement Methods and their Applications, Marseille, France, 7-10 June 2009. Website: <http://www.animma.com/>

**FISA-2009**, the conference focused on Euratom FP-funded research for nuclear reactors and fuel cycle, will take place in Prague on June 22-26 2009. Check the CORDIS FP7 Euratom site for regular update on this conference: [http://cordis.europa.eu/fp7/euratom-fission/fisa2009\\_en.html](http://cordis.europa.eu/fp7/euratom-fission/fisa2009_en.html)

**ICONE-17**, 17<sup>th</sup> International Conference on Nuclear Engineering, 12-16 July 2009, Brussels, <http://www.asmeconferences.org/icone17> (note that deadline for abstracts is 3<sup>rd</sup> December 2008)

**2009 Frédéric Joliot/Otto Hahn Summer School on Nuclear Reactors**, “Physics, Fuels, and Systems“, Forschungszentrum Karlsruhe, Germany, 26. August - 4. September 2009, for



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PhD students and young scientists, Website:  
[www.cad.cea.fr/fjoh](http://www.cad.cea.fr/fjoh) and [www.fzk.de/fjohss](http://www.fzk.de/fjohss)

**GLOBAL 2009**, The Nuclear Fuel Cycle:  
Sustainable Options and Industrial Perspectives,  
Paris, France, 6-11 September 2009,  
[https://www.sfen.fr/index.php/plain\\_site/global\\_2009](https://www.sfen.fr/index.php/plain_site/global_2009)  
(note that the deadline for abstracts is 15<sup>th</sup>  
December 2008)

See also the event page of the SNE-TP Website.

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**Young researchers' corner: training courses,  
summer schools and list of opportunities for  
PhDs, post-docs and internships:**

Members of SNE-TP may advertise research  
positions in this section.

The ENEN website also provides information  
about scholarships, fellowships, post-doc  
positions, etc.

[http://www.enen-  
assoc.org/en/opportunities.html](http://www.enen-assoc.org/en/opportunities.html).

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**Contacting the secretariat:** at the following  
email address: [secretariat@snetp.eu](mailto:secretariat@snetp.eu).

Access to the **internal workspace** of the Platform  
(*members only*): <https://extranet.snetp.eu>. If you  
do not have a login and password, contact the  
secretariat at the above address.

**Future change in the secretariat:** under the 2<sup>nd</sup>  
FP7 Euratom call, the Commission will fund the  
activity of the secretariat for 2 years. A  
consortium led by LGI Consulting entitled "SNE-  
TP Office" and including CEA, E.ON, UJV and  
FORATOM representatives will take over from the  
present secretariat at the beginning of 2009.

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Director of publication: Ph. Pradel, Chair SNE-TP.  
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