



European Nuclear Society

e-news Issue 4 Spring 2004

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/index.htm>

In this issue

All those who follow the news in the nuclear sector regularly – and you are most probably among them - know that it is subject to ups and downs. While there have been many downs in the past, this last quarter can definitely be counted as an ‘up’, and the articles in this issue of ENS News convey this. Our reports on the following subjects come to mind especially in this context:

- a recent cost comparison performed for the (UK) Royal Academy of Engineering;
- a Euratom loan for the completion of Cernavoda 2; and
- nuclear has not been excluded from the EU emissions trading scheme post-2012.

This is not the end of the good news. Sweden, Japan and the USA have also provided encouraging headlines. In Sweden, Ringhals has applied for uprates on two of its reactors. The Swedish Nuclear Power Inspectorate has confirmed that the 600 MW lost with the closure of Barsebäck could be compensated by uprates of the country’s remaining 11 reactors. If this is carried out, Sweden would actually be replacing nuclear with nuclear. Not bad for a country that vowed to close the nuclear option almost 30 years ago.

In Japan, Chubu Electric Power Company's Hamaoka-5 nuclear power reactor achieved first criticality on 23 March. In addition, Kansai Electric Power Company seems to be poised to proceed with the use of MOX fuel in two of its reactors and Fukui prefecture has approved the construction of two new reactors at Japan Atomic Power. In the USA, plans for constructing a new reactor appear to be firming up with a definite, short-term timetable for licence application (2008) and decision (2010).

These headlines have also been commented on in other nuclear news publications. The rest of this spring issue is devoted to topics close to our concerns as a European Society grouping nuclear specialists: the latest developments concerning the Generation IV International Forum, news from the EU Institutions and reports on the conferences organised by the ENS. We hope you will find this issue both interesting and enjoyable.

Peter Haug
Secretary General

Andrew Teller
Editor-in-Chief

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/uk-study.htm>

UK study: New nuclear plants will be cheapest power option

In a report published on 10 March 2004, the UK's Royal Academy of Engineering revealed that electricity from offshore wind farms, currently Britain's most viable renewable energy source, will cost at least twice as much as that from conventional sources.

The independent study, commissioned from international energy consultants PB Power, placed all energy sources on a level playing field by comparing the costs of generating electricity from new plants using a range of different technologies and energy sources. It was found that the cheapest electricity would come from gas turbines and nuclear stations, costing just 2.3 p/kWh, compared with 3.7 p/kWh for onshore wind and 5.5 p/kWh for offshore wind farms.

“This may sound surprising,” says Academy vice president Philip Ruffles, who chaired the study group, “especially as we have included the cost of decommissioning in our assessment of the nuclear generation costs. The weakness of the (UK) Government’s Energy White Paper was that it saw nuclear power as very expensive. But modern nuclear stations are far simpler and more streamlined than the old generation – the latest are only about half the size of Sizewell B – and far cheaper to build and run.

“In the case of wind energy it is also necessary to provide back-up capacity for when the wind does not blow. In this report, we have been rather generous with the wind generation figures – we assumed you’d need about 65 percent back-up power from conventional sources for this study. The Academy has previously called for even higher back-up, more like 75 to 80 percent.”

Even so the cost of back-up capacity adds 1.7 p/kWh to the costs. Onshore wind generation is the cheapest renewable, but with back-up, it costs two and a half times as much as gas or nuclear.

Wind, nuclear and biomass generation all have the benefit of not emitting carbon dioxide, and the Academy/PB Power study also looked at the impact on costs of capturing carbon dioxide for all fossil fuels. This could add at least 2 p/kWh for coal-fired generators and 1-2 p/kWh for gas generators. “Coal looks uneconomic in the future,” says Mr Ruffles, “by the time you capture the carbon dioxide it’s going to cost as much as onshore wind.”

This study did not consider transmission costs to individual technologies or storage costs for gas to ensure security of supply – the market currently absorbs these through system operating costs or the cost of gas. However, providing energy a long way from the eventual customer will add to its cost. “The renewables sector already benefits from subsidies worth around £485 million* a year through the Renewables Objective,” says Mr Ruffles. “The Government is also planning to offer further subsidies in the form of reductions in transmission charges – this may run counter to

the spirit of the new European Electricity Directive aimed at promoting competitive energy markets.

“The value of our report is that it puts a price on the policy decisions we must take to sustain a vibrant economy, avoid the lights going out and meet our emissions targets. The report does not take sides in the energy debate but it does introduce transparency.”

*around €737 million

[Download commentary](#)

[Download report](#)

1. **Costs in p/kWh of generating electricity for ‘base-load’ plants considered in the study:**

Gas-fired combined-cycle gas turbine 2.2

Gas-fired open-cycle gas turbine 3.1*

Nuclear fission plant 2.3

Coal-fired pulverised fuel steam plant 2.5

Coal-fired circulating fluidised bed steam plant 2.6

Coal-fired integrated gasification combined cycle 3.2

(* Open-cycle gas turbines are usually used for short periods to meet peaks in demand, so a more realistic cost is around 6.2 p/kWh when used for only 15 percent of the time.)

2. **Costs in p/kWh of generating electricity for selected renewables considered in this study (figures in brackets allow for necessary standby generation):**

Poultry litter-fired bubbling fluidised bed steam plant 6.8

Onshore wind farm 3.7 (5.4)

Offshore wind farm 5.5 (7.2)

Wave and marine technologies 6.6 (standby not considered)

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/fission&fusion>.

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Fission & fusion: a view from Sirius, by Bertrand Barré, ENS president

All too often, a very destructive controversy simmers between the proponents of fusion and the advocates of fission who, seen from Sirius,¹ are both parts of the same community, the nuclear energy specialists.

Fusion zealots claim that ‘their’ energy source is so much cleaner (meaning cleaner than fission, of course), non-proliferating, safer, and more plentiful. Some of them go

as far as suggesting that ITER will, indeed, see the light of day as a reactor (as the 'R' in the acronym implies), and some also even dare attribute levels of cost competitiveness to the first fusion reactor² Fission fanatics, on the other hand, deride fusion as an eternal dream – saying that its readiness for the market is perpetually delayed. Both sides claim that they should be the sole recipients of the very limited R&D budgets.

Let me first address this last point. It is a fact that, by far, the biggest chunk of the Euratom Framework Programme's budget was, and still is, devoted to fusion R&D. But this chunk constitutes the bulk of the European money spent on fusion, though (fortunately) fission R&D relies only marginally on EU funding. Furthermore, in the present EU environment, any Euro lost by fusion is very unlikely to be redirected toward fission R&D! This considered, we **do** constitute a community.

We are a community also because, let's face it, we share the same opponents. As long as fusion seemed very, very remote – both in time and space – some 'anti-nuke' spokespeople used to say: "we're not against nuclear energy; we're just against this dirty fission power". Recently, because of the possibility of siting ITER in Europe, we hear (or read in the press): "we're all for fusion, but we're against this dirty ITER, with all that tritium and those activation products". And this is not a purely European phenomenon – similar declarations also appear in the Japanese newspapers.

Like it or not, fusion R&D needs the general nuclear background supplied today by lively fission programmes. If – heaven forbid – mankind were to phase out nuclear power for fear of radioactivity, fusion would stand as much chance of survival as a snowflake in hell. (And the demise of fusion would be but a drop in the ocean of problems mankind would face in solving its 'development-versus-environment dilemma' without the help of nuclear power.) On the other hand, the very existence of active R&D on fusion provides nuclear power with a prospect of millennial sustainability, which makes it worth its trouble.

Fission advocates should say, in essence: "Fusion is still a scientific and technical challenge which needs to be very thoroughly addressed, but the prospect of turning the vast reserves of lithium in the earth's crust into energy sources is worth the effort." And fusion proponents should acknowledge that, when we have mastered the physics and basic technology of fusion, we shall be happy to turn to fission specialists to engineer an efficient power reactor around our plasma core, to design our specific tritium breeding cycle and to properly manage our radioactive waste, as well as to help establish our Safety Analysis Report and Environmental Impact Assessment.

All in all, the European fission community has strongly supported ITER; we should at least expect the fusion community not to undermine nuclear power when it faces tough opposition in several European countries.

Personally, I do not picture fusion as a successor to fission, no more than oil is a successor to coal. Whenever it is that fusion does go commercial (don't ask me when), oil as well as gas production will be on the decline. Mark my words: I am not speaking about the ultimate exhaustion of these resources; I am only predicting an irreversible decline in production which might last very long. Even if a reasonably optimistic view of the growth potential of renewable energy sources is taken, I am convinced that, in the future, we shall be only too happy to have two forms of nuclear energy to use simultaneously: breeder fission and fusion. As I see it, fission and fusion are two sides of the same 'nuclear coin'.

¹An expression from the French writer Voltaire, which means: seen from afar, from a broader perspective.

²At this early stage, fusion's competitiveness is a question unfair to ask and dishonest to answer.

<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/vienna.htm>

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Vienna Board Meeting and General Assembly

Vienna has been the final choice of venue for the ENS Board Meeting, on Thursday, 24 June 2004, and for the ENS General Assembly, on Friday, 25 June 2004. Further details will be emailed to all those concerned closer to the time.

<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/ygn-meeting.htm>

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RACING THE FUTURE
ENS Young Generation Network

Spain hosts ENS Young Generation Network meeting,

by José Luis Perez and Manuel Martin of the Spanish Young Generation Network



José Luis Perez

For the first time, Spain was the location for the ENS's Young Generation Network (YGN) Board Meeting, which coincided with the start of the ENS nuclear communicators' conference, PIME 2004, in Barcelona on 8 March. Hospitality was the watchword for members of 'Jóvenes Nucleares', the Spanish Nuclear Society's (SNE's) Nuclear Young Generation Committee, who took on the lion's share of all the work involved in organising both the meeting and the technical visit on the preceding Saturday.

Thirteen of 17 European countries were represented

at the Board Meeting, of which there are routinely three held annually. Generally, these meetings are devoted to deciding on, organising and monitoring YGN activities – both nationally and internationally – in the pursuit of the universal YGN goals.

These are:



Manuel Martin

- effecting a transfer of knowledge between the older and the young generation in the nuclear field, in the interests of turning out well-trained professionals equipped to satisfy current and future needs;
- encouraging young people to have an interest in nuclear technology, and to consider it as a career; and
- promoting exchanges of experience among young nuclear professionals from different European countries.

At the 8 February meeting, held at the same hotel as PIME, the YGN representatives evaluated their networks' activities carried out since their last meeting, which had taken place in Vienna in 2003. As is customary at all YGN Board Meetings, representatives from each of the countries were, in turn, tasked with briefly summarising their respective country's report. The latest of these reports (from 8 February) – providing track records of each national YGN's activities over a specified period – can be viewed on, and downloaded from, the ENS website:

<http://www.euronuclear.org/aboutus/yg/country-reports.htm>.

Fittingly, as Spain was the host country, Jóvenes Nucleares got the ball rolling, explaining the impetus it has given to its activities, through its organisational structure. The Spanish representative emphasised the key activities carried out last year as well as those planned for future programmes. Highlights from 2003 were conferences, participation in the technical committee for the Spanish Nuclear Society's (SNE's) Annual Meeting and the impulse given to boosting young generation membership. Jóvenes Nucleares' various future programmes will focus on: further conferences in high schools and universities; updating its website; creating and maintaining its database of all its members; and being actively involved in the SNE's activities, with emphasis on the Annual Meeting.

Following the presentations of the country reports, discussion at the Board Meeting moved on to the ENS YGN's participation in different activities related to nuclear energy – such as PIME, the ENS General Assembly in Vienna on 25 June, and the third biennial International Youth Nuclear Congress (IYNC) in Toronto on 9-13 May 2004.

Lunch in a nearby restaurant was swiftly proceeded by a shift in the meeting's focus, to internal matters. And, although full, the afternoon's programme included a brief but illuminating presentation by Sami Tulonen of the European Atomic Forum, FORATOM, branch of the ENS's joint secretariat. Sami spoke on FORATOM's actions in the European Commission, stressing the importance of some of the Eastern European countries' imminent integration into the European Union (EU), taking into account their operation of nuclear power plants (NPPs).

Hospitalet de l'Infant and Ascó Nuclear Power Station technical visit



The first stop of the Saturday, 7 February YGN technical visit was Hospitalet de l' Infant. Here, the group met their hospitable and enthusiastic host, James Ferrús, a member of the communication team in the Ascó-Vandellós centres. Mr Ferrús conducted their visit to the Tecnatom-owned simulators for the Ascó I & II and Vandellós power stations. The simulators provide an essential means for training the operators who work in these power stations, as they simulate perfectly the real working environment in the control rooms.



With unflagging dedication, Mr Ferrús then led the group on a tour of the whole building, which Tecnatom devotes to providing training services. It is this availability of facilities that contributes to the fact that the Ascó and Vandellós Centres are equipped with highly qualified operative, maintenance and engineering staff, as well as sound technical support.

Next on the programme was Ascó NPP, which is run by companies belonging to the Endesa Group and Iberdrola. There, the group made their way to the visitors' centre, which has received some 80.000 visitors.



Afterwards, while continuing to be guided by Mr Ferrús, they visited the huge cooling tower located near the banks of the Ebro River, which is surrounded by scenic landscape. By all reports, when inside the tower, the members of the group's general consensus was that they were sure that their echoing questions emulated the steam produced by the concrete giant when it is in operation.



Photo opportunities were maximised, following which, the YGN Spanish hosts took time out to show off the gastronomy of the region to their guests. The latter did not need much encouragement to go to the restaurant, apparently. We have it on the best authority that the tasty culinary delights elicited great joy (the fact that there were several early-risers among the participants and that it was three o'clock in the afternoon surely played a part in contributing to this).

Lacking the time to visit Vandellós NPP, the group set off back to Barcelona since a lot of work awaited them during the Board Meeting the next day.



Spanish YGN calls on young nuclear professionals to join

Of the Spanish YGN's organisational role in the two-day events and its participation in the meeting's debates, Jóvenes Nucleares chair, Isabel Gomez says: "We have proved our capacity to successfully organise an international event, and we hope that we have shown our commitment to being active members of the European Young Generation.



"For these reasons, among others, we invite all young professionals working in any field concerning nuclear science and technology in Spain – nuclear power plants, laboratories, universities, regulatory bodies, engineering or electrical companies – to join the Spanish YGN. By doing so, they will be part of an organisation which believes that nuclear science and technology contribute to the development and welfare of our society," says Isabel.



International Youth Nuclear Congress (IYNC)

IYNC – the next of which is in Toronto on 9-13 May 2004 – is a project of the utmost importance to the ENS YGN, which participates in its organisation as well as taking an active role in its development. Bringing together young nuclear professionals from all over the world, this biennial congress has as its aim the creation of a meeting point for sharing knowledge, experience and new ideas. (Please see our announcement of Toronto IYNC2004 in the issue of *ENS News*.)

ENS YGN is in favour of the next IYNC in 2006 being held in Europe. One of the objectives of the second part of this ENS YGN meeting in Barcelona was to choose a European candidate to bid for hosting the 2006 congress. Two possible candidates were presented, and one of them was chosen after voting.

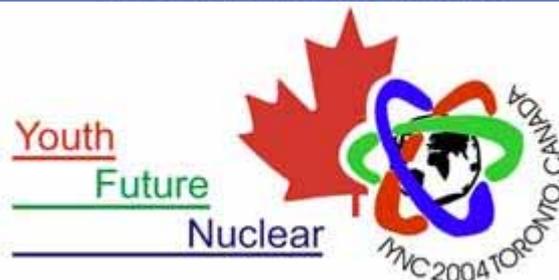
The official bid to host IYNC2006 was announced to IYNC Network representatives a bit later. (It was still a secret at the time that this issue of *ENS News* went to press.) Bids will compete on the strength of the different proposals and the final decision will be taken at IYNC2004 in Toronto.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/iync-toronto2004.htm>

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INTERNATIONAL YOUTH NUCLEAR CONGRESS

'A World of Innovations'



Join the Celebration of Youth

Hosted for the first time in North America, the International Youth Nuclear Congress – IYNC – is going to make Toronto the place to be on 9-13 May.

Join us for our biennial exhibition celebrating youth and excellence in all areas of nuclear science and technology. Take in over 170 oral and poster technical presentations. Listen to more than 20 invited keynote speakers from around the world. Meet with 300 young professionals and university students from more than 40 countries. Mingle with leading representatives from the international nuclear community. Make friends for life while experiencing Toronto through an exciting social programme and interesting technical tours.

Register today at www.iync.org and see you in Toronto, on 9-13 May 2004!

Co-hosted by



Sunday, 9 May - Thursday, 13 May 2004

WWW.IYNC.ORG

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/listening.htm>



Listening to others: a personal view by Andrew Teller, ENS society manager

Who are we?

PIME - the ENS's annual conference for nuclear communicators from all over the world – offers ample opportunity for new insights, and stimulating discussion among colleagues. My talk with a brand engineering specialist at this year's event, in Barcelona in March, was particularly noteworthy. It set me thinking about who we are, as a community – and if what he said is anything to go by – this was not a moment too soon!

His views can be summed up quite simply:

- proponents of nuclear science and technology we may be, but so far, we have been much too discreet about our motivations and ideals;
- this lack of assertiveness has cleared the way for our **critics to define us**. They have done this by painting themselves white, and, by default, conferring upon us all the vices corresponding to the virtues they claim to stand for; and
- our messages to the public miss their target because we have failed to create a positive image for ourselves, and this is a pre-condition to establishing a climate of trust.

Is this the root cause of all our communication problems? I can't say for sure but, in any case, it certainly does make a lot of sense. Therefore, perhaps the way forward is for us to take a step back and spend some time defining and promoting ourselves before focusing on the messages we would like to be heard.

So, who are we? This is what I think we believe:

1. our faith in nuclear's potential is what prompted us to choose a career in the nuclear field. It is not because we depend on nuclear to earn a living that we have faith in it.
2. science and technology should and can be tools for furthering the well-being of mankind.
3. we have demonstrated our ability to overcome the technical challenges posed by the use of nuclear technologies.
4. we care about the environment no less than anybody else. However, good intentions are not a substitute for effectiveness.

5. given the crucial role played by energy in our day-to-day lives, now and in the future, securing its supply is paramount.
6. the increasing energy needs of a growing world population are a fact that cannot be ignored.
7. those who advocate turning back the clock are deluding themselves and the public.
8. there is no simple solution to any issue constrained by conflicting objectives,¹ as is the case of energy use.
9. the energy issue must be considered in its wider context. Countenancing social upheavals for the sake of preventing potential threats is a remedy worse than the evil it is supposed to cure.²
10. rationality is all-important. Only rational debate conducted without preconceived ideas by all interested parties can yield effective answers to the world's energy needs.

I like the idea of describing ourselves in ten statements. However, this is, of course, only a personal view, and there is absolutely no reason to stick either to this number or to the content. Please do share your ideas with me - perhaps by adding to and/or subtracting from these statements. After all, creating a long-overdue image of (and for) ourselves should be a group project – not the work of any single individual. Your views can be emailed to: andrew.teller@euronuclear.org. I am looking forward to presenting you with an improved version of our brand image in the next issue of ENS News.

¹ For example, in the case of energy: cheap and clean; renewable and versatile; reliable and interruptible.

² Anti-nuclear proponents advocate drastic changes such as scrapping huge investments in generation and distribution capacity and resorting to open-ended energy saving policies. It is these measures which can induce social upheavals worse than the evil they are supposed to eliminate.

<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/hsc-appointments.htm>

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ENS High Scientific Council appointments

The ENS's High Scientific Council (HSC) – its think-tank comprising scientists of high repute – has recently appointed two additional members to its ranks.

Social researcher Andrés García, a graduate of sociology and political sciences from the Complutense University of



Social researcher
Andrés García

Madrid, has dedicated much of his work to the domains of marketing and public opinion, and has been active in several research institutes. Since 1990 he has been the scientific coordinator at the Centro Europeo de Investigación Social de Situaciones de Emergencia (CEISE), which comes under the aegis of the Spanish Interior Ministry. CEISE is part of a network of research centres operating under the Council of Europe's Open Partial Agreement (OPA) on Major Hazards. Prof. García's post at this centre has enabled his involvement in extensive research into emergency situations. His work there has also entailed studies on the social perception of natural and technological risks – the latter relating mainly to nuclear - in Spain and worldwide.

In addition to having a Ph.D. in Computer Science and Artificial Intelligence, **Dr Mircea Constantinescu** is a specialist in communications and public relations. Formerly an associate professor with the University of Bucharest's Faculty of Letters and a professor of computer sciences at the Politechnical University of Bucharest, Dr Constantinescu has also studied in New York and Montreal. His North American specialist training was undertaken with, among others, the leading multinational advertising and PR giants Young & Rubicam and Burson-Marsteller. He is now



Dr Mircea Constantinescu

president of the GALAXIA Foundation. The Foundation – operating under the Romanian Ministry of Foreign Affairs – supports activities in public relations, advertising, journalism and mass communication, as well as analysing and establishing Romania's image at home and abroad.

The HSC advises the ENS on developments in the various scientific fields related to the use of nuclear technologies - encompassing physics, biology, medicine, engineering and the social sciences. Drawing its members from several European countries, it is also charged with preparing position papers clarifying the ENS's stance - to the outside world - on current scientific and technological matters and their societal impact. The HSC's recent position papers are on nuclear energy and climate change, and on the fusion reactor ITER.

More information on the ENS High Scientific Council can be found on the ENS website: <http://www.euronuclear.org/aboutus/hsc.htm>

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/nuclears-future.htm>

Nuclear's future role highlighted at top-level energy conference

The future role of nuclear in Europe was one of the dominant topics at an international conference that took place in Brussels on 2-3 March. Peter Haug, the ENS's secretary general, in his capacity as moderator of the discussion pertaining to this topic, seized the moment to make the case for nuclear in his opening remarks. He stated that presentations given at the conference had shown that nuclear must be part of the solution to the global energy equation. There was no other energy source to equal nuclear in terms of economics and emissions avoidance.

The main theme of this 'Energy Choices for Europe 2004' conference was 'Energy and the Wider Europe'. In presentations and during discussion sessions, the need to use a range of energy options was stressed by conference speakers and other participants.

Specific sessions covered topics such as security of energy supply, the opening up of energy markets, energy and the environment, energy policy in the new Europe and the outlook for nuclear energy.

The opening keynote speaker was RWE board member Gert Maichel, who gave a presentation on competitiveness in the wider European energy markets. During a discussion session, a question was asked about how Europe's energy sector could meet future challenges, including the need to construct hundreds of new power plants over the next couple of decades. Dr Maichel responded that he was firmly convinced that the sector had the finance, know-how and the will to make such new investments, if the conditions were right.

The keynote speaker for the session on nuclear was BNFL chief executive, Mike Parker, who said the industry should focus on a high level of transparency that would lead to a balanced debate. He added that he was not 'for' any single energy source but did favour reliable electricity supplies.

Other speakers included prominent Members of the European Parliament (MEPs), Observer MEPs from the accession states, senior officials from the European Commission, government ministers and energy company chiefs. Among the international organisations represented were the OECD's Nuclear Energy Agency (NEA), the International Energy Agency (IEA) and the IAEA.

The IAEA's director general, Mohamed ElBaradei, was the guest speaker at a conference dinner, and he issued a warning that Europe would soon have to take some crucial decisions on the energy front.

He said: "In conclusion, let me point out that the current 'holding period' for nuclear power in Europe will soon come to an end. In the near future, Europe will be faced with important energy decisions. With an increasing number of nuclear power plants reaching their original design lifetimes, Europe will have to decide how to replace its retiring nuclear power plants."

"Making these decisions will depend, to some extent, on where you choose to place your emphasis — for example, on exploring available coal and natural gas resources, improving the performance and cost of renewables, or placing greater reliance on

imports. What seems clear is that the only baseload option available today with low carbon emissions comparable to nuclear power is large hydropower – and sites for hydropower expansion are somewhat limited in Europe.”

“At the end of the day, whether your decisions involve decommissioning, extending the life of existing reactors, or building the next generation of European nuclear power plants, the IAEA will be ready to assist you in your efforts to ensure a safe and secure energy supply.”

The organisers of the conference, Touchstone International, have announced a much more elaborate event next year, called Europe Energy Week, featuring exhibitions and workshops in addition to the main conference. This is due to take place from Monday 28 February to Friday 4 March 2005.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/rrfm2004.htm>

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Research Reactor Fuel Management, RRFM 2004

This year's Topical Meeting notches up another success



Attracting 174 participants from all over the world, ENS's 8th International Topical Meeting on Research Reactor Fuel Management – RRFM 2004 – held in Munich on 22-23 March 2004, was a resounding success. Pol Gubel, chairman of the RRFM Programme Committee, offers some insight into what made the conference memorable by sharing with us his impressions of its first session.

What made this year's RRFM a very special meeting was that it was held in Munich, the city where the brand-new FRM-II reactor is now being commissioned. It was, therefore, fitting to kick off the conference with presentations on FRM-II. In the first session, one paper dealt with the reactor's first nuclear startup, while a second focused on its utilisation.

To celebrate this important event, we continued with a series of invited papers on international topics of interest to the whole research reactor community. We heard about the status of the US policy concerning non-proliferation, conversion to LEU and the return of foreign spent fuel to America and Russia. For the first time, we learnt officially that the US Government is seriously considering an extension of its acceptance policy beyond the period 2006-2009. Three facts triggered the US

Administration's change in attitude:

- the 9-11 event;
- the fact that only about 50% of the eligible HEU in the world will be returned back to the US within the present acceptance period; and
- the unexpected difficulties with the development and the qualification of the new UMo fuels.

We also heard about the European initiatives to support the large nuclear facilities – e.g. research reactors, in order to contribute to the creation of a **European Research Area (ERA)** whose aim is increased co-operation between the EU member states. In addition, the role of present and future research reactors was clearly identified as a support to the development of innovative reactor systems: the research reactors were defined as an essential link between new concepts, new ideas and the reality.

For the full account of Pol Gubel's RRFM 2004 round-up, please visit the ENS website: <http://www.euronuclear.org/meetings/rfrm2004/summary.htm>

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/pime2004.htm>

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PIME 2004 sets an attendance record

ENS PIME 2004 – the latest in the annual series of conferences for nuclear communicators – took place in Barcelona on 8-12 February, and achieved record attendance, with about 180 participants registering from some 30 countries.



This year, the main themes were nuclear and politics, public opinion, public acceptance, strategy and messages, stakeholder dialogue, nuclear safety, sustainable development and corporate social responsibility, experiences of the Spanish nuclear sector, media relations, crisis communications, communicating locally and the future of nuclear.

At PIME 2003 in Malta, a new and highly successful formula was introduced for the event – morning plenary sessions, followed by afternoon workshops and round-

tables. The same tried-and-tested format was followed in Barcelona, giving ample opportunity for 'PIMERS' to exchange experiences and discuss possible new strategies.

Opening the conference, ENS President Bertrand Barré said resistance to nuclear in several countries could not be underestimated. However, it was also true that in many parts of the world, Europe included, nuclear's prospects were either secure or on a pathway towards growth.

A keynote speech was delivered soon after the start of the conference by the Vice President of the European Parliament, Alejo Vidal-Quadras Roca, who called for greater political leadership on energy issues.

He said: "It is clear that Europe must take extremely important decisions in relation to energy policy in a very short time... Electricity production in nuclear fission plants, which has always been a complex economic and technological issue, has increasingly become a political one. And it is not an exaggeration to say that nuclear energy still arises in some European countries as one of the most emotional, bitter and polarised political debates of today."

Concluding his presentation, Mr Vidal-Quadras Roca stated: "It is obvious that in a future of energy shortages, deep concerns about global warming and poor performance of renewables, nuclear power will be seen with very different eyes... The unknowns are too many, and the consequences of making the wrong forecast will be too terrible. That is why decisions must be taken immediately, and that means that the politicians of today have the obligation to raise their vision and their leadership to face the challenges of tomorrow."

There were also important contributions from senior officials from the European Commission – Mr Michel Poireau from the Directorate-General (DG) for Research and Mr Derek Taylor from the DG for Energy and Transport (TREN). Other highlights included presentations by Dr Peter Hählen (SVA, Switzerland) on last year's Swiss referendum success and Patrice Bernard (CEA) on new reactor types.

In his closing remarks, ENS's secretary general, Dr Peter Haug, urged all those involved in nuclear communication to strip their main external messages of all complex formulations and jargon – favouring brevity, simplicity and succinctness. "Nuclear technology is indeed complex and difficult for lay people to understand," said Dr Haug. "It makes no sense to reflect this complexity in our communication activities."

On nuclear's context in the broader concepts of an 'energy chain' and the economy as a whole, Dr Haug stressed that, to the outside world, nuclear should not be promoted as being particularly special. Rather, it should be presented as one of a range of options that must be used, in the interests of a sustainable future for humanity.

Conceding that many people had still to be convinced of this, Dr Haug relegated those against nuclear to "a twilight world, where everything will come right if we build more wind farms and use less energy". "It is our task to show that this view of the future is totally unrealistic," he added.

For the second year in succession, the IAEA committed significant support to the event, sponsoring 20 participants, staging a workshop and organising a short course

on communication techniques, which took place straight after the PIME conference.

The final element of the PIME programme was a technical tour to view the Vandellòs-1 nuclear plant site, where decommissioning work has made excellent progress. The tour also included a visit to a nearby training centre.

This year's PIME was sponsored by the Spanish Nuclear Industry Forum and the Spanish Nuclear Society, as well as FORATOM. The next PIME is due to be held in the Paris area on 13-16 February 2005.

Virtually all the presentations given at the event in Barcelona are available on the conference website: www.pime2004.org. In addition, a free CD containing a wide range of computer files related to the conference has been produced to give participants a user-friendly record of the event for reference purposes.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/slovakias-energy-future.htm>

MEMBER SOCIETIES
MEMBER SOCIETIES

Conference will spell out: Slovakia's energy future is bleak without nuclear

'Can Slovakia Secure Energy Supply and Sustainable Development without Nuclear?' – the theme for the 5-6 May 2004 conference in Bratislava, Slovakia – indicates that straight talking is what this event will be all about! Teaming up to provide the organisation are the Slovak Nuclear Society (SNUS) and the Slovak Nuclear Forum (SJF), together with the ENS and its partner in the joint secretariat, the European Atomic Forum, FORATOM.

Focused in its objective, the conference aims to send a clear, hard-hitting message to decision-makers. This is that: Slovakia cannot secure future energy supply, if it does not complete its partially built reactors and if it closes its safe and effective ones. Nuclear has to remain an indispensable part of the country's future energy mix.

The event will open with invited presentations by officials at the highest level of organisations such as the IAEA, the IEA, OECD/NEA, the NEI, the WNA and WANO, as well as the European Commission and Parliament. This line-up will be followed by a host of speakers from the political and nuclear industrial arenas in Slovakia, the Czech Republic, Finland, Hungary and the Russian Federation.

For more information about the conference, please visit the following websites:

<http://www.sjforum.sk>
<http://www.snus.sk>



<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/nuclear-energy-for-new-europe.htm>

MEMBER SOCIETIES
MEMBER SOCIETIES



Coming up in September – Nuclear Energy for New Europe

Still to come on the 2004 calendar is the ENS-sponsored 'Nuclear Energy for New Europe', organised by the Nuclear Society of Slovenia (NSS). Portorož – the famous Slovenian seaside resort on the Adriatic coast – is the venue for this year's event, which takes place on 6-9 September. The 2004 conference promises to attract a broad mix of nuclear professionals – from nuclear research facilities, educational institutions, utilities, vendors and regulatory bodies Europe-wide.

This year's programme features a wide spectrum of topics – ranging from reactor physics, NPP operation and nuclear safety to training and public relations – and looks set to stimulate keen interaction among participants. In keeping with tradition for these conferences, the annual young authors' competition will be a highlight, placing special focus on knowledge management. NSS will present an award to the best paper prepared and presented by an author who is under the age of 32.

The language of the conference is English. Further information is available on the website: <http://www.drustvo-js.si/port2004>

<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/nucleareletrica>

MEMBER SOCIETIES
MEMBER SOCIETIES

SN Nuclearelectrica SA plant chalks up a record

Romania – for 2003, SN Nuclearelectrica SA’s nuclear fuel manufacturing plant in Pitesti, FCN-Pitesti, has achieved a quality assurance coup by manufacturing 5.021 defect-free nuclear fuel bundles. The bundles, dedicated to the operation of Cernavoda NPP Unit 1, were established as having been fault-free during the operation of this unit. This performance has enabled the plant to chalk up a performance record – with no defects having been reported over a 30-month period.

Thanks to a \$4-million investment – funded entirely by SN Nuclearelectrica – work has been proceeding with equipping the Pitesti plant to double its nuclear fuel manufacturing. This has gone ahead while the plant has maintained normal operation levels.

The plant capacity upgrade is scheduled for completion during the first half of this year.

<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/insarr.htm>

MEMBER SOCIETIES
MEMBER SOCIETIES

Czech INSARR mission goes smoothly

Czech Republic – an IAEA Integrated Safety Assessment of Research Reactor (INSARR) mission has been conducted for Nuclear Research Institute Rez plc’s LVR-15. Related to the reactor’s licence renewal in 2003 (until 2014), this mission underscores the Czech Republic’s commitment to safety standards at its nuclear facilities and to maintaining total transparency in this regard.

The INSARR team, having carried out its assessment on 1-5 December 2003, concluded that the LVR-15 is operated safely and that the facility’s personnel are knowledgeable and are performing their tasks responsibly and competently. In addition to identifying several good practices, the team made recommendations to improve operational safety levels.

The LVR-15 is a light-water moderated, cooled tank reactor, having forced cooling. With a maximum reactor power of 10 MWth, it serves as a source for material testing, activation analysis as well as irradiation for medical purposes.

<http://www.euronuclear.org/library/public/eneews/ebulletinspring2004/westinghouse.h>

ENS CORPORATE MEMBERS
ENS CORPORATE MEMBERS



Westinghouse wins Olkiluoto-2 contracts

Finland – Teollisuuden Voima Oy (TVO) has awarded two contracts to Westinghouse Sweden. The first – for supplying fuel to its Olkiluoto-2 nuclear power reactor – is for the delivery of three reloads of BWR fuel and starts in 2005 and ends in 2007. The second agreement is for the annual maintenance of reactor pressure vessels and their internal components, from 2004 – 2007.

Last year, the Westinghouse BWR Field Services team successfully undertook maintenance work at some 40 nuclear power plants worldwide.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/framatome.htm>

ENS CORPORATE MEMBERS

Framatome ANP delivers two steam generators to the US

In February, Framatome ANP shipped two replacement steam generators to the United States for Xcel Energy's Prairie Island Nuclear Generating Plant. The plant is located in Minnesota and operated by Nuclear Management Company.

The steam generators were manufactured at the Chalon Saint Marcel plant in the Saône et Loire region of France and will be transported by river and sea before being installed in Prairie Island Unit 1 this autumn. This delivery is the first by Framatome ANP to a customer in the United States. Xcel Energy authorised engineering design work on the replacement steam generators in August 2000.

Through its manufacturing plant in Chalon, France, Framatome ANP has become the leader in the replacement equipment market. The group has a 40 percent share in the steam generator market and a 50 percent share in the reactor vessel head replacement market (overall value of around 350 million euros). At the end of 2003, the American market represented around 60 percent of the workload at the Chalon Saint Marcel plant.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/contributionsof>

COUNCIL OF THE EUROPEAN UNION

EU Presidency issues revised 'nuclear package' proposals

On 23 March, the European Council Presidency issued revised versions of the compromise proposals for the 'nuclear package' – the European Commission's proposed EU-wide Directives for safety, decommissioning funds and radioactive waste management, which aim at covering the future use of nuclear energy in the enlarged EU.

The European Council's latest compromise proposals follow several others –all of which have been a serious attempt to end a deadlock between pro- and anti-Directive member states over the 'nuclear package' in the Council. These new proposals take into account some of the views expressed by the European Parliament, which acted in a consultative capacity only when it voted on the 'package' in January.

Please click here: for the European Council's 23 March proposals:

[Proposal for a Council Directive \(Euratom\) on the management of spent nuclear fuel and radioactive waste](#)

[Proposal for a Council \(Euratom\) Directive setting out the basic obligations and general principles on the safety of nuclear installations](#)

Regarding the European Commission, it is now unclear if or when it intends to come out with its own set of separate revised compromise proposals. It had announced, on 5 February, that these were to be expected by Easter.

As far as content is concerned, the most significant changes in the new European Council proposals involve the safety Directive. Particularly significant are the following points:

- the new Article 9.2. on financial resources re-introduces the decommissioning funding issue with a very 'soft' formulation. Decommissioning financing has been one of the most contentious aspects of the 'package'. It sparked controversy because the Commission's original proposal:
 - called for a unique system to be adopted by all EU member states, irrespective of the prevailing conditions in each country.
 - spelt out that the assets of decommissioning funds were to be uniquely used for decommissioning costs, and were to be excluded from nuclear operators' mainstream financial accounting and balance sheets.
- in the European Council's revised preamble to the proposal on safety, the role of the IAEA is strengthened by stating that the IAEA's standards and approaches constitute an internationally recognised framework of best practice

on which national safety requirements are primarily based. In view of the Convention on Nuclear Safety and existing international safety standards, the efficiency and added value of the European Commission's proposal on safety had been called into question during the European Parliamentary debates prior to the Parliament's January votes on the 'nuclear package'.

- Article 12 of the Council's proposal clarifies the role and competences of the Committee of Regulatory Authorities – placing stronger focus on the role of EU member states in the peer review mechanism and reporting.

On the waste Directive, the two main changes concern the timetables for the management of radioactive waste and the establishment of a Committee of Regulatory Authorities. As far as the timetables are concerned, the annex to the European Commission's proposed Directive – setting up an indicative timescale for the development and operation of waste disposal facilities – has been deleted. In its current version, no reference to deadlines for the long-term management of radioactive waste appears in the Directive.

A new article has also been added to the waste Directive. This article foresees the creation of a Committee of Regulatory Authorities, composed of representatives of the regulatory bodies designated by each member state, to review the national reports and summary reports periodically submitted to the European Commission by each member state, and to assist the Commission in establishing guidelines for the content and timing of these reports.

On 31 March, the new compromise proposals were discussed in the Atomic Questions Group (AQG) – comprising delegates from the EU member states' Brussels-based embassies to the EU. Very little came out of this meeting in terms of concrete results. A minority of member states – Finland, Germany, Sweden and the UK – have maintained their anti-Directive stance and, as such, threaten to block the European Council's adoption of the legislation. These member states support a non-legally binding alternative to the nuclear safety Directive, which, significantly, does not have the backing of the European Parliament. However, what must be considered is that certain accession countries joining the EU next month, namely the Czech and Slovak Republics, Hungary, Lithuania and Slovenia, are likely to join this so-called 'blocking minority' in future European Council votes. Therefore, it is not likely that any final decisions on the package will be taken during the current Irish Presidency of the European Council.

The AQG continued its discussions on the package on 16 April, with no changes or developments to report. The Council Presidency is expected to bring the issue before the European Council's Committee of Permanent Representatives (COREPER) in early May.

For a detailed explanation of the issues concerning the 'nuclear package', please visit the ENS's website: <http://www.euronuclear.org/info/nuclearpackage.htm>

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/trading-emmission.htm>

COUNCIL OF THE EUROPEAN UNION

Nuclear not excluded after 2012 in Kyoto Mechanisms Directive

On 7 April – after three weeks of intensive negotiations – the European Council and European Parliament reached an agreement on the Kyoto Mechanisms Directive. (This Directive is a so-called ‘Linking Directive’, i.e. it links the Kyoto Protocol to EU legislation.) The final proposal only excludes nuclear energy projects during the 2008-2012 commitment period.

The new law is expected to help European industry to make earlier use of the Kyoto flexible mechanisms: Joint Implementation (JI) and the Clean Development Mechanism (CDM). JI allows EU member states and industries to reach part of the Kyoto targets by investing in greenhouse reduction projects in other industrialised countries or countries with economies in transition. CDM enables Kyoto commitments to be met through projects in developing countries by capacity building and technology transfers.

Under the new law, nuclear energy projects will not qualify for JI or CDM greenhouse gas emissions credits during the 2008-2012 commitment period (in accordance with the Kyoto Protocol and the Marrakech Accords).

The European Parliament will vote on the final proposal for the Kyoto Mechanisms Directive on 21 April 2004 at its plenary session in Strasbourg, France. With an agreement in place, parliamentary approval of the proposal is likely. The European Council is expected to formally endorse the proposal on 17-18 May 2004. The new law will enter into force before the EU emission trading scheme starts next year (1 January 2005).

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/cernavoda-2.htm>

EUROPEAN COMMISSION

Romanians win Euratom loan for Cernavoda-2

On 30 March, the European Commission announced its decision to approve a loan under the EU's Euratom Treaty to help finance the completion of the Cernavoda-2

power reactor unit in Romania. The Commission is granting the loan of 223.5 million euros to the Romanian National Nuclear Power Company (SNN) to ensure that the plant will meet internationally accepted safety standards.

Commenting on this development in Brussels, the ENS's secretary general, Peter Haug, said: "With this decision, the Commission has demonstrated its commitment to maintaining the highest possible nuclear safety standards in Europe while, at the same time, providing substantial support for the Romanian economy.

"Romania will join the EU in 2007, and this is a clear sign that the European Community cares about the country's economic future. The second nuclear unit will strengthen Romania's security of energy supply. In addition, the economic viability of the Cernavoda-2 project has been confirmed by independent experts."

Unit 1 at Cernavoda went into service in 1996 and provides more than 10% of Romania's electricity, while reducing the country's dependency on oil imports for power generation. Work on completing the second unit resumed last year after internal and external funding arrangements were finalised. The Cernavoda reactors are of the CANDU 6 type, designed and built by Atomic Energy of Canada Ltd. (AECL). Ansaldo of Italy is responsible for the non-nuclear side of the plant. The second unit is due to start commercial operation in 2007.

Euratom loans were originally designed to support the development of Western Europe's nuclear industry at a time when additional power generating capacity was required to meet increasing electricity demand. Loans were granted to Belgium, Germany, France, Italy and the UK.

With Europe's nuclear sector having undergone successful development, no such loans have been granted to an EU member state since 1987. All the loans had been repaid by the year 2000.

The emphasis in recent years has been on using the loans to ensure that power reactor units in Central and Eastern Europe are upgraded or completed to a level that matches Western safety standards.

In 1999, a loan worth 212.5 million euros was granted to Bulgaria for the modernisation of the two newest units (5 and 6) of the Kozloduy nuclear power plant. One year later, a loan of 688.24 million euros was allocated to Ukraine to support the completion of two reactor units at the Rovno and Khmel'nitski plants.

The [Commission's announcement](#) of the loan decision can be found on the [Internet](#).

Meanwhile, Friends of the Earth (FoE) Europe says it will ask the European Ombudsman to investigate what it calls "suspected bogus nuclear safety claims" made by the Commission regarding the loan. The environmental pressure group alleges that the Commission failed to give a detailed justification for the loan and refused access to key reports. FoE Europe also claims that the project should not qualify for a Euratom loan, as Cernavoda-2 is a Canadian reactor. The loan decision has also been strongly criticised by the Greens in the European Parliament.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/nuclear-chief.htm>

EUROPEAN COMMISSION

Proposed Directive on electricity supply and infrastructure investments

The FORATOM branch of the ENS/FORATOM joint secretariat hosted a meeting at its offices in Brussels on Thursday, 18 March, for nuclear industry representatives to analyse a European Commission proposed Directive on measures to safeguard security of electricity supply and infrastructure investments.

The meeting provided the occasion for the European Parliament's '*Rapporteur*' for the proposed legislation, UK Conservative Giles Chichester, MEP, to express his views. Mr Chichester argued during the meeting that security of electricity supply was a complex issue that involved much more than just transmission systems. He suggested that the proposed Directive should perhaps be extended to deal explicitly with investment in generation capacity. He also said there was a need to challenge the received idea that renewables, demand-side management and combined heat and power (CHP) would cover the EU's future energy needs.

A working paper prepared by the '*Rapporteur*' is to be discussed by the European Parliament's Industry Committee (ITRE) in early April. Following a public hearing on the subject, to be organised by this Committee in the autumn, it is expected to vote on the legislation in late autumn, with a European Parliamentary plenary vote taking place early next year.

Participants at the FORATOM meeting agreed that regulatory measures introduced by the Commission's proposed Directive (reserve generation capacity, increased demand-side management and increased renewable energy sources) are not market-orientated and would therefore be contrary to a well-functioning competitive market.

They also argued that the assumptions contained in the Directive – that the above measures would cover the EU's future energy needs – were totally unrealistic, as conventional energy sources would still be needed in the coming decades to ensure security of electricity supply. Moreover, the need for a proposed Directive on security of electricity supply was called into question since existing EU legislation already provides tools for EU member states to deal with security of supply. The market must be given the opportunity to prove that it can deal with security of supply.

Those at the meeting also held the view that: to ensure security of supply in the EU and reduce import dependency in a liberalised environment, diversity of fuel supply should be promoted and investments in electricity generation should be based on economic considerations.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/infrastructure->

[investissement.htm](#)

EUROPEAN INSTITUTIONS

EUROPEAN COMMISSION

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<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/hydrogen.htm>

EUROPEAN INSTITUTIONS

EUROPEAN COMMISSION

Hydrogen fuel cell initiative

The European Hydrogen and Fuel Cell Technology Platform (HFCTP) – established by the European Commission – has held its first General Assembly in Brussels, formally launching the project.

This initiative, endorsed by the Commission in September 2003, was first announced in the September/October 2003 issue of *ENS News*. Its objective, as stated by the Commission, is: “to facilitate and accelerate the development and deployment of cost-competitive, world class European hydrogen and fuel cell based energy systems and component technologies for applications in transport, stationary and portable power”.

The specific aims of the HFCTP General Assembly, on 20-21 January 2004, were:

- to spread awareness widely among the European hydrogen and fuel cell community about the platform concept, its structures and objective;
- to align ongoing and new activities (e.g. the Commission’s Framework Programme 5 (FP5) and Framework Programme 6 (FP6) projects, and national and regional programmes) with the platform's objectives; and
- to draw conclusions and make recommendations for follow-up actions and the implementation of steering panels and initiative groups.

Ahead of the meeting, the European Commission drew up a list of about 350 participants and issued personal invitations. This was done in consultation with the European Union (EU) member states, and the HFCTP’s Advisory Council. The Advisory Council is charged with steering the technology platform and, in doing so, ensuring its strategic relevance within a global context and that its direction is consistent with EU policy.

In addition to Advisory Council members, the General Assembly participants comprised Commission co-ordinators; delegates from national and regional hydrogen and fuel cell projects, programmes and initiatives; the Member States Mirror Group (single representatives/experts from each member state and from trans-national organisations); as well as representatives from the EU institutions, non-governmental organisations, civil society and financial institutions.

In his address to the HFCTP General Assembly, during the plenary session on the first day, European Commission President Romano Prodi gave the initiative full political support, while carefully avoiding any mention of nuclear energy. His opening address was followed by keynote speeches delivered on behalf of Energy Commissioner Loyola de Palacio and Research Commissioner Philippe Busquin. The

Portuguese Minister of Science and Education, Mrs Maria da Graca Carvalho, represented the member states. A presentation of the objectives, structure and operations of the platform was given by the Advisory Council chairman, Jeremy Bentham (Shell Hydrogen), and the director of the European Commission's Energy Directorate in Directorate-General (DG) Research, Pablo Fernández-Ruiz.

During other presentations, Jørgen Henningsen, speaking on behalf of Commissioner de Palacio, said that hydrogen was not the only pathway to sustainable energy. He reaffirmed the need to have a fresh look at the nuclear option.

Of particular note, during the afternoon of the first day, was the session addressing 'Hydrogen Infrastructure', which confirmed the following facts:

- efficient storage remains the primary technical obstacle to the increased use of hydrogen. Incremental improvements will not do: a real breakthrough is needed for transport. This is illustrated by the fact that the energy density of hydrogen is only one fifth of that of oil.
- further obstacles are: fuel cell reliability in terms of hours of operation and the costs of fuel cell and hydrogen production.
- the production means – based on steam reforming of oil or on natural gas – will suffice for a long time to cover the needs of a slowly increasing share of hydrogen-based energy applications. The capacity is available (9 million cars – i.e. 5% of those in Europe – could be fuelled with 25% of the current hydrogen production) and fossil fuels are by far the cheapest hydrogen source. One can, in fact, establish an inverse relationship between hydrogen's production cost and the amount of carbon dioxide generated.
- major doubts concerning carbon sequestration were voiced by HFCTP Advisory Council member, Prof. Carlo Rubbia (Italian National Agency for New Technologies, Energy and the Environment (ENEA)). This is because of the gigantic quantities to be considered (2.000 km³ to be stored for 1.000 years) and because of its toxicity (an atmosphere containing 10% of carbon dioxide would kill a human being in four minutes).

A conclusion drawn from the meeting was that nuclear energy certainly has a role to play in the production of hydrogen. However, the moment when the need for hydrogen reaches proportions justifying new, carbon-free production methods remains a remote prospect. On the basis of the information available today, it appears that the timescales involved will leave sufficient time to develop a High Temperature Reactor (HTR) specifically designed for this purpose.

The European Commission's [press release](#) on the HFCTP launch is available.

Further information about the platform is also available on the [DG Research website](#).

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/publication-report.htm>

EUROPEAN COMMISSION

Special feature on nuclear in Commission magazine

‘Nuclear Energy – Can we do without it?’ is the main four-page web feature in the February 2004 (No. 40) issue of the European Commission’s RTD Info Magazine on European Research. The introduction starts off by referring to nuclear as an “unpopular sector”, which has been “at the centre of much controversy” over the past two decades, following its status as “the darling” of the burgeoning economies of the “glorious thirties”. However, it then goes on to question the viability of an anti-nuclear stance in the face of the global climate change problem, and this sets the tone for a balanced article covering the major nuclear issues.

Some of the many key points made in the article are:

- nuclear fission is a means of producing electricity not only on a very large scale but also in a sustainable way – not a single greenhouse gas molecule is emitted from the nuclear reactions.
- the nuclear sector now provides more than a third of Community needs.
- the EU has resolved to make a considerable effort to double the use of renewable energy, targeted to meet at least 12% of its primary supplies by 2012. Yet even if it succeeds, this would only reduce its emissions by 200 million tonnes – leaving 350 million outstanding.
- compared with disasters in the chemical or transport sectors, for example, the nuclear industry can be proud of having achieved a remarkable level of industrial safety within the EU over many decades.

For the February 2004 issue of the European Commission’s RTD Info Magazine on European Research, please visit:

http://europa.eu.int/comm/research/rtdinfo/40/index_en.html

From the above web page, the magazine is also available in pdf format, in English, French and German..

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/nuclear-terrorism.htm>

EUROPEAN PARLIAMENT

MEPs to discuss nuclear terrorism

The next meeting of the Nuclear Safety Working Group, formed by anti-nuclear Members of the European Parliament (MEPs) from the European People's Party and European Democrats (EPP-ED) political group, is to take place on Wednesday, 21 April in Strasbourg, France.

According to the invitation to the panel discussion, the title of the event is 'How can European atomic power plants be protected against terrorist attacks'? No exact time and venue for the meeting has so far been announced.

The meeting is expected to feature expert speakers from Germany and the UK, with a European Council representative providing an update on the status of the proposed 'nuclear package' of EU legislation.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/generation-IV.htm>

WORLD News

**Frank Carré and Gian Luigi
Fiorini
CEA/Nuclear Energy Division**

Generation IV Forum Zurich meeting leads to progress,

by Frank Carré and Gian Luigi Fiorini, French Atomic Commission (CEA)/Nuclear Energy Division

The Generation IV Forum (GIF) Policy Group meeting, held in Zurich on 26-27 January 2004, led to progress on three main topics: the co-operation agreement at system level, the governance of the Forum, and relations with other organisations.

In Zurich, the US Department of Energy (DOE) presented a draft system agreement – jointly prepared by its State and Trade Departments – covering the first 10 years of co-operation (and providing for extensions in five-year increments). This project of agreement will establish the R&D framework required to address Generation IV system feasibility issues, as well as to confirm system performance, established during the system selection process. Future phases of demonstrating and

commercialising the six selected nuclear systems will be the subject of further agreements. The parties to this system agreement are intended to be governmental entities or mandated national laboratories. GIF members are to be invited to give their input on the draft system agreement, which is expected to be finalised by mid-2004.

As regards the organisation and the governance of the GIF, the principles proposed at the previous meeting (on 24-26 September 2003 in Toronto) were confirmed, and the main focus of the discussion was on the role of the OECD/NEA as support to the Technical Secretariat of the GIF. The following decisions were made:

- W. Magwood of DOE was elected as the GIF Policy Group's chairman, for three years. His appointment officially began on 1 January 2004, and he will be assisted by two co-chairmen: J. Bouchard of the French Atomic Commission, CEA and Y. Sagayama of JNC;
- the principles of organisation and governance will be the subject of Policy Statements intended to complement the charter of the GIF;
- a Policy Secretariat assists the chairman of the Policy Group during its three-year mandate, whereas a Technical Secretariat provides ongoing support to the technical activity of the GIF and centralises data integration.
- the Policy Group confirmed the organisational structure (in Figure 2).
- all GIF members agreed to give the mandate to the NEA to act as the Technical Secretariat.

Concerning the relationship between the GIF and the INPRO initiative, which falls under the auspices of the IAEA, a series of meetings and exchanges have had the objective of defining those factors which are complementary and to provide project co-ordination:

- INPRO is viewed as intending to refine users' requirements and methodology, in order to assess the suitability of a nuclear technology to IAEA-affiliated countries and to facilitate exchanges of public GIF information to non-GIF member countries; and
- GIF will consider the users' requirements developed by INPRO, especially with a view to enlarging the criteria to make the sustainability of nuclear power a reality.

Among the four GIF countries which are not INPRO participants (the United States, Japan, the United Kingdom and France), France is the only one which has decided to join this initiative.

Furthermore, the GIF will benefit from the advice of a Senior Industry Advisory Panel constituting high-level representatives of the industry, in a position to make recommendations on long-term strategic considerations, including industrial, technical, commercial and statutory aspects. The GIF will also interact with the heads of GIF member countries' safety authorities. A first exchange of this nature, involving GIF Policy Group members, took place at the Toronto meeting. At this meeting the importance of the IAEA safety standards were underscored as

establishing reference criteria and contributing to international harmonisation.

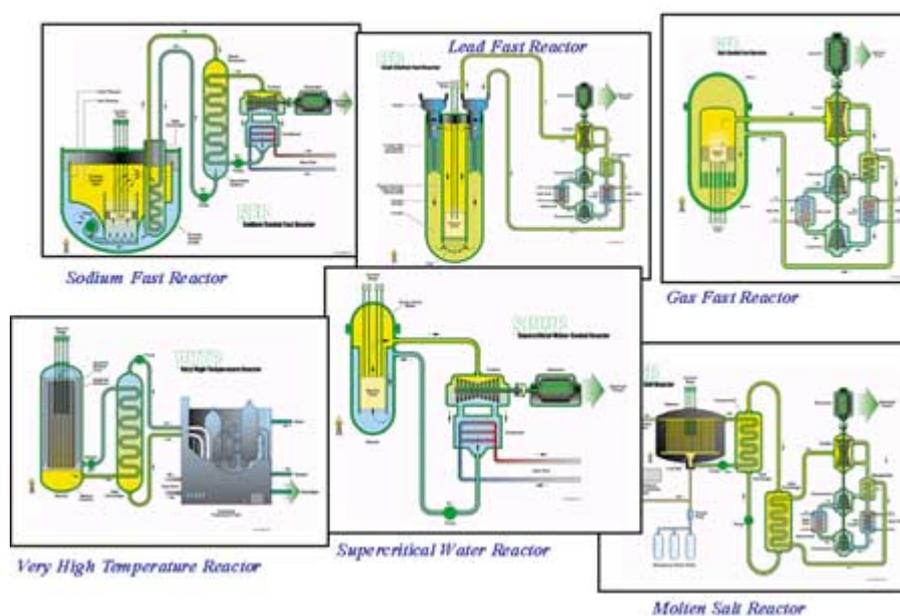
Finally, the following progress has been achieved in preparing the R&D plans for Generation IV systems:

- the Experts Group, which advises the Policy Group, reviewed the current version of the R&D plans drafted for the GFR, SCWR, SFR and VHTR systems, and, in December 2003, issued guidelines for the provisional Steering Committees for these systems to make improvements to these documents by mid-2004;
- the Policy Group decided to set up a provisional Steering Committee for the Lead Fast Reactor, with the United States, Japan, South Korea, Switzerland, and Euratom as participants; and
- establishing a Steering Committee for the Molten Salt Reactor, which was debated by the Policy Group in January, is to be re-examined at the next meeting (May 2004).

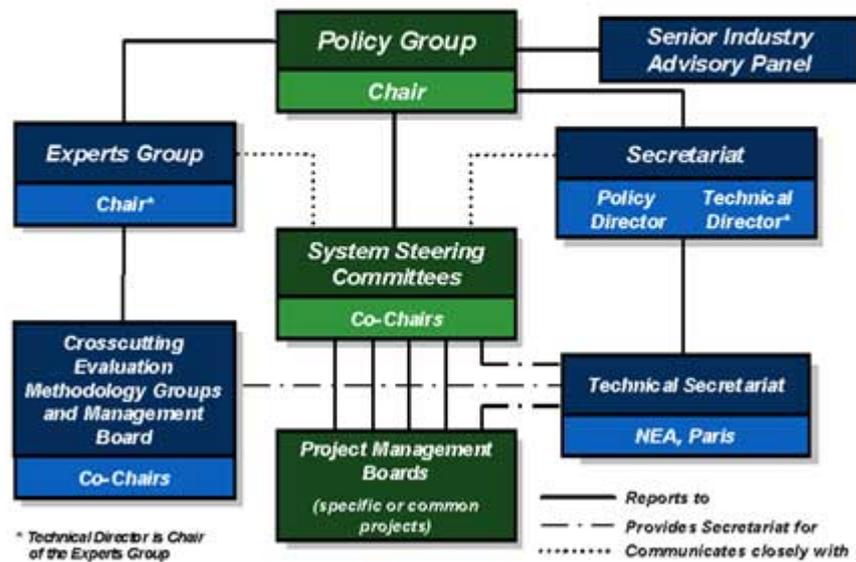
In conclusion, preparations for the GIF's collaborative phase are actively progressing, both in terms of harmonising views on multilateral co-operation agreements, and sharing R&D work among the GIF member countries. This provides excellent prospects for the international development of the selected six Generation IV systems being initiated in 2004.

More information on the status of the Generation IV initiatives, is on the ENS website: <http://www.euronuclear.org/info/generation-IV.htm>.

Fig. 1 : Generation IV : six innovative systems



**Fig. 2 - GIF R&D Organisation and Governance -
DRAFT**



<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/nucnet.htm>

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Japan's Fukui Prefecture approves MOX procurement for Takahama

Issei Nishikawa, governor of the Japanese prefecture of Fukui, approved 20 March plans by Kansai Electric Power Company to sign a contract for the manufacture of mixed-oxide (MOX) fuel – to be used at the utility's Takahama nuclear power station.

Governor Nishikawa had made his intentions known at an earlier press conference, held 15 March, when he said he would invite Kansai Electric president Yosaku Fuji to hear the prefecture's decision "sometime this week." Now that the utility has won civic approval, a condition for MOX use, it will finalise its selection of a company to manufacture and supply the fuel – for use in the Takahama units 3 and 4 830-megawatt (MW) pressurised water reactors (PWRs).

Kansai intends to conclude an agreement soon – and if all goes according to plan, the use of MOX fuel at Takahama would represent the first commercial use of MOX in Japan.

While a target date for the commercial use of MOX at Takahama has not been specified, it is expected to happen there first in Japan. Earlier in March, the Kyushu Electric Power Company also reaffirmed its intention to proceed with the use of

MOX – but likely by 2010 and at the Genkai plant in the southern prefecture of Saga.

Source: NucNet, 22 March 2004.

Swedish N-Plant proposes uprates for two units

Sweden's Ringhals nuclear power plant has asked regulators for permission to increase the generating capacity of two of the plant's units.

The Swedish nuclear power inspectorate, SKI, has been asked to approve an uprate of 380 megawatts (MW) at Ringhals-3 and an uprate of 40 MW at Ringhals-1. The current generating capacities at the plants are 920 MW and 830 MW respectively. If the uprates are approved, the generating capacity at Ringhals-3 would be increased immediately by 80 MW, and would gradually be increased by a further 300 MW.

After considering the applications, SKI is expected to present its recommendations to the Swedish government. Sweden's environment ministry will consider those recommendations and make proposals for a final decision to be taken by the government. Ringhals is a four-unit plant owned by Vattenfall AB (74.2%) and Sydkraft AB (25.8%). Unit one is a boiling water reactor (BWR) that entered commercial operation in 1976, while units two to four are pressurised water reactors (PWRs) that started commercial operation in 1975, 1981 and 1983 respectively.

Source: NucNet, 30 March 2004.

Swedish Liberals revive energy debate with talk of nuclear expansion

Ahead of an expected Swedish government report on energy policy, the country's Liberal Party has reinvigorated the national nuclear debate by suggesting not only that nuclear not be phased out but be allowed to expand to satisfy Sweden's electricity needs.

Liberal vice chairman Jan Björklund heads the 10-member party study group, which spent a year studying the energy issue and which presented its recommendations on 4th April. While the Liberal Party has yet to adopt the group's position as official policy, party chairman Lars Leijonborg has said he agrees with it in principle.

Among the most significant elements of the Liberal study group's proposal is that nuclear represents a key way for Sweden to fulfil its commitments to reduce greenhouse-gas emissions under the Kyoto Protocol – while securing a reliable source of energy in the process. The proposal calls for the repeal of the results of a 1980 referendum in Sweden, which were incorporated into a parliamentary decision to phase out the use of nuclear energy by 2010. While that 2010 target has been relaxed over time, subsequent policy decisions have set Sweden up for a 'German-type' policy aimed at a gradual end to the use of nuclear energy. The Liberal Party would like to see, by contrast, changes to the existing energy bill to allow for the expansion of nuclear energy in Sweden, and for the construction of new reactors, as

needed.

Sweden's other political parties have voiced a range of opinions regarding the Liberal Party's position. They have also remained cautiously neutral, however, ahead of the expected delivery of a report, commissioned by the ruling Social Democrats, on the existing nuclear phase-out programme.

Bo Bylund, director-general of Sweden's National Railway Administration, was appointed by the government in 2002 to discuss details and a timetable for the phase-out with the country's nuclear utilities – to be based, like the German model, on market conditions. Mr Bylund is expected to present his findings by the end of April – with the government potentially adopting his recommendations and taking them to parliament for approval in autumn.

But the Liberal Party study group argues that, based on market demands, rather than phase out nuclear, Sweden may need to add two or three units over the next 20 years. And Mr Bylund himself has enlivened the debate by also conceding in a recent interview that nuclear's contribution to Sweden's electricity generation can not be compensated for through the country's planned programme of energy conservation, wind power and bio-mass, or increased imports.

Source: NucNet, 8 April 2004

First criticality for Japan's Hamaoka-5

Japan's Hamaoka-5 nuclear reactor unit achieved first criticality on 23 March, and is set to be connected to the grid as scheduled next month.

Construction of the Chubu Electric Power unit, situated in Shizuoka prefecture, started just four years ago and fuel loading began in February of this year.

Hamaoka-5 is Japan's third advanced boiling water reactor (ABWR) unit with a net installed generating capacity of 1325 megawatts (MW) and it is scheduled to enter commercial operation in January 2005.

Hamaoka-2 started an inspection outage in February and it is expected that the examination, including trial operations, will take about nine months. Hamaoka-3 and -4 resumed operations in November and September last year respectively following inspections.

Source: NucNet, 31 March 2004.

<http://www.euronuclear.org/library/public/enews/ebulletinspring2004/member-societies.htm>

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Editorial staff:

Editorial Staff:

Andrew Teller, Editor-in-Chief – Yolanda Dickhart, Editor

Contributors to this Issue:

Jack Ashton (FORATOM), Bertrand Barré (ENS), Frank Carré (CEA/Nuclear Energy Division), Marie Dufkova (Czech Nuclear Society), Gian Luigi Fiorini (CEA/Nuclear Energy Division), Pol Gubel (ENS), Gudrun Holmberg (Westinghouse Sweden), Hans Korteweg (FORATOM), Manuel Martin (Spanish YGN), José Luis Perez (Spanish YGN), Mihaela Stiopol (AREN), Marjan Tkavc (NSS), Sami Tulonen (FORATOM)

Graphic Designer:

Marion Brünglinghaus

Rue Belliard 15-17, BE-1040 Brussels

Phone +32 2 505 30 50 - Fax: +32 2 502 39 02

E-mail: ens@euronuclear.org - <http://www.euronuclear.org>

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