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SNETP
Newsletter n°9

November 2011

A few words from the new SNETP ExCom Chairman

- **The SNETP has reached its 100 members**
- **The third SNETP General Assembly takes place in Warsaw as a side event of the SET Plan conference on 29-30 November 2011.**
- **SNETP Secretariat is launching the SNETP Members Directory**

Following the approval of the SNETP Governing Board on the 5th of October, SNETP has now reached a total of 101 members. This number is a key indication of the interest towards activities by the technology platform and its capacity to federate the know-how and the innovation capabilities in Europe on nuclear fission technology development. As a fact, the number of members is not a final target but it is an important encouragement towards a clear recognition of the role of nuclear energy in Europe`s energy mix and to its contribution to achieve the EU's energy policy goals: economic competitiveness, security of supply and reduction of the greenhouse gas emissions.

As foreseen in our internal rules, a new Executive Committee has been appointed for 2 years, and first met in Paris in June 2011, then in Amsterdam in September. During the last four years and in the continuity of the Vision Report, a lot of work has been accomplished with the publication of the Strategic Research Agenda (2009), the Deployment Strategy (2010) and the strategy in Education and Training (2011). I would like to warmly thank the former Chairman of the Executive Committee, Rauno Rintamaa, for his personal commitment to achieve this work, and also all colleagues who actively participated in this work.

Now, the SNETP has to face new challenges with the implementation of its defined strategy, while reassessing it following the first lessons learned from the Fukushima accident. The recent meetings of Executive Committee and the Governing Board have given the following guidance to the Technical Working Groups:

- For the Gen II/III TWG, the merging process with NULIFE is now agreed with clear milestones both on the administrative point of view and on the definition of the technological roadmap. A new association called NUGENIA will be formally created in November 2011 with the objective to be fully operational by summer 2012 when it will officially take over from NULIFE and the SNETP working group. Discussions are under way with SARNET, the network of competences on severe accident, to join the new association;
- Progress is also under way for the cogeneration "pillar" – with the creation of an alliance comprising industrial companies interested by the use of nuclear heat in industrial processes; this association will apply for membership in the SNETP. In addition a concept paper to shape a future European Nuclear Cogeneration Industrial Initiative is under finalization.
- ESNII, the initiative on sustainable nuclear energy is also well in line and progress is made on its constitutive projects: ALFRED, ALLEGRO, ASTRID and MYRRHA.

Among other challenges being faced by SNETP we have to consider the recognition of the need for a continuous budgetary support from the European Union within the future programme HORIZON 2020 (replacing the current Framework Programmes) and other financial schemes, especially for ESNII. The SNETP Executive Committee and the Governing Board are finalizing a position paper to express to the European Commission and to the European Parliament the view of the Platform on the role of nuclear energy in the realization of the objectives of the SET Plan and about the European strategic dimension of such role.

The third SNETP General Assembly on November 29th will be a great opportunity to discuss further how to face these challenges and I am looking forward the active participation of the SNETP members.

Yves Kaluzny
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SNETP
Sustainable Nuclear Energy Technology Platform

NC2I (Nuclear Cogeneration Industrial Initiative)

Nuclear cogeneration, a potential game changer in the climate change challenge

The nuclear cogeneration task force in SNETP investigates and supports the potential for adopting nuclear energy for applications other than electricity production. This potential ranges from making use of waste heat of existing nuclear power plants, thus increasing system efficiency, to the development of a specific system such as High Temperature Reactors (HTR) devoted to reliable energy supply for industrial processes. Because nuclear energy could subsequently be delivered in many different forms (steam, compressed air, very high temperature heat, hydrogen, electricity), the term nuclear cogeneration was adopted to encompass all possible applications. Nuclear cogeneration, although at rather small scale and low temperature, is current practice in a number of countries. Applications include steam for paper mills or hot water for district heating.

To unlock the high potential of this technology in view of the SET Plan targets, nuclear cogeneration has to be used at a larger scale and at higher temperatures. Key aspects to be addressed in nuclear cogeneration are technical feasibility, economic viability and safety/licensability. Additionally, not only two main stakeholders are involved (power plant builder (vendor), and power plant operator (utility)) in nuclear cogeneration, but three, including an end user, who is generally not accustomed to nuclear technology.

> **"…this technology could be a real game changer."**
>
> *Fred Moore, Dow Chemicals in National Geographic, October 2011*

Therefore, the FP7 EUROPAIRS project[1] was set up, which succeeded to have the nuclear community work closely together with non-nuclear end users. The project initially focused on exchanging information and matching industrial requirements with nuclear technology specifics, and then identified potential issues and their resolution. EUROPAIRS was completed in May 2011.

From the EUROPAIRS consortium a number of end user industries indicated their interest in HTR technology as a future alternative to fossil energy for use in their production processes. A very large medium term potential market was identified, namely the combined supply of high temperature steam and electricity for the bulk chemicals industry (e.g. ethylene, fertilizers, refineries, etc.). An even larger application potential lies ahead once HTR can power hydrogen production processes which would enable CO_2-free syngas and synfuel production; and strong synergies have been found with the development of advanced low-carbon steelmaking processes.

These end users together with nuclear vendors, utilities and engineering companies are now getting formally organized in a European "alliance" (name is still pending). This alliance is a parallel structure to the "US Industry Alliance for NGNP[2]", in terms of strategy, goals and scope. It is expected to apply for SNETP membership shortly. End user companies that currently consider membership are Solvay, Air Liquide, Dow Chemicals Europe and Pulawy, joined by the utilities E.ON and Fortum, the vendors AREVA and Westinghouse as well as the engineering companies AMEC, Empresarios Agrupados and Prochem. This is an open process, and other companies may join in the coming weeks.

First meeting of the industry alliance on 22nd of September 2011 in Berlin

Simultaneously, the nuclear cogeneration task force, in close collaboration with the members of this alliance, is preparing a "Concept Paper" to outline the motivation and objectives of a future "Nuclear Cogeneration Industrial Initiative" in view of demonstrating this technology as part of the SET-Plan. This document describes the roadmap towards a nuclear cogeneration prototype by the early 2020s. The prototype shall consist of an industrial process coupled to a nuclear heat source and shall demonstrate the viability in terms of technology, economy and safety. It is focusing on the use of HTR technology, drawing from the large European experience, and targeting the prototype to be a first-of-a-kind, after which the next steps to deployment are taken on a commercial basis by duplication with minor adjustments.

Like for any other large energy infrastructure project, demonstration involves significant risks. This is why the prototype programme is proposed as an Industrial Initiative under the SET-Plan. The SET-Plan supports energy technologies in becoming market ready, and assists in taking the first hurdles by financial support. This Nuclear Cogeneration Industrial Initiative (NC2I) will be presented at the upcoming SET-Plan Conference in the end of November in Warsaw.

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1. www.europairs.eu

2. NGNP, the Next Generation Nuclear Plant, is the planned nuclear cogeneration demonstrator in the US.

News from Technology Working Group Gen II & III

Creation of NUGENIA – Nuclear Gen II&III Association

The Technology Working Group Gen II & III forms the first pillar of the SNETP. Its role is to:

- establish the **roadmap** and priorities of the R&D in the area of Gen II and III reactors
- propose a **mode of cooperation** between the different stakeholders in performing the R&D in the form of projects and programs : identification, decision, administration and financing, identification of resources, scope for EU funding and alignment with Euratom FP objectives, general rules for dissemination of results and intellectual property management,
- organize the **interactions** with European initiatives, national programmes, and international initiatives, such as NULIFE and SARNET, ETSON, IAEA, OECD-NEA, JRC, FORATOM, IFRAM…,
- analyse the possible advantage of cooperation with **parties outside SNETP** and recommend ways to organise such cooperation.

The efficient use of the various existing networks carrying out collaborative research, such as NULIFE and SARNET, has quickly become a priority to avoid redundancy and obtain higher efficiency. The idea of the integration of these three groups has emerged late 2010 and grew stronger and stronger in 2011. The approach was confirmed by repeated endorsements of both NULIFE and SNETP Executive Committees and Governing Boards, lastly on October 5, 2011. Accordingly a participating process of all entities has been put in place, managed by an Ad Hoc group. The preparation made by NULIFE to create a sustainable entity has been used and enlarged to prepare a legal entity dedicated to Gen II & III. It was negotiated to gather all activities within the Gen II & III scope into 7 technical areas as follows:

1 **Plant safety and risk assessment**
2 **Severe accidents**
3 **Core and Reactor performance**
4 **Integrity assessment and ageing of Structures-Systems-Components**
5 **Fuel, waste management (all but GD) and dismantling**
6 **Innovative Gen III design**
7 **Harmonisation**

This entity will be named NUGENIA (Nuclear Gen II & III Association), International Non-Profit Association according to the 1923 Belgian law. Its establishment is set on November 14, 2011 in Brussels by the partners having made the preparation. It will be open right after to all nuclear stakeholders in the field of Gen II & III. Its first General Assembly is set up on March 20, 2012. Its annual plenary technical meeting with a clear focus to create new R&D projects and manage the existing portfolio is set up on March 26-28, 2012 in Budapest.

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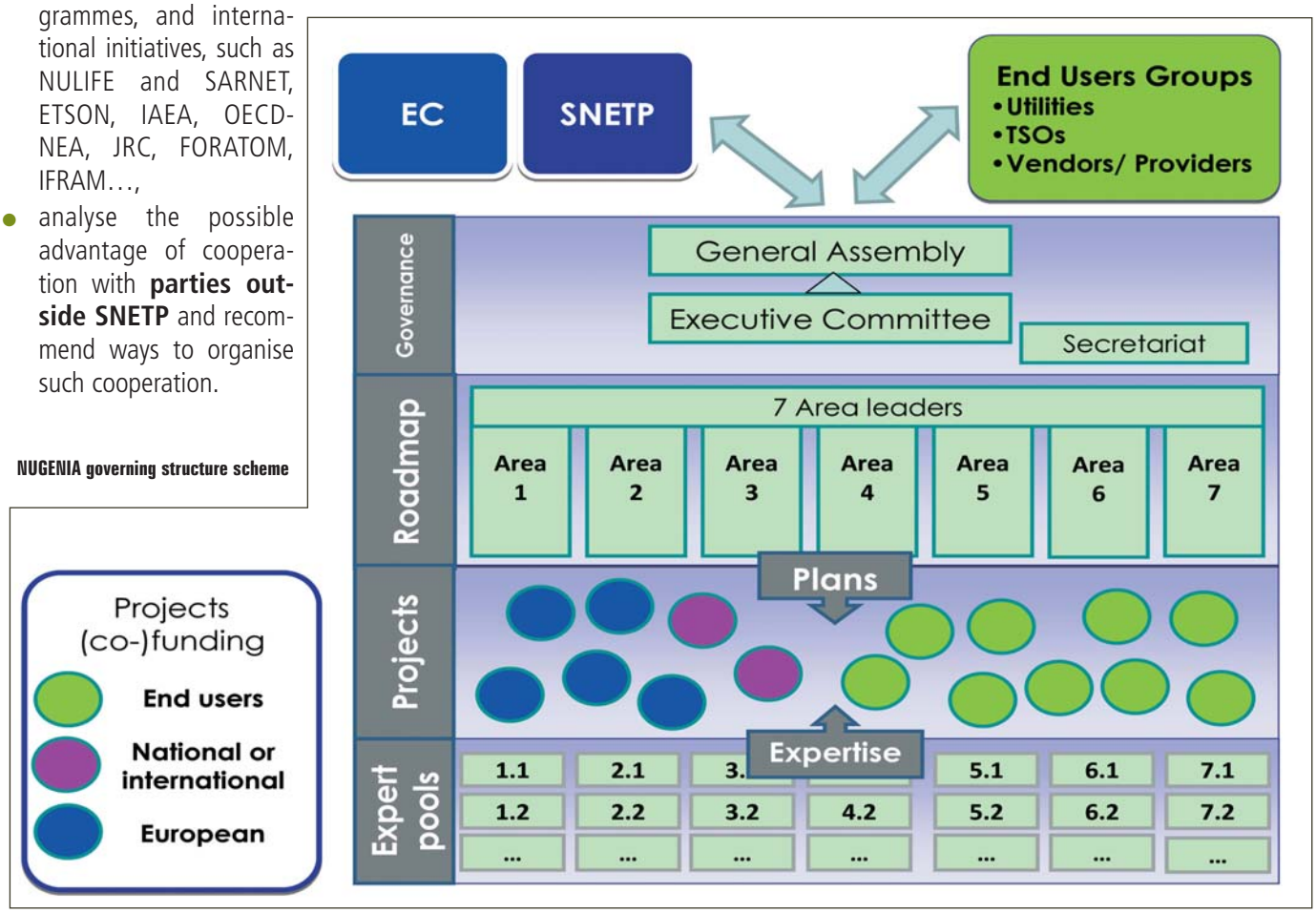

NUGENIA governing structure scheme

ADRIANA (ADvanced Reactor Initiative And Network Arrangements)

Conclusions of the FP7 Euratom project

The EU FP7 project ADRIANA represents a joint effort of most research organisations participating in the EU's fast reactor programme.

"The project has successfully set up a network dedicated to the construction and operation of research infrastructures in support of the major projects within ESNII, the fast reactor systems with a closed fuel cycle", said Ivo Vasa, the project coordinator from ÚJV Rez plc.

The general objective of ADRIANA (adriana.ujv.cz) was targeted to support the development of the Gen IV prototypes ASTRID (SFR), MYRRHA & ALFRED (LFR) and ALLEGRO (GFR), i.e. to identify existing & needed nuclear research infrastructures for the European Sustainable Nuclear Industrial Initiative (ESNII – www.esnii.eu). Two major information packages were generated:

- Review & ranking of existing FR-related experimental facilities including instrumentation, diagnostics, irradiation facilities, hot laboratories and zero power reactors.
- Identification of the key issues, future needs and missing facilities and integration of the experimental needs into the time schedules of the prototypes. Newly built, refurbished or modified infrastructures are also covered here considering the transnational access to the experimental facilities.

The consortium of 15 institutes and research centers fulfilled this task within 18 months (February 2010 to July 2011) under the coordination of the UJV Rez in the Czech Republic.

The review of the SFR, LFR and GFR research facilities is structured from the point of view of material studies, thermal-hydraulics, coolant physical chemistry, testing of components & devices, in-service inspection, simulation of fuel behavior & core cooling in operational & accident conditions, etc. Nearly 100 facilities were identified and described during this process. For the ranking of the concerned facilities the criteria such as e.g. technical relevance, uniqueness, refurbishment costs, operating costs, time for availability were used.

Several new experimental facilities are currently under construction or under refurbishment. Concerning the instrumentation, the identified issues such as e.g. ageing of sensors and cables in the vicinity of the core can be solved long term only.

The achieved knowledge efficiently contributes to R&D of new nuclear systems and technologies specified in the SNETP Strategic Research Agenda, in compliance with the 2050 vision of the EU's policy. In the next 10 years preparations for the demonstration of a new generation (Gen IV) of fission reactors must be achieved, in order to contribute to the timely deployment of the sustainable nuclear energy production.

Following the outcomes of dedicated tasks within the project, the final ADRIANA roadmap shall become a basis for a regularly updated living document, identifying specific needs for nuclear research facilities in Europe. The results of the ADRIANA project could be the basis for the long-term coordination of Euratom programming under financial schemes of the HORIZON 2020, SET Plan, EIB, Structural funds and other possible funding sources in support of the construction of research infrastructures focused on nuclear fission.

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INTERNATIONAL CONFERENCE ATALANTE 2012

Nuclear Chemistry for sustainable fuel cycles
September 3-7, 2012 Le Corum, Montpellier, FRANCE

The next ATALANTE 2012 Conference will take place in Montpellier, France, 3-7 September 2012, following previous conferences in Avignon (2000), Nimes (2004) and Montpellier (2008). Organised by the French Alternative Energy and Atomic Energy Commission (CEA), these conferences provides an international forum for presentations and discussions on advances for future fuel cycles and waste management.

Nuclear energy has more than ever to demonstrate that it can contribute safely and on a sustainable way to answer the international increase in energy needs. Actually, in addition to an increased safety of the reactors themselves, its acceptance is still closely associated to our capability to reduce the lifetime of the nuclear waste, to manage them safely and to propose options for a better use of the natural resources. This cannot be achieved only by optimizing industrial processes through engineering studies. It is of a primary importance to increase our fundamental knowledge in actinide sciences in order to build the future of nuclear energy on reliable and scientifically-founded results, and therefore meet the needs of the future fuel cycles in terms of fabrication and performance of fuels, reprocessing and waste management.

For its fourth edition, the organisers propose to focus the ATALANTE Conference on the nuclear chemistry issues for all the fuel cycles and waste management options by giving the floor to the international nuclear chemistry community through more than 150 oral contributions. In addition, a poster session will be the opportunity to enlarge this number of contributions.

Abstract submission and registration will open next December 2011.You can find all the information on the conference website (www.atalante2012.org).

MetroFission

Metrology for New Generation Nuclear Power Plants

EMRP
European Metrology Research Programme
Programme of EURAMET

The EMRP is jointly funded by the EMRP participating countries within EURAMET and the European Union

This EMRP (European Metrology Research Programme) project is looking at solving metrological problems related to a new generation of nuclear power plants. The proposed Generation IV power plants are designed to run safely, make efficient use of natural resources, minimize the waste and maintain proliferation resistance. The proposed designs include features such as reactor operation at higher temperatures, high-energy neutrons, recycled types of fuel where minor actinides etc. Hence, the MetroFission project aims to address the mentioned challenges by specific scientific and technological objectives by:

- a) Contributing to improved temperature measurements for nuclear power plant applications by expanding on established methods such as thermo couples and by innovative science such as acoustic thermometry.
- b) Contributing to improved thermochemical data and modelling for nuclear fuel design by modelling a range of major and minor actinide containing systems relevant to fuels. Thermodynamic models are being developed to represent the variation of the thermodynamic properties of the various phases of these materials, which could form with temperature and composition.
- c) Development of reference metrological setups and methods for the measurement of thermal properties of advanced materials at high and very high temperature. Reference metrological setups and methods are being implemented or improved for measurements up to 2000°C (1500°C in the case of specific heat of solids). Suitable candidate materials to be used by nuclear research laboratories as "transfer reference materials" for high temperature thermal properties are being identified and characterised.
- d) Contribute towards improved neutron cross-section data through neutron fluence measurements and standards.
- e) Measurement of nuclear decay parameters and emission probabilities of priority nuclides.
- f) Development of techniques based on Digital Coincidence Counting (DCC) and Triple-to-Double Coincidence Ratio (TDCR) for radionuclide standardisation. The general aim of this part of the project is to enhance operation of new generation nuclear power plants by enabling on-site determination of low-energy beta-emitters created in the fuel cycle (e.g. Pu-241) and/or as activation products in the reactor and its enclosure (e.g. S-35, Ni-63, Ca-41, H-3 etc.).

EURAMET
European Association of National Metrology Institutes

The consortium recently presented ongoing work in a special MetroFission session at IMEKO2011. The papers from this conference and more information about the project can be found at http://projects.npl.co.uk/metrofission/.

The three-year MetroFission project started in September 2010 and has 12 partners from 10 European countries.

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SNETP
Sustainable Nuclear Energy Technology Platform

PRESS RELEASE

SNETP welcomes its 100th member!

5 October 2011

Meeting today in Ljubljana, the Governing Board of the Sustainable Nuclear Energy Technology Platform (SNETP) voted to approve five new membership applications bringing the total membership to 102 organisations.

Established in September 2007 with the backing of the European Commission, the Platform promotes and coordinates research activities in the field of nuclear fission. The members are drawn from industry, research, safety organisations, universities and non-governmental bodies based in Europe, all having a common interest in developing **safe and sustainable nuclear power**. The goals of SNETP are closely aligned with those of the EU's Strategic Energy Technology Plan (SET-Plan).

SNETP's work programme was defined in a Strategic Research Agenda document adopted in June 2009 and falls under three main areas. The first focuses on maintaining and improving the safe and efficient operation of the current **Generation II and III** nuclear reactors and will take full account of the lessons learned from the recent Fukushima accident. The second is about developing the **Generation IV** fast neutron reactors with closed fuel cycle, i.e. capable of extending the world's uranium fuel reserves by factors up to 100, whilst at the same time the amount of radioactive waste requiring long-term (ESNII) on fast reactor development [illegible] Finally, the third

The SNETP has already welcomed 101 members since its launch in 2007

You can read the full press release at www.snetp.eu.

Candidate organisations are invited to contact the secretariat (secretariat@snetp.eu).

Who are the members of SNETP?

National centre for nuclear research in Poland (NCBJ)

Focus on the National centre for nuclear research in Poland (NCBJ)

Two research Institutes located in Swierk close to Warsaw, Poland (the Andrzej Soltan Institute for Nuclear Studies and the POLATOM Institute of Atomic Energy) were merged into a new National Centre for Nuclear Research (NCBJ) on September 1, 2011. The Swierk nuclear research centre was built during the '50 decade in 20th century. NCBJ Center facilities include the MARIA research nuclear reactor of 30 MW power, research labs/manufacturing facilities focussed on particle accelerator technologies, plasma technologies, ionizing radiation detectors, and material research. The Centre runs a radioisotope production facility and an education/popularization centre. The NCBJ Institute is to play the role of a Technical Support Organization in the Polish nuclear power programme, both within the nuclear power plant construction phase, and during plant operation.

Research potential

About 1000 scientists, technicians and auxiliary personnel work in NCBJ. The Centre premises occupy almost 40 ha of land in Swierk. The MARIA nuclear reactor, the largest NCBJ research facility, was thoroughly modernized several years ago. Material research labs and particle accelerator manufacturing/testing/commission-ing facilities operated in NCBJ are well equipped. Swierk-manufactured facilities for hot-plasma research are operated both in Swierk and outside the Institute. The POLATOM radioisotope production Centre is one of the leading manufacturers of radiopharmaceuticals operating on world markets, many innovative products have been developed in its research labs. New labs currently under development in NCBJ will be oriented at application of nuclear methods to modify engineering material properties. Putting into operation of a zero-power nuclear reactor for training and educational purposes is considered.

Pure research and international collaborations

A high scientific level of the Institute is rooted in the conducted pure research. Most of about 300 scientific papers published annually by the NCBJ staff result from some basic research. A strong Theoretical Physics Department and a strong Cosmic Ray Physics Department operate in the Institute; the latter Department runs its own underground lab in the Lodz city. Groups of our experimenters supported by theoreticians participate in many international collaborations run in CERN Geneva, GSI Darmstadt, T2K in Japan. We participate also in construction of some new large research tools such as the XFEL laser in Hamburg (NCBJ is a Polish input co-ordinator), the FAIR facility in Darmstad, the Wendelstein-7X stellarator in Greifswald. Participation in construction of such highly advanced devices helps to transfer technology to our Institute and stimulates development of our own technologies, such as the technology of covering resonating cavity surfaces with niobium, or the technology of manufacturing superconducting cathodes.

Applications and manufacture of equipment

Knowledge and skills acquired in pure research are often the basis for applied research and development conducted in the NCBJ Centre. NCBJ have been for years manufacturing accelerating structures for various CERN accelerators, medical accelerators, industrial (radiographic) accelerators. We have been also for years conducting applied research on ionizing radiation detectors and associated electronic circuits. Currently we are developing some new scanning systems for border and custom control. Besides, we have produced unique equipment for research conducted in space, have developed some technologies to modify properties of engineering materials, and have patented several novel detectors. Isotopes manufactured in the MARIA reactor are among other used to manufacture radiopharmaceuticals. POLATOM Radioisotope Centre became an important supplier of technetium generators for nuclear medicine.

Science and Technology Park

Many solutions worked out by NCBJ scientists are excellent starting points for commercialization. We hope that a project to build a Science and Technology Park in Swierk (that started recently) will speed those processes up. The Park is to attract investors and businessmen, offer them a wealth of new ideas for new products, provide them with an administrative support,

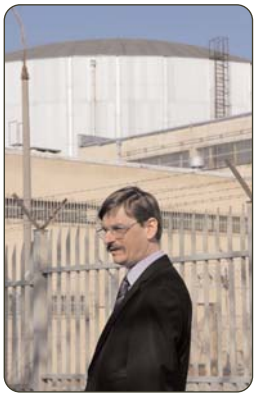
and help them to find financing. The Institute is also going to make available our own labs to the Park user should a need arise, as well as to provide Hi-Tech expertise.

Swierk Computing Centre for power industry and TSO

The project to develop a high-power Swierk Computing Centre (CIS) started in 2009. The project is co-financed by European Regional Development. The CIS Centre is going to operate several thousand processors, many-terabyte memory and several petabyte disk storage. To conduct calculations and safety analyses for nuclear facilities under design, development, construction or operation will be one of the priorities. CIS experts are being trained in using the most advanced computational codes to perform reactor computations, used by governmental nuclear regulatory offices all over the world.

TSO with a comprehensive research/expert background

NCBJ has managed to gather a rather comprehensive collection of people of complementary competences. This in hand with above listed advantages will soon allow NCBJ to smoothly undertake the responsibilities of a Technical Support Organization for all institutions engaged in the nuclear power programme in Poland. Thanks to the educational potential being built for years, NCBJ is going to play also an important role in public communication in relation to the programme.



Prof. Grzegorz Wrochna,
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New MS Linking for AdvaNced Cohesion in Euratom Research

NEWLANCER

Improving New Member States Participation (NMS) in Euratom Programme

The European Commission (EC) considers that New Member States (NMS) participation in the Euratom FP7 is still low compared to the OMS involvement despite some initiatives such as the NCP network, bonus evaluations for the proposals including NMS partners, events promoting Euratom FP in each NMS.

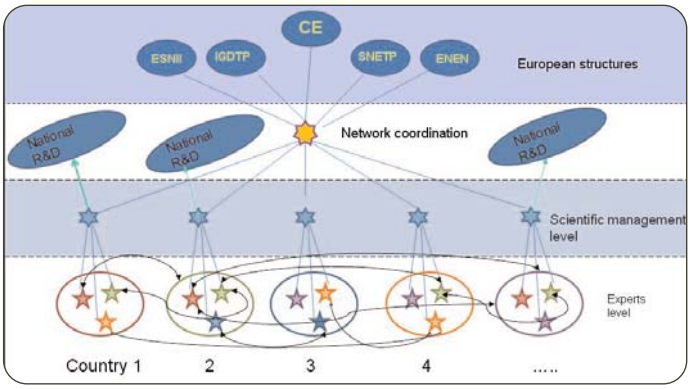
Greater involvement of NMS is seen by the EC as a part of necessary efforts in the nuclear energy area to increase cooperation, reduce fragmentation and avoid duplication, and also to improve the standard of research, to reinforce safety and environmental issues within projects, to improve operations, emergency planning, etc. Other European structures (SNE-TP, IGD-TP, MELODI, ESNII, EERA) have also endorsed in their programmatic documents the need for extended participation and integration.

Starting with November 2011, NEWLANCER will address all these aspects, through collaborative study developed by a consortium of 10 research institutes and universities from Bulgaria, Lithuania, Poland, Romania, Slovenia and Hungary and 5 research centers and consulting organisations from Belgium, France and Italy.

The main objective of this project is to identify and implement effective and efficient solutions leading to enlarged NMS involvement in future Euratom FPs by strengthening and catalyzing national R&D potential, by increasing cohesion between NMS institutions, and by improving their cooperation with OMS research centres.

The specific sub-objectives address:

- *Analysis of skills and current participation of NMS in Euratom Projects* aiming to review and assess NMS research capabilities and participation in Euratom R&D Programmes
- *Network for advanced cohesion in NMS nuclear research* aiming to create of a multi-level regional network having as mission to enhance cohesion and interact with national and European levels.
- *Good Practices and Recommendations* aiming to collect and analyze relevant cases on New and Old MS participation in Euratom Programmes
- *Dissemination* designed to ensure broad visibility of NEWLANCER achievements, to promote actual activities shared between networking partners, and to create links with European structures.



Network structure and links

NEWLANCER intends to bridge the gaps of fragmentation, resource imbalance and mutual ignorance by bringing into view and orienting the Euratom priority research themes, by making national and regional research more coherent and by joint priority setting. Identifying the complementarities at national, regional and European level may stimulate viable cluster formation in order to sustain high quality research.

Both NMS and OMS technical partners will review their capabilities and current involvement in Euratom FPs, with a view to how they could be more integrated in the future activities related to materials for **Fast Nuclear Reactors and ADS, Generation III and IV systems, nuclear safety, radioactive waste disposal, radioprotection and education & training.**

Networking activities for advanced cohesion in NMS nuclear research represent the "core" of the project intending to create a complex and dynamic network able to interact with European and national levels. The basic elements of the network will be the national expert groups created on each Euratom research field, according to the existing competence. Representatives of each national expert group will interact at regional level creating thematic regional expert groups. The network activity will be developed by seminars and technical meetings and will explore current capabilities, will identify opportunities for future project proposals, and will produce working plans for a long-time cooperation and an advanced cohesion at regional level. The NEWLANCER network will also create useful links with the national authorities, and with European structures.

Interacting activities will be developed at regional level through combined thematic visits and regional seminars. Representatives of relevant European structures having a major role in the nuclear research strategies (SNETP, IDGTP, MELODI, EERA, and ENEN) will be invited to give insights on the strategies and further development in nuclear fission research.

Expert group networking at regional level will produce a common vision on the future participation in European projects and also will contribute to the harmonization of national policies with European one.

Activities will be carried out in order to analyze from regional perspective the Technological Platforms documents (Strategic Research Agendas, Deployment Strategies) in the post Fukushima context. Each NMS will provide an integrated national position according to its own strategy, which will be merged at regional level.

NEWLANCER does not intend to produce changes in the vision, agendas or deployment strategies developed by these structures, but only to contribute to the expected updates of their documents in order to better reflect post Fukushima context from NMS point of view.

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Petten marks fifty years of Forward Thinking

The Dutch nuclear service provider NRG (Nuclear Research and consultancy Group) and the European Commission's Joint Research Centre-Institute for Energy and Transport (JRC-IET) - both located close to the seaside amidst the dunes of Petten (North Holland) - organize a series of happenings in November 2011, celebrating 50 years of collaboration and innovation in nuclear technology.

Two important early milestones will be celebrated. The first marks the signing of the so called 'site license agreement' 25th of July 1961 between the Dutch Government and The European Commission, which set the legal basis locate the European research centre in Petten. And secondly the High Flux Reactor (HFR) was started for the first time on Friday the 9th of November 1961.

Both milestones laid much of the groundwork for 'Petten' in becoming a major contributor to the world energy research and the production of medical isotopes - mainly molybdenum-99, which is used for medical imaging, (cancer) therapy and pain treatment.

The event calendar offers a wide range of events, all related to the theme 'Forward Thinking for 50 years and beyond'. November 22 NRG and JRC-IET organise a Grand Symposium for invited quests, with appealing keynote speakers and a provocative discussion about the future of nuclear research. Based on fifty years of experience, what will happen the next five decades? How will the Petten centre of excellence, and the new PALLAS reactor support the positive contribution nuclear technology brings to society? What are the energy and health challenges in the future, and what are the decisions we need to make today to meet them?

For detailed information visit our anniversary website http://www.petten50years.eu and www.nrg.eu

SNETP Calendar

- **September 2011**
  19 September, 2011, Executive Committee n. 12 (Amsterdam)
  22 September 2011, NC2I Task Force n.2 (Berlin)
  28 September 2011, ESNII Executive Board n. 1 (Paris)
- **October 2011**
  5 October 2011, Governing Board n. 8 (Ljubljana)
  26 October 2011, ESNII Team n. 3 (Brussels)
- **November 2011**
  14-15 November 2011, GEN II III TWG n.5 (Brussels)
  28 November 2011, ESNII Task Force n. 13 (Warsaw)
  29 - 30 November 2011, General Assembly n. 3 (Warsaw)
- **January 2012**
  30-31 January 2012, Executive Committee n. 13 (Karlsruhe)
- **March 2012**
  21 March 2012, Governing Board n. 9

Related news

- **International Symposium on Nuclear Energy (SIEN 2011)**
  16 to 20 October 2011: Bucharest - http://www.sien.ro/
- **SET Plan conference**
  28 to 29 November 2011, Warsaw - http://www.setplan2011.pl/
- **Innovative Nuclear Power in a Closed Fuel Cycle Scenario With the support of the Wilhem und Esle Heraeus-foundation**
  5 to 8 December 2011: Physikzentrum Bad Honnef, Germany - http://www.nuklear.kit.edu/75.php
- **ERMSAR 2012 Open conference on severe accident research**
  21 - 23 March 2012: Cologne (Germany)
  More information at http://www.sar.net.eu
- **Nuclear fuel cycle conference, UKNFCC 2012**
  23 to 25 April 2012: Manchester, UK - http://www.icheme.org
- **Final seminar of the PHEBUS FP programme**
  13 - 15 June 2012: Aix-en-Provence (France)
  More information at http://www.phebuspf2012-irsn.com

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SNETP website: http://www.snetp.eu
SNETP internal workspace (members only):
https://extranet.snetp.eu
Contact the secretariat to be given a login and a password.

International events

TOP SAFE
- 22 – 26 April 2012, Helsinki,
  More information at www.topsafe2012.org

ICAPP
- 24-28 June 2012, Chicago
  The International Congress on Advances in Nuclear Power Plants,
  More information at www.icapp.ans.org/icapp12

INTERNATIONAL CONFERENCE ATALANTE 2012
- September 3-7, 2012
  Le Corum, Montpellier, (France)
  More information at www.atalante2012.org

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