

ANNUAL REPORT 2015

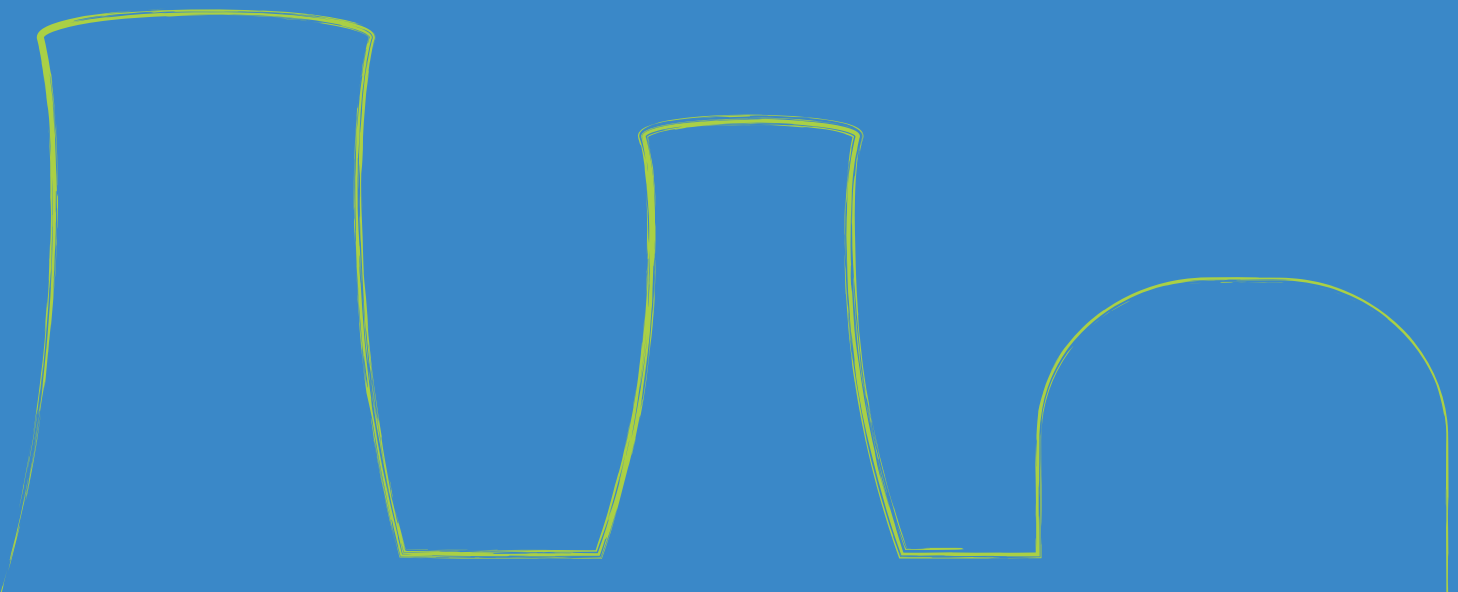


TABLE OF CONTENTS

View from the bridge	2
The Voice of the Nuclear Industry	4
Facts & Figures	12
The Policy Agenda	14
FORATOM Events	24

VIEW FROM THE BRIDGE

For FORATOM, 2015 was a year of consultation. More than a year after the European Parliament was elected in June 2014 and a new European Commission entered into office in November, the policy of the Commission has been to launch public consultations on every topic they wish to address or legislate on, especially related to the Energy Union. We have diligently followed these processes and made our views well known to the EU institutions.

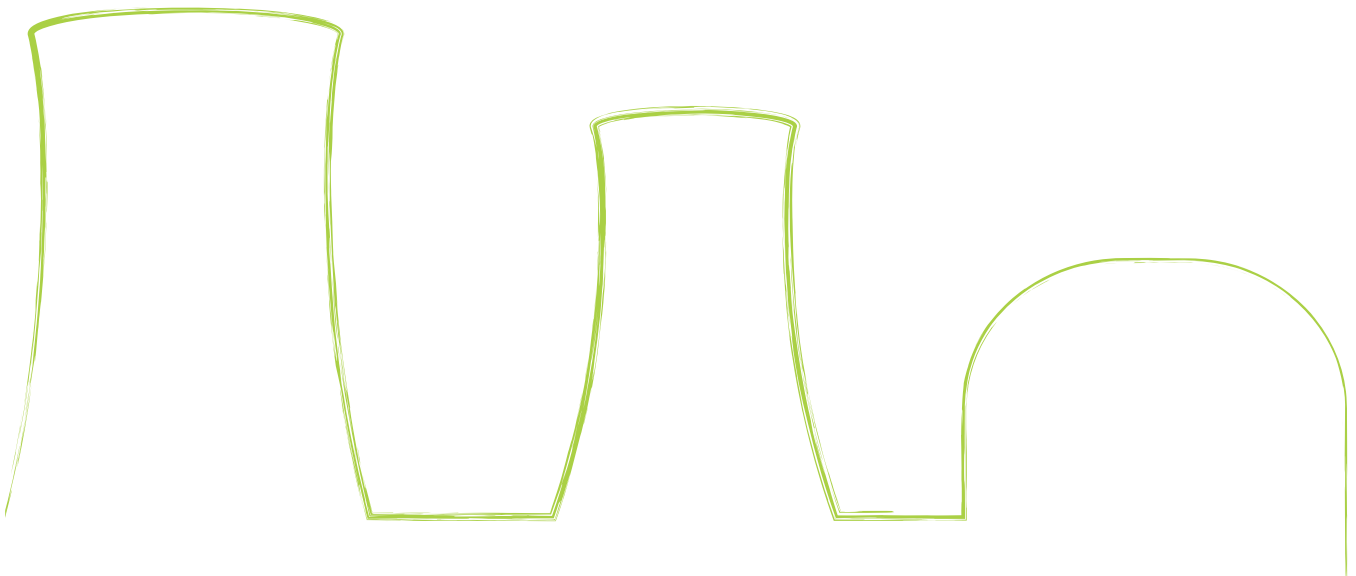
FORATOM worked tirelessly for the duration of the year to raise the profile of nuclear energy in all policy initiatives, the ensuing debates and the stakeholder communities involved. With the high number of policy developments in Brussels, FORATOM was engaged in no less than 15 different tracks to ensure that nuclear energy is part of the EU's climate and energy plans. Three of these can be considered as imperative to the future of nuclear energy in the EU.

Firstly, while the outgoing Commission team had focused on the *2030 Climate and Energy Framework*, the new portfolio of the *Energy Union*, headed by Commission Vice-President Maroš Šefčovič, developed the vision of a harmonised, secure, affordable and climate-friendly European energy system. The project is based on a fully integrated European energy market with security of supply, energy efficiency, emissions reduction, and research and innovation.

The Energy Union project addresses the fact that the current market arrangements do not encourage long-term investment in low carbon technologies. FORATOM underlined in several position papers and through other channels the essential contribution made by nuclear energy in achieving the key objectives of the project: sustainability, competitiveness and security of supply. Nuclear is a competitive, reliable and clean source of energy and has a pivotal role to play in the establishment of the Energy Union.

As part of the Energy Union initiative, the EU launched a proposal for the re-designing and integration of the energy market. FORATOM believes that investment in all forms of low carbon energy generation should be driven by market signals and on a level playing field. The design should support the financial and risk profile which is common to both nuclear and renewable energy projects – high up-front capital costs and low marginal costs.

Secondly, FORATOM was delighted that the European Commission had finally decided to follow up on its legal obligation under the Euratom Treaty to publish an updated Illustrative Programme for Nuclear Energy (PINC). Since the last PINC was published in 2007, the nuclear industry, the world of energy politics and the geopolitical situation have all changed significantly and a new EU nuclear policy programme is long overdue. Despite expectations to have the document ready by the end of 2015, the Commission decided to delay publication to 2016.



The PINC is not legally binding but it is a key policy document which should address several vital areas for the nuclear industry. It needs to recognize nuclear energy as an effective greenhouse gas mitigation option, set up a system to give assurances to investors in nuclear energy projects, and ensure that the EU's technological leadership is maintained. Above all, the PINC should enshrine a target of at least maintaining the current nuclear power output in Europe, which will require the commissioning of about 100 new nuclear reactors between 2025 and 2050. Providing a stable policy and regulatory framework is the first step in obtaining the financing and achieving this enormous task.

Thirdly, the Paris climate change agreement adopted in December 2015 has enshrined the world's commitment to limiting global temperature increases to "well below 2 degrees Celsius". The Intergovernmental Panel on Climate Change, the leading scientific body in charge of assessing climate change issues, has already pointed out that nuclear energy is a low carbon source of electricity and several states have stated their intent to use nuclear as a key component in their climate change mitigation and adaptation plans. An increasing number of nations are recognising that the decarbonisation of an industrial or services-based economy cannot be achieved without the constant, cheap and clean energy supply provided by nuclear technology.

FORATOM took part in the Paris conference through the *Nuclear for Climate* initiative. We achieved widespread visibility by promoting nuclear as a part of the solution to climate change and organised several presentations at the conference. Our support for the initiative will continue during the preparations of the up-coming climate conference in Morocco in November 2016.

Near the end of 2015, Mr Šefčovič gave his first *State of the Energy Union* report, stating that the EU stands alongside Brazil and Canada as the only major economies in the world which have managed to produce more than half of their electricity from clean sources. All three rely on nuclear power in combination with renewables.

We firmly believe that nuclear energy will continue to have a significant role to play in the development of the European energy system and its decarbonisation. Only through a stable energy mix of nuclear and renewable energy sources can Europe maintain its competitive advantages in the global economy while achieving its climate and energy targets. FORATOM will continue to make these messages heard in the future and show that the nuclear industry is innovative and capable of taking on these difficult challenges.



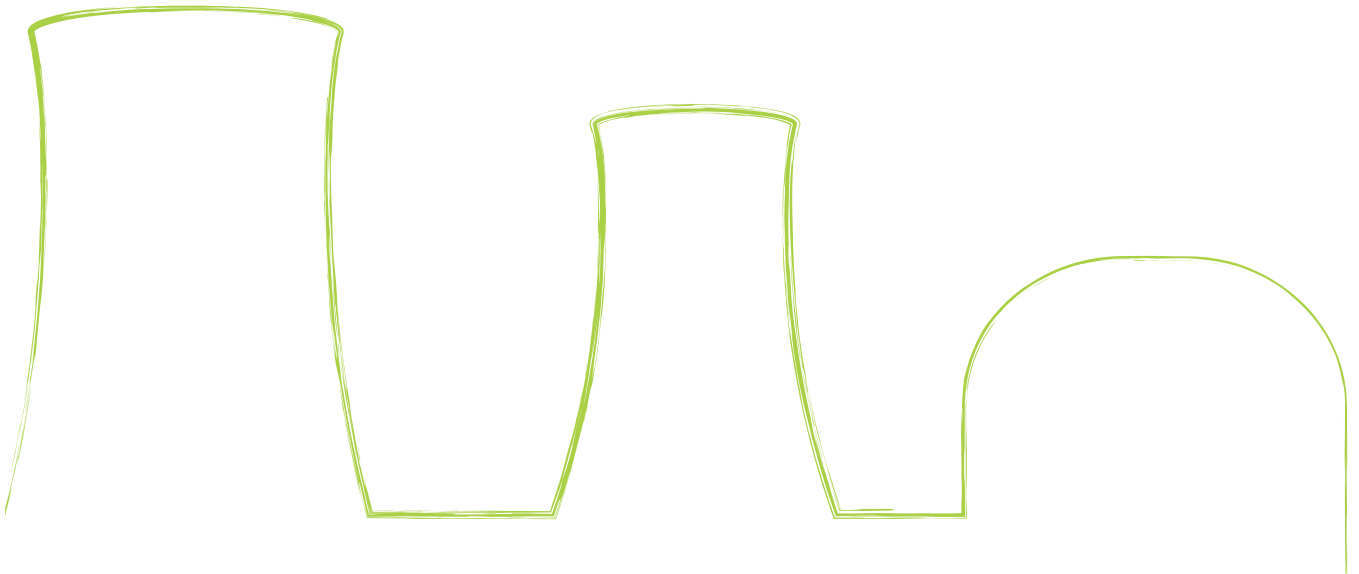
Jean-Pol Poncelet
Director General



Keith Parker
President



THE VOICE OF THE NUCLEAR INDUSTRY



Who we are

FORATOM is the Brussels-based trade association for the nuclear energy industry in Europe. FORATOM acts as the voice of the European nuclear industry in energy policy discussions with EU Institutions and other key stakeholders. The membership of FORATOM is made up of 16 national nuclear associations representing over 800 firms.

The nuclear industry can only interact with international institutions and its representatives if the bridge between them is kept permanently open and continuously serves as a two-way channel for ideas, opinions and open debate.

Continuous interest representation activities are crucial to FORATOM maintaining its status as a constructive and proactive dialogue partner for EU policy-makers.

Networking, lobbying

After the institutional and political changes in the European Union institutions in 2014, FORATOM was faced with the immense task of identifying, lobbying and communicating with a largely new set of institutional dialogue partners. FORATOM adapted quickly to the new structure, leadership and composition of the European Commission and European Parliament and in 2015 managed to forge new, stronger relationships with the institutions in order to continue achieving its purpose. Adapting to the new organisational

set-up also meant monitoring new initiatives and participating in innovative dialogue. The continuous streams of communication and strong networks were maintained with the European Institutions, think-tanks and other stakeholders as part of an inclusive political process. Building on previous experience, the transition to working with the new institutional system was made as smooth as possible.

What we do

Provide information and expertise on the role of nuclear energy; produce position papers, newsfeeds, responses to public consultations, analyses of public opinion etc; organise regular networking events like dinner debates, workshops, one-on-one meetings, press briefings, visits to nuclear facilities etc.

The voice of the nuclear industry was also maintained within the corridors of the European Parliament with numerous events held in cooperation with MEPs to make sure the issues for the industry are heard and taken into account, especially regarding the building up of the Energy Union. FORATOM aimed its activities at the new generation of MEPs which came into office in 2014 to inform them of the benefits of nuclear energy. FORATOM also continued to work closely for the advocacy of nuclear energy within the

ITRE (Industry, Research and Energy) and ENVI (Environment, Public Health and Food Safety) Committees.

The European Council, although it does not fulfil a legislative function, determines the general orientation and priorities of EU policy. The Council of Ministers, on the other hand, plays a decisive role in deciding EU legislation. By contributing to the work of the Council's Atomic Questions Group (AQG) FORATOM was able to continue contributing to that process too.

Communicating

In 2015, the objectives of FORATOM's communications strategy remained unchanged: to identify nuclear advocates and opponents, monitor and report on political developments to its members and other key stakeholders, to articulate the industry's key messages, to respond to and support the media and to use all the communications channels and tools at its disposal to inform stakeholders of the facts about nuclear energy.

FORATOM focused on developing two areas of its communications strategy which had been stagnating: press relations and social media. While the relationship with the general EU press remained difficult, new contacts were established with several media outlets based both in Brussels and throughout Europe. A new, wider range of media, both general and specialised, were introduced to the benefits of nuclear energy in Europe and were added to FORATOM's permanent correspondent's list. With further actions taken during the COP21 climate change conference in December 2015 in Paris, FORATOM is quickly becoming the reference point of EU journalists when they need an opinion, quote or just more information regarding the civil nuclear sector on the continent.

The social media arena is a crucial medium for conveying our key messages and for keeping abreast of and responding to evolving news. The results speak for themselves: The number of followers of FORATOM's *Twitter* account totaled over 2,800 by the end of the year. These included journalists from the European, international and specialised media, who use our Twitter account as a source of breaking news and information. A number of EU decision-makers are also followers. The rest are made up of nuclear employees and companies, NGOs, consultants, researchers etc. FORATOM tweeted 1400 times during 2015, and in total these tweets were viewed over 2 million times by Twitter users. FORATOM's newly-created infographics were posted on *Facebook*, *Twitter* and *LinkedIn*. They were retweeted over 100 times, which resulted in over 70,000 Twitter

"impressions" (the number of times Twitter users saw the tweet).

FORATOM's *Facebook* page gained around 200 'fans' and reached a total of 600 fans in 2015. Most of them were male, in their 30's, and living in Belgium, Italy, the Czech Republic, the US or France. They formed a core group of well-informed nuclear advocates. On average 300 to 400 people see FORATOM *Facebook* posts every week. The number of followers of FORATOM's *LinkedIn* page also almost doubled in 2015 reaching over 1,100 followers, most of which were from the energy sector. FORATOM used *LinkedIn* mainly to promote its publications and events, and to increase the visibility of the *Nuclear for Climate* campaign. Each FORATOM post on *LinkedIn* was seen on average by 1,000 users. These results were achieved without using *Facebook*, *Twitter* or *LinkedIn* ads, making FORATOM's *Facebook*, *Twitter* and *LinkedIn* traffic purely 'organic.'

FORATOM posted five videos on its *YouTube* channel in 2015 including FORATOM Director General's statements on the Illustrative Nuclear Programme (PINC) and the New Market Design, interviews of experts like Hans Codée, former Director General of COVRA and of Third Party advocates like Stephen Tindale, a pro-nuclear environmentalist. They all start with a short 10-second animation, which summarizes visually what FORATOM is and does.

The *Nuclear for Climate* campaign also increased FORATOM's visibility on social media. Ahead of the COP21 climate talks in Paris, *Nuclear for*

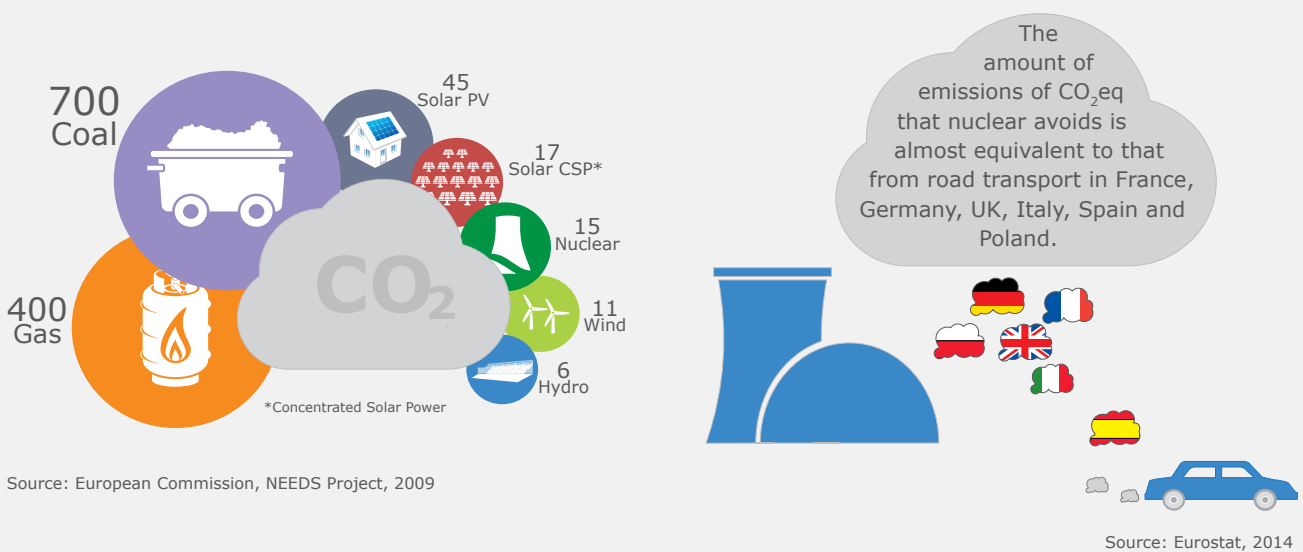


Climate organised several intensive social media campaigns to draw the attention of the decision-makers and the general public. The tweets and Facebook posts were relayed on FORATOM's social media platforms and it resulted in boosting the visibility of FORATOM on social media. The number of views of FORATOM tweets for instance jumped to over 200,000 during this period and its Facebook posts reached on average 1,000 people per week. The tweets and Facebook posts included

pictures of nuclear advocates holding posters containing the campaign's main messages, film interviews of people from all over the world, infographics, quotes from third party advocates, blog articles etc. They aimed to stress the climate change credentials of nuclear, to emphasize the grassroots and global dimension of the initiative and to show that nuclear is supported by many prominent people.

The amount of CO₂ emitted by nuclear energy is comparable to that of renewables.

Comparison of greenhouse gas emissions CO₂ eq/kWh



Nuclear for Climate is an initiative launched by several nuclear societies and associations, including the European Nuclear Society (ENS), the American Nuclear Society (ANS) and the French Nuclear Society (SFEN), with the goal of jointly promoting the climate change credentials of nuclear ahead of the COP21 climate talks in Paris (in December 2015) and beyond.

As a result of the increasingly effective presence in the fermenting cauldron of the social media, FORATOM's communications output enabled the European nuclear industry to reach out to a broader range of target audiences, engage regularly with more stakeholders, and articulate its position on evolving policy initiatives and issues more rapidly and in a more universal language.



Our Members

The membership of FORATOM is made up of 16 national nuclear associations- active right across Europe and the companies that they represent, and two utilities, the Polish nuclear company, PGE and the Czech energy company, ČEZ. Over 800 firms are represented- from Europe's (and the world's) largest nuclear utilities and nuclear fuel cycle companies to other undertakings engaged in the transport of nuclear materials and the management of radioactive waste:

- reactor and component vendors
- europe's (and the world's) largest nuclear utilities
- nuclear fuel reprocessing companies
- uranium mining, milling and enrichment companies
- engineering companies
- plant decommissioning companies
- nuclear transporters
- waste storage facilities
- lawyers, consulting, insurance and service companies



The Executive Board

Teodor Chirica, ROMATOM, Romania

Antonio Cornadó Quibús, FINE, Spain

Luca D'Agnese, SE, Slovak Republic (until 31 December 2015)

Bertrand de L'Épinois, FAIF, France (President from 1 January 2016)

Ralf Güldner, DATF, Germany

Peter Haslam, NIA, UK (from 1 January 2016)

Esa Hyvärinen, ET, Finland (from 1 January 2016)

Mats Ladeborn, SAFO, Sweden

Robert Leclère, BNF, Belgium (from 1 January 2016)

Keith Parker (as Immediate Past President from 1 January 2016)

Paul Rorive, BNF, Belgium (until 31 December 2015)

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Bertrand de L'Épinois
Incoming President
2016-2017



Keith Parker
Outgoing President
2014-2015

The Director General



Jean-Pol Poncelet

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15
PEOPLE

9
LANGUAGES

10
AREAS OF
EXPERTISE



Jean Barbaud
ENISS Director



Daphné Charleton
Communications Manager



Marion Chulia
Head of Regulatory & Legal Affairs



Danielle de Crombrughe-Lamotte
Executive Assistant



Graziella De Riddere
IT Manager



Patricia Empain
Executive Assistant



Andrei Goicea
Institutional Affairs Senior Manager



Muriel Glibert
ENISS Manager



Damien Hennequart
Communications Director



Richard Ivens
Institutional Affairs Director



Emilia Janisz
Institutional Affairs Manager



Lubomir Mitev
Communications Manager



Berta Picamal
Executive Advisor to the DG &
Institutional Affairs Senior Manager



Jean-Pol Poncelet
Director General



Aude Van Hille
Administrative Assistant

As of 1 May 2016

In Memoriam



It was with deep sadness that we learned of the loss of Jean-Pierre Berger, Director of ENISS (seconded from EDF) who passed away at the end of June 2015 after fighting a long battle against illness, facing it with great courage and dignity.

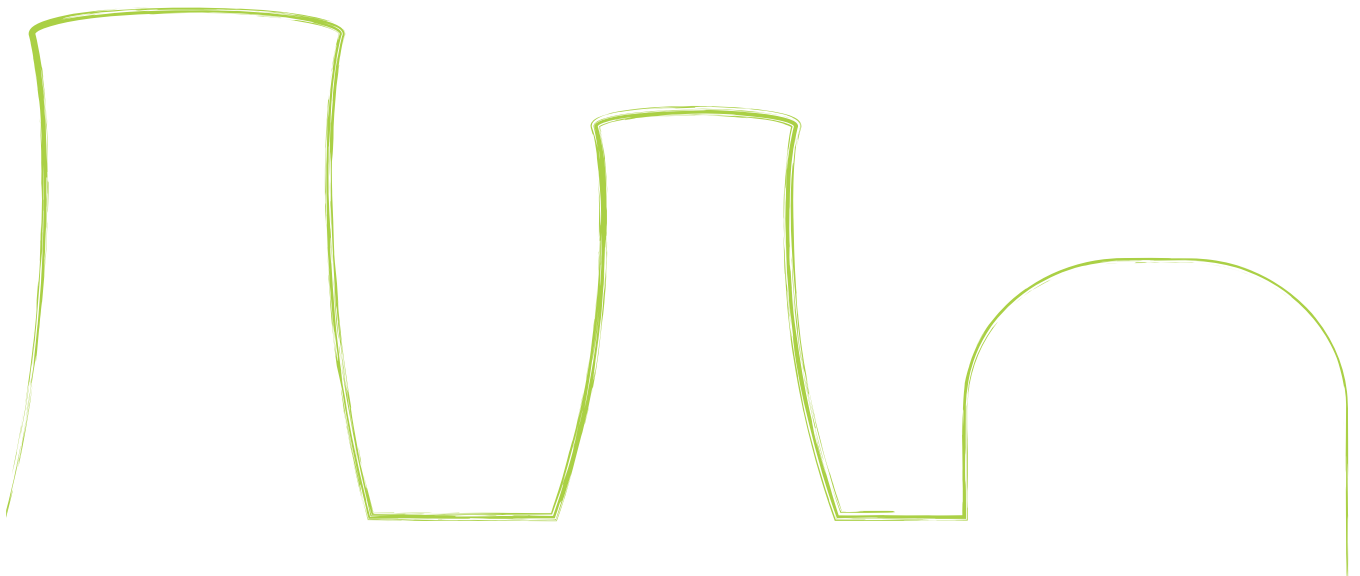
A graduate of the "Ecole Centrale de Lyon" (France), Jean-Pierre had a brilliant career as an engineer. He was hired by EDF in 1974 and was directly involved in the start-up of Porcheville thermal power plant and Bouchain gas power. In 1980, he joined the SEPTEN (the EDF engineering division) where he held numerous positions, notably within the nuclear safety department and to the management unit making him a recognized expert in the field of nuclear safety.

From 2005 to 2010, he worked in Washington as a EDF international representative in the Nustart Energy Development. In 2010, he became Director of ENISS, organisation set up in 2005 under the umbrella of FORATOM. We would like to take this opportunity to pay tribute to the great commitment and dedication that Jean-Pierre showed during the five years that he worked side-by-side with us.

We will remember him as a truly remarkable person with outstanding human and professional qualities. Simplicity, humor and great kindness are the best words to define Jean-Pierre and are just some of the qualities that endeared him to all who worked alongside him. We thank him for all the tireless work that he carried out on behalf of the European nuclear industry, and for the way he always defended and promoted its interests.



FACTS & FIGURES



In 2015, Europe's nuclear industry continued to deliver a continuous stream of electricity to power the EU's economy in a low-carbon and sustainable manner. Nevertheless, two nuclear reactors were shut down during the year, bringing the total number of operational nuclear units to 129.



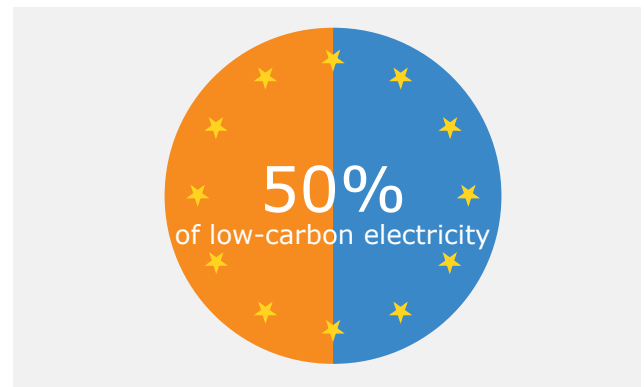
The first unit to shut down was at the Grafenrheinfeld plant in Germany. On 27 June 2015, the 1,275-mw reactor was permanently shut down and entered the decommissioning phase after 33 years of operation. Initially, the reactor was scheduled to shut down at the end of the year, but the reactor's owner decided to stop operation earlier than foreseen for economic reasons related to a planned refueling in the middle of the year. This brought the number of Germany's operational units down to eight.

Then, on 31 December 2015, the last of the UK's Magnox-type reactors located at Wylfa, in Wales, was shut down for good. The 490-megawatt unit began operation in 1971 and at the time was the most technically advanced nuclear power station in the UK and the world's most powerful. Originally, the reactor was due to shut down in 2010 but continued to generate electricity for an additional five years. Magnox, the operating company, said this was made possible by a pioneering method of moving partly used fuel from the second unit at the plant (which was shut down in 2012) to the other due to the manufacture of Magnox fuel having ended in 2008.

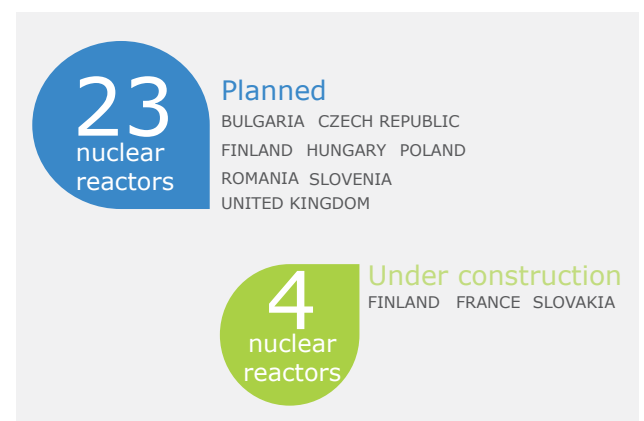
These changes in the European nuclear landscape brought the share of nuclear electricity in the

EU down from 28 to 27 percent. Nuclear now accounts for 50 percent of the EU's low carbon electricity, with the other half produced by renewable sources of energy and hydropower.

However, nuclear energy remains within the energy policy of the EU's Member States. There are currently four projects under construction in Europe – two in Slovakia and one each in Finland and France. There are also more than 20 planned nuclear units in the EU using the most modern and advanced technology available in the world today. Due to its low lifecycle carbon dioxide emissions, high capacity factor and long-term reliability, nuclear continues to be a preferred energy source in half of the EU's Member States. The year 2015 will also go down in history because of the first ever licence being issued in Europe

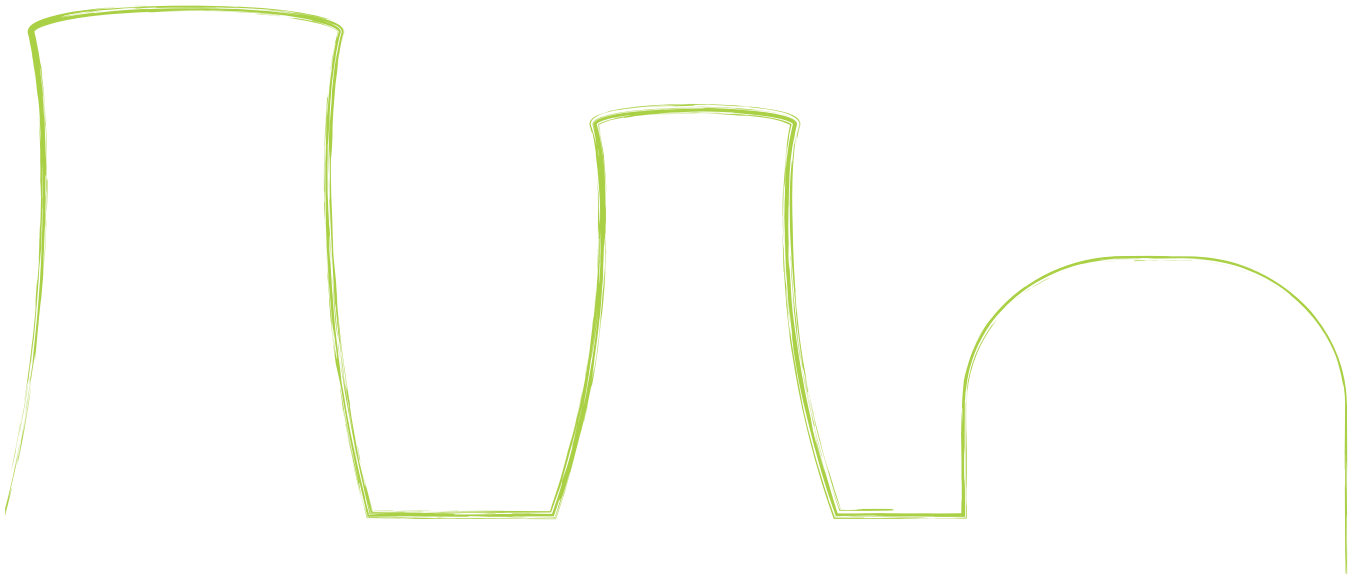


for the construction of a final disposal facility for spent nuclear fuel. The licence, issued to Finland's Posiva Oy, is recognition of the extensive R&D work carried out in the area of spent fuel management for more than 40 years, culminating in the development of a safe final disposal solution. The facility has started construction and is expected to become operational in the early 2020s.





THE POLICY AGENDA



Energy Union

After the announcement made in 2014 by European Commission (EC) President Jean-Claude Juncker about the building of a 'European Energy Union' as one of the Commission's main priorities, the EC's Communication "A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy" was released on February 2015. FORATOM followed closely the developments on the Energy Union in all the EU Institutions, taking every possible opportunity to highlight the important role of nuclear energy in achieving decarbonisation of the economy and increasing security of supply.

The proposed Energy Union strategy comprises five dimensions considered to be the solution to bringing greater energy security, sustainability and competitiveness to the EU:

- Energy security, solidarity and trust;
- A fully integrated European energy market;
- Energy efficiency contributing to moderation of demand;
- Decarbonising the economy;
- Research, Innovation and Competitiveness.

FORATOM stated its disappointment that the section of the Communication dealing with decarbonisation made no reference to nuclear energy. Further, the section on security of energy supply, rather than mentioning the benefits of nuclear, only included information about the risks

New Energy Market Design

On July 2015, the European Commission launched a public consultation on a new European energy market design. As part of the European Energy Union project, the EC plans to fundamentally transform Europe's energy system into one that delivers secure, sustainable, competitive and affordable energy to European consumers. In its Political Guidelines, the Juncker Commission made the development of a resilient Energy Union with a forward- looking climate policy one of its strategic objectives. The EC is expected to publish legislative proposals for a new European electricity market design by the end of 2016.

On 8 October 2015, FORATOM published its

of a small number of EU reactors relying on a single supplier for their nuclear fuel.

After the Communication's publication, EC Vice-President Maroš Šefčovič, in charge of the Energy Union portfolio, initiated a tour of the EU Member States to present the opportunities that the Energy Union offers for Europe. Based on the conclusions of the tour, the EC released the first State of Energy Union package on 18 November 2015. This time, the package included a welcome page on nuclear energy in the annex on the Energy Security Strategy and a separate annex on implementation of the Nuclear Safety Directive. The package was a good opportunity to take stock of the progress already made towards building the Energy Union and to highlight the issues where further attention was needed. The EC also said the State of Energy Union report will be released on a yearly basis to continue the feedback process.

As response to the EC communication, the European Parliament issued an own initiative report entitled "Towards a European Energy Union", adopted in the plenary session on 24 November. The report recognizes that "...nuclear power is one of the most important contributions of the European energy system, providing for lower CO₂ emissions while simultaneously limiting import dependence, securing a stable production of electricity that can serve the internal market".

response to the public consultation. FORATOM believes that investment in all forms of electricity generation should be driven by market signals. This means that market-distorting subsidies should be progressively removed so that the market price reflects the actual cost of generation, including system costs and back-up. In the absence of an effective carbon price under the EU Emissions Trading System (ETS), the need for alternative investment signals is particularly important for low carbon generation, i.e. nuclear, renewables and eventually carbon capture and storage (CCS).

The current low wholesale market prices, due to the over-supply of subsidised low marginal cost

renewables and the reduced overall demand for electricity, are insufficient to incentivise new investment in any type of electricity generation, but the problem is particularly acute for low carbon generation with its high upfront capital costs and correspondingly high financing charges.

The Illustrative Programme on Nuclear Energy (PINC)

In 2015, the EC announced its intention to publish an «Illustrative Programme for Nuclear Energy» (PINC) by the end of the year. The EC is mandated by the Euratom Treaty to periodically issue a new PINC to indicate targets and programmes for nuclear production and the corresponding investment required. However, the document's publication was delayed until early 2016.

FORATOM issued a Position Paper on 18 September 2015 on the need for a new PINC and what it should contain. Since the publication of the latest PINC in 2007, the situation for nuclear power changed considerably both within the EU and globally. The financial crisis, the Fukushima accident and the tensions in Ukraine have all had an impact on the energy sector as a whole as well as on the nuclear sector in particular. Global interest in nuclear power is growing and there are currently more nuclear power plants under construction around the world than there have ever been (67 reactors according to the IAEA).

The confirmation by the Intergovernmental Panel on Climate Change that nuclear power is "an effective greenhouse gas mitigation option" needs to be underlined in the PINC. FORATOM firmly believes that the EU should maintain at least the current capacity of nuclear generation up to and beyond 2050. This will entail the commissioning of more than 100 nuclear reactors over the next 35 years. Major investments will be required in nuclear new build, lifetime extension and safety upgrades, fuel cycle operations, decommissioning and waste management.

Nuclear energy contributes to all three objectives of EU energy policy: security of supply, decarbonisation of the electricity sector and competitive power prices. The EC acknowledges in its "Policy framework for climate and energy in the period from 2020 to 2030", published in January

FORATOM also closely followed the opinion of the EESC and the report of EP on the Energy Market Design issue, promoting the same principles as the ones highlighted in the response to the EC consultation.

2014, that nuclear contributes to a competitive, secure and sustainable energy system in the EU. FORATOM asks the EC to apply a technology neutral approach which will facilitate investment in all low carbon technologies including nuclear, and provide a stable regulatory and investment framework.

FORATOM's Position Paper highlights the actions needed on energy market design to restore confidence among potential investors. There should be no discrimination between technologies that deliver low-carbon energy, and full account should be taken of system costs. The EU should also facilitate nuclear development projects by providing a stable regulatory and investment framework given the importance of nuclear power for achieving the EU's climate action goals. Confidence needs to be built among equity investors in nuclear power projects to maintain Europe's leadership role in nuclear technology and innovation. FORATOM also urged the Commission to encourage the nuclear regulatory bodies represented at ENSREG and WENRA to accelerate the harmonisation of regulatory requirements in order to facilitate the deployment of nuclear technologies in the EU Member States.



EURATOM Article 41

Pursuant to Article 41 of the EURATOM Treaty, nuclear industry actors in the EU are obliged to notify any investment proposal on nuclear projects to the European Commission. Under the umbrella of the Energy Union project, a specific action is to be undertaken by the EC: to present a proposal for a "Regulation updating the information requirements of Article 41 of the Euratom Treaty in the light of the European Energy Security Strategy". A public consultation was launched on 3 November 2015 and with the deadline being 25 January 2016.

FORATOM strongly welcomes the EC's initiative to revise the Communication requirements, which should contribute to improving the communication process in the nuclear field. One of the main objectives of the Euratom Treaty is

ETS reform

The EU Emissions Trading System (EU ETS) is a 'cap and trade' system which limits the total volume of GHG emissions from installations and aircraft operators responsible for around 50% of EU GHG emissions. The system allows trading of emission allowances so that the relevant emissions stay within the cap and measures can be taken to reduce emissions at least cost. The EU ETS is a major tool of the European Union in its efforts to meet emission reduction targets now and in the future and covers more than 11,000 power stations and industrial plants in 31 countries.

The system was first introduced in 2005, and has undergone several changes since then. The implementation of the system has been divided into distinct trading periods over time, known as phases. The current (third) phase of the EU ETS

indeed to facilitate nuclear investments in the EU. Therefore, FORATOM analysed the implications of the potential regulation to be adopted by the EC and submitted a contribution to the public consultation.

FORATOM believes there is room for improvement in the way the communication process works. It makes several proposals to improve how companies communicate their major investments to the EC, and how the EC discusses with companies and conveys its views to the Member State concerned. FORATOM also suggests streamlining the process in order to make it more efficient.

The results of the public consultation and further steps taken by the EC are expected in 2016.

began in 2013 and will last until 2020.

The EC presented on 15 July 2015 a legislative proposal to revise the EU ETS for the period after 2020 (fourth phase). The reform is the first step towards delivering on the EU's target to reduce greenhouse gas emissions by at least 40% domestically by 2030 in line with the 2030 climate and energy policy framework and as part of its contribution to the new global climate deal agreed in Paris at COP21, where 1.5 degrees C is the desired maximum temperature increase.

The discussions on ETS reform are taking into account the current carbon price which is very low (around 5 euros/t CO₂) while the potential investors in low carbon technologies would like to see a minimum level of around 30 euros/t CO₂.

Spent Fuel and Radioactive Waste Management

The EU's Radioactive Waste and Spent Fuel Management Directive, adopted in 2011, requires that all EU Member States should have a national policy for the management of the materials concerned. To achieve this, all EU countries should draw up national programmes for the disposal of nuclear waste, including plans for the

construction of nuclear waste disposal facilities. All relevant information on radioactive waste and spent fuel is to be made available to the public.

The national plans should provide a comprehensive account of established general principles in the Member States, the organisational and legal

framework in addition to the strategies governing the management of all kinds of radioactive waste, already existing or projected for the future. The deadline for submission of the national plans to the EC was 20 August 2015 and several Member States fulfilled their commitments by sending in a final report and plan, while others submitted draft plans and several have not delivered. The EC confirmed that infringement proceedings will be applied to those not having complied with the deadline fixed by the Directive.

The EC had six months after the deadline to review and analyse the reports received and ask questions or clarifications to the Member States if deemed necessary, and then publish a report to the Council and the European Parliament. FORATOM monitored progress on the subject and identified the different issues at stake. The decisions made by governments and national authorities in the plans will have a major influence on the future activities of the nuclear industry.

WENRA's Post-Fukushima activities

In March 2012, WENRA mandated its Reactor Harmonisation WG (RHWG) to conduct an in-depth review of the existing Safety Reference Levels (SRL) in light of the lessons learned from the Fukushima accident and to develop guidance documents on assessment of natural hazards and the evaluation of margins for cliff edge effects.

WENRA decided to launch a public consultation on the revised operating reactor Safety Reference Levels (SRLs) that WENRA RHWG finalised. The consultation process started on 1 December 2013 and ended on 28 February 2014. FORATOM's ENISS, which deals with safety standards, carried out an in-depth analysis of the revised SRLs and developed Position Papers that presented the views of its members, highlighted the problems and challenges encountered and assessed the potential impact that the SRLs might have on nuclear industry. WENRA received a total of 142 comments, one third of which were provided by ENISS.



FORATOM considers that a continued exchange of information and experience on the discussions the Commission holds in the different Member States is crucial to enable all stakeholders to be prepared when discussing these issues with national authorities. FORATOM's dedicated task force and the legal expert group join efforts to address these issues. FORATOM will continue to discuss the evaluation of the submissions as they are published by the competent national authorities.

WENRA's approved revised Safety Reference Levels were presented on 24 September 2014 at a side event of the IAEA General Conference to celebrate WENRA 15 years of activities in the field of improving nuclear safety. The updated SRLs were then published on the WENRA website.

WENRA RHWG's work was also devoted to the preparation of guidance documents aiming at providing insights and explanations as to the purpose and intent of the revised SRLs. The guidance document on Design Extension Conditions was published on 3 November 2014 on the WENRA website. The main guidance document on Natural hazards was approved at the WENRA March 2015 plenary meeting and then published on 27 April 2015 on the WENRA website.

WENRA has also been developing three hazard specific guidance documents (seism, flooding and extreme weather conditions). ENISS has been consulted and was given the opportunity to provide comments. The three documents should be ready for adoption by WENRA by May 2016.

Cooperation with the IAEA

FORATOM's ENISS analysed and provided comments throughout the year on the IAEA's Draft Safety Requirements and Safety Guides, addressing important issues such as NPP design and operation, management systems, safety assessments, waste management, decommissioning and radiation protection. Some relevant IAEA Nuclear Security Series are likewise reviewed. ENISS also supplied comments on a number of IAEA TECDOCs. TECDOC publications do not establish international consensus-based requirements; however some TECDOCs are sufficiently important for consideration by ENISS. One illustrative example is the TECDOC on the application of the IAEA Safety Requirements for Design of NPPs (SSR-2/1). Following a suggestion by ENISS, the IAEA agreed in May 2015 to provide a list of TECDOCs being developed prior to each Safety Standards Committee meeting.

ENISS also contributed to the work of a number of the IAEA's technical and consultancy groups and participated, as an observer, in the Agency's Safety Standards Committees (SSCs) and the Nuclear Security Guidance Committee

Export Control

Following a Communication of the Commission published in April 2014 announcing a revision of the Dual Use Goods Regulation, a public consultation was launched by the European Commission's DG Trade which ended on 15 September 2015. The 2014 Communication contained several proposals that were welcomed by FORATOM, some of which can be potentially positive depending on the content and scope of the proposals and some

Horizon 2020 Research and Development Programme

The first Call for Proposals under the Euratom Fission & Radioprotection part of Horizon 2020 – the umbrella programme for EU funded R&D from 2014-2020 - closed in September 2014. In June 2015, FORATOM learned that of the 69 proposals submitted, 22 had been selected and granted a total of EUR 102 million of EU funding. The selected projects focus on the safety of reactor

(NSGC). The IAEA established in June 2015 a new Committee Emergency Preparedness and Response Standards Committee (EPreSC) under the Commission of Safety Standards. EPreSC will coordinate the review of safety standards in the area of emergency preparedness and response and will create a strong interface with security matters. ENISS has been invited to designate an expert to attend as observer the meetings of the new Safety Standard Committee. EPreSC's first meeting took place in December 2015.

ENISS also conducted a comparative study of the respective definitions of the technical terms in the IAEA Nuclear Safety and Nuclear Security Glossaries. ENISS was given the opportunity to share with the IAEA the findings of its detailed analysis of the glossaries. In its work, ENISS stressed the importance of a clear and consistent terminology in safety standards and nuclear security guidance, and highlighted the dangers of unnecessary differences in terminology. ENISS suggested improving consistency in terminology by developing a single IAEA glossary.

where the nuclear industry is in the process of assessing to what extent it would be affected.

FORATOM elaborated a common answer to the public consultation in September 2015 which forms the basis for discussion with the EU institutions. The ongoing process related to this public consultation will continue through 2016 and FORATOM will continue to monitor the issue.

systems, impact of low radiation doses, waste management, geological disposal, partitioning & transmutation, and human factors. In particular, one project named 'SPRINT' involves both FORATOM and the European Nuclear Society (ENS) as partners and will run for 4 years from 1 May 2015. It includes the provision of assistance with the coordination and dissemination activities

of the Sustainable Nuclear Energy Technology Platform (SNETP).

A second Euratom Call for Proposals was issued in October 2015 with a two-year budget of €105 million and a deadline for applications set in October 2016. The indicative budget breakdown for the Call allocates 40% to Reactor Systems, 20% to Radioprotection, 20% to Geological Disposal and 20% to Research Infrastructures, Training & Mobility and Cross-cutting Actions.

The Sustainable Nuclear Energy Technology Platform (SNETP)

The Sustainable Nuclear Energy Technology Platform was established in 2007 to coordinate nuclear fission research actions and to advise the EC on priorities for EU funding. Throughout 2015, FORATOM continued to participate in meetings of the Platform's Governing Board, Executive Committee and Secretariat. From 17-19 March 2015, SNETP organised three consecutive days of meetings in Brussels (the 'Nuclear Days') which included a meeting of the Governing Board, a General Assembly of the Platform and separate meetings of the NUGENIA, ESNII and NC2I pillars.

A milestone achievement for SNETP was the publication in December 2015 of an update of the Deployment Strategy document, the previous one having been issued in 2010. FORATOM participated extensively in the editing of this update as part of the editorial committee.

The EU's funding of the SNETP Secretariat activity ceased in May 2014. France's CEA, acting as SNETP Treasurer, issued invoices to the SNETP members in mid-2015 in order to collect fees to

fund the ongoing administration of the Platform. In October 2015, CEA issued a restricted tender invitation to two organisations willing to undertake the basic Secretariat function from January 2016 onwards; ENS was one of these two organisations. As at the end of 2015, news of the outcome of the tender was still awaited.

The European Chemicals Agency and the Issue of Borates

SNETP also contributed to the nuclear part of the SET-Plan Integrated Roadmap Communication 'Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation' issued by the European Commission on 15 September 2015. Nuclear is one of the ten key energy technologies being supported by the SET-Plan.

FORATOM also continued to interact with Horizon 2020 and SNETP through its R&D Task Force which met three times in 2015 under the chairmanship of Liisa Heikinheimo of TVO. Anna-Maria Wiberg of Vattenfall was elected Vice-chairman in January 2015.

The European Chemicals Agency and the Issue of Borates

to their chemical toxicity, thus targeting borates for eventual classification under the EU REACH legislation. Classification of borates would oblige each operator to apply in future for a time-limited authorisation, introducing an unwelcome element of uncertainty into the long-term availability of these essential chemicals.

The use of borate chemicals for controlling neutron reactivity is essential for guaranteeing the nuclear safety of light water reactors, spent fuel storage pools and certain radioactive waste management operations. A potential difficulty was drawn to FORATOM's attention in 2014 when it emerged that the European Chemicals Agency (ECHA) had recommended the inclusion of boric acid, and some other boron compounds, on a candidate list of 'substances of very high concern' owing

The FORATOM Secretariat set about compiling an information paper on the limited and safe use of borates for nuclear industry applications and

obtained the signatures of around 30 industry and associate members. The paper was used to inform relevant European Commission and Member State officials of the concerns of the industry and to campaign against the classification. In addition, FORATOM gave a presentation at a meeting of important stakeholders organised on 28 April 2015 by the French Permanent Representation to the EU. Subsequently, six Member States tabled a minority position against the classification of borates at a meeting of the ECHA Member States Committee on 11 June 2015.

In spite of this opposition, ECHA recommended on 1 July 2015 that the Commission should proceed to adopt a proposal for inclusion of borates in Annex XIV of REACH, even though it

Climate Change

An historic agreement to combat climate change and unleash actions and investment towards a low carbon, resilient and sustainable future was agreed by 195 nations in Paris on 12 December 2015. The Paris Agreement brought all nations into a common cause based on their historic, current and future responsibilities for the first time in history. The Agreement's main aim is to keep a global temperature rise this century well below 2 degrees Celsius and to drive efforts to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels. According to the latest scientific reports, global temperatures have already risen by almost one degree Celsius. To reach these ambitious and important goals, appropriate financial flows will be put in place, thus making stronger action by developing countries and the most vulnerable ones, in line with their own national objectives.

"The Paris Agreement allows each delegation and group of countries to go back home with their heads held high. Our collective effort is worth more than the sum of our individual effort. Our responsibility to history is immense" said Laurent Fabius, President of the COP 21 UN Climate change conference and French Foreign Minister. His emotion showing as delegates started to rise to their feet, Mr Fabius brought the final gavel down on the agreement to open and sustained acclamation across the plenary hall.

was recognised explicitly in the recommendation that this could present difficulties for the nuclear industry.

FORATOM also participated actively during 2015 in meetings of an 'industry coalition' advising the European Borates Association on its own lobbying campaign against classification, culminating in a joint meeting between the coalition and European Commission Directorates General 'Growth', 'Environment' and 'Energy' on 5 October 2015. Subsequently the Commission presented a written statement to the 21/22 October 2015 meeting of the REACH Member State Committee saying "the Commission services prefer not to include borates in Annex XIV for the time being". FORATOM continues to monitor the situation.

French President Francois Hollande was also present to congratulate the delegates: "You've done it, reached an ambitious agreement, a binding agreement, a universal agreement. Never will I be able to express more gratitude to a conference. You can be proud to stand before your children and grandchildren."

What Does the Agreement Mean?

The Paris Agreement and the outcomes of the UN climate conference (COP21) cover all the crucial areas identified as essential for a landmark conclusion. As well as setting a long-term direction, countries will peak their emissions as soon as possible and continue to submit national climate action plans that detail their future objectives to address climate change. This builds on the momentum of the unprecedented effort which has so far seen 188 countries contribute climate action plans to the new agreement, which will dramatically slow the pace of global greenhouse gas emissions. In fact, two contributions were submitted the day the Agreement was adopted.

According to the agreement, countries will have to submit updated climate plans – called nationally determined contributions (NDCs) – every five years, thereby steadily increasing their ambition in the long-term. In 2018, the Intergovernmental Panel on Climate Change (IPCC) will have to prepare a scientific report of the effects of a

temperature increase of 1.5 degrees Celsius and the best actions to tackle the effects of climate change. The NDCs will be reviewed every five years after that, therefore starting in 2023. The agreement also includes a compliance mechanism, overseen by a committee of experts that operates in a non-punitive way.

Climate action will also be taken forward in the period before 2020. Countries will continue to engage in a process on mitigation opportunities and will put added focus on adaptation opportunities. Additionally, they will work to define a clear roadmap on ratcheting up climate finance to USD 100 billion by 2020 per year. Governments decided that they will work to define a clear roadmap on climate finance while also setting a new goal on the provision of finance from the USD 100 billion floor by 2025. This is further underlined by the agreement's robust transparency and accounting system, which will provide clarity on countries' implementation efforts, with flexibility for countries' differing capabilities.

Civil Society Participation

The landmark Paris Agreement was reached against the backdrop of a remarkable groundswell of climate action by cities and regions, business and civil society. During the week of events under the Lima-to-Paris Action Agenda (LPAA) at the COP, the groundswell of action by these stakeholders successfully demonstrated the powerful and irreversible course of existing climate action.

Countries at COP 21 recognised the enormous importance of these initiatives, calling for the continuation and scaling up of these actions which are entered on the UN-hosted NAZCA portal as an essential part in the rapid implementation of the Paris Agreement.

- The LPAA and NAZCA have already captured climate actions and pledges covering:
- Over 7,000 cities, including the most vulnerable to climate change, from over 100 countries with a combined population of 1.25 billion people and around 32% of global GDP.

- Sub-national states and regions comprising one fifth of total global land area and combined GDP of USD 12.5 trillion.
- Over 5,000 companies from more than 90 countries that together represent the majority of global market capitalisation and over USD 38 trillion in revenue.
- Nearly 500 investors with total assets under management of over USD 25 trillion.

According to many analysts, these pledges have created a momentum for change which will continue to grow among business and civil society and is only re-enforced through a global agreement. "The Paris Agreement gives businesses and investors the policy certainty they crave and provides a vital foundation for a healthier, stronger and more prosperous economy. Companies, cities and governments are realizing that can do well, by doing good. From now, on, the smart money will no longer go into fossil fuels, but into cleaner energy, smarter cities, and more sustainable land use," said Felipe Calderon, former President of Mexico and Chair of the Global Commission on the Economy and Climate.

However, the agreement did not go without criticism. James Hansen, former NASA scientist and the person considered the 'father' of global awareness of climate change, spoke to the *Guardian* newspaper, saying: "It's a fraud really, a fake. It's just bullshit for them to say: 'We'll have a 2C warming target and then try to do a little better every five years.' It's just worthless words. There is no action, just promises. As long as fossil fuels appear to be the cheapest fuels out there, they will be continued to be burned."

Mr Hansen returned home from COP 21 and immediately called (yet again) for a price to be placed on each tonne of carbon dioxide which is emitted. He calls it a "fee" because "taxes scare people off". He says USD15 a tonne that would rise USD10 a year and bring in USD600bn in the US alone should do the job the Paris Agreement did not. There aren't many takers, even among "big green" NGOs as Hansen labels environment groups.



Nuclear for Climate

During COP21, the *Nuclear for Climate* initiative was present in both the Gallery of Solutions and the so-called Blue Zone, where negotiations took place. The booth at the Gallery organised several events with nuclear experts and pro-nuclear environmentalists to show how nuclear energy is part of the solution to fighting climate change. Robert Stone, Director of the film *Pandora's Promise*, was joined by Stephen Tindale, Director of the *Alvin Weinberg Foundation*, a pro-advanced nuclear charity, Kirsty Gogan from *Energy for Humanity* among others. A session was also held to promote the book *Climate Gamble* with both authors Rauli Partanen and Janne M. Korhonen presenting the thesis of their book.

At the Blue Zone, the *Nuclear for Climate* booth saw numerous representatives from civil society organisations, national and business

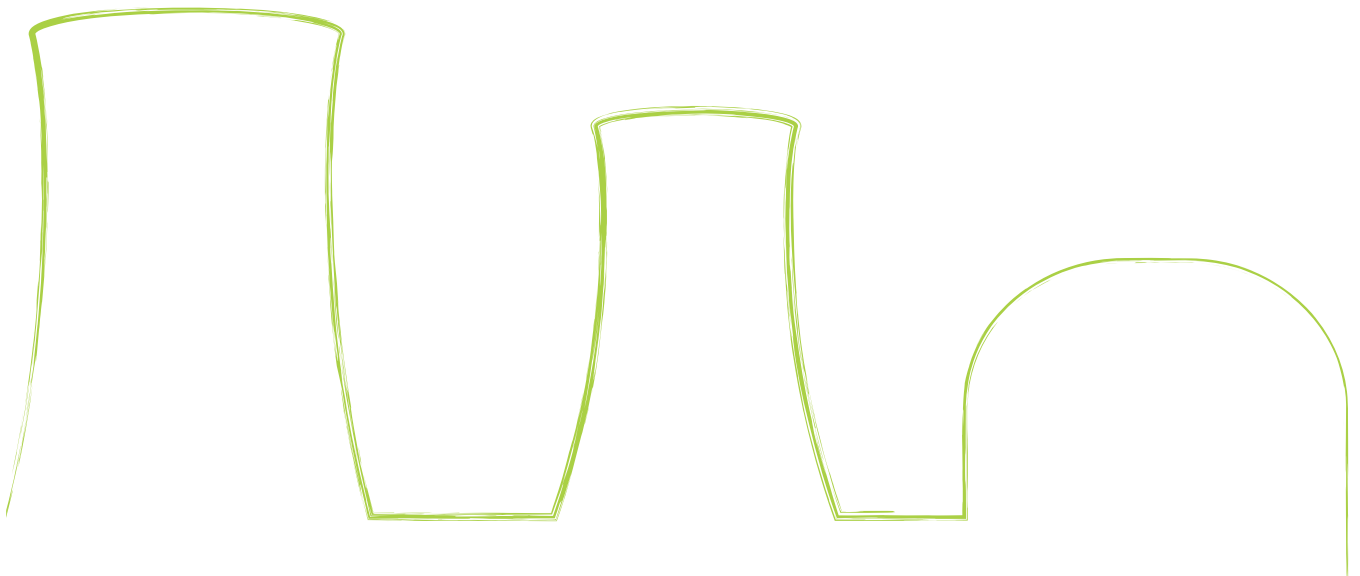
delegates and other participants stop and talk to the representatives who were present. Also present in the Blue Zone were two international organisations on nuclear energy: the International Atomic Energy Agency and the OECD Nuclear Energy Agency (OECD/NEA). They organised three side-events during COP21 focusing on the need to adapt energy infrastructure to the effects of climate change, especially related to the large requirement for cooling water for nuclear power plants. The presentations also included scientific studies showing the importance of nuclear energy for tackling climate change and reducing greenhouse gas emissions.

The *Nuclear for Climate* initiative is also proud to have been voted as the winner of the 2016 Award for Communications Excellence at the Public Information Materials Exchange (PIME) conference. The initiative will continue its communications activities in preparation for COP22 which will take place in Marrakech, Morocco, from 7 to 18 November 2016.





FORATOM EVENTS



Throughout 2015, FORATOM organised and attended numerous events in Brussels and abroad in order to make the voice of the European nuclear industry heard at the EU and Member State levels. In this section, you will find a selection of the most important events organised by FORATOM.

Workshop on Germany's Energiewende

In June 2015, FORATOM organised a workshop entitled *Energiewende: the new panacea?* with guest speaker Dr Marco Streit from the Swiss Nuclear Society. The presentation focused on the liberalisation of the electricity market, its characteristics and challenges. It also addressed the integration of renewable energy sources and the changes this would bring to the energy market.

Dr Streit focused on Germany as the example of a country with a policy of phasing out nuclear power and integrating renewable energy sources on a large scale. He presented the type of transmission grid system which is being developed in Germany and the larger project of integrating Europe's transmission grid for the Energy Union project. The costs related to developing new transmission lines are a constant hurdle which has to be overcome if the increasing demand for electricity and the new production methods using renewables are to be accommodated on the market.

The presentation also focused on the current energy market design in Europe with the

13 different power markets and the need to integrate them. Dr Streit's presentation went on to show how power prices are calculated, what is needed for a power plant to be profitable and why the current energy system does not facilitate investment in production technology.

«We were all enthusiastic, but now we realize what is actually an Energiewende»

The whole thing was not the «result of a clever strategy»

Peter Altmaier, German Federal Minister of Environment 2012

The workshop concluded that a new energy market design is definitely necessary to accommodate transitions such as the Energiewende. In its current form, the German transition to a low carbon power production model is heavily distorted and is causing problems on the market which are affecting both individual and industrial consumers.

Workshop on the Iran Nuclear Deal

FORATOM organised a workshop on the Iran agreement on 15 December 2015 with guest speaker Mark Hibbs, Senior Associate at the Carnegie Endowment for International Peace. Mr Hibbs explained that the Iran deal goes quite far in establishing an understanding with the Middle Eastern country on its nuclear program for between 10 and 15 years. It includes the following components:

- A reduction in the number of centrifuges by 2/3 for a 10 year period and a limit on enrichment to 3.67 % for 15 years;
- Reduction of Iran's low-enriched uranium

inventory from 10,000 kilograms to 300 kilograms;

- Extension of breakout time from 2 to 12 months;
- No new centrifuge deployment for 15 years, limitations on R&D for 10 years;
- Fordo facility suspended for 15 years;
- Redesign and reconstruction of the Arak reactor and removal of irradiated fuel to effectively prevent the plutonium path to weapons.

Mr Hibbs explained that Iran is a non-nuclear weapon state party to the Nuclear Non-

proliferation Treaty and, consequently, it has a so-called safeguards agreement with the IAEA. That agreement commits Iran to declare all its nuclear material and activities to the IAEA. The IAEA is required to verify that Iran's declarations are correct and complete. In doing so, it is also required to protect the confidentiality of Iran's data about its nuclear programme.

The IAEA has safeguards agreements with 180 countries. All have similar information protection provisions. Without these, governments would not open their nuclear programs for multilateral oversight. So, IAEA Director General Yukiya Amano was acting by the book on 5 August when he told members of the US Congress that he couldn't share with them the details of a verification protocol the IAEA had negotiated with Iran as part of a bilateral "roadmap" to address unresolved allegations about Iran's nuclear behaviour.

Like Iran, the United States has a safeguards agreement with the IAEA. Were lawmakers from Iran's Majlis to ask the IAEA to see documents concerning its negotiations with the United States, members of Congress would presumably be pleased to hear that Amano's answer would also be no. Of course, Iran may choose to share its information with other parties and, in this

case, Iran provided details of the roadmap to negotiators from the US Department of State. Congress may not be happy that it is not in the loop, but it is not up to the IAEA to decide whether to share information about where and how its personnel do their work in Iran.

According to Mr Hibbs, the success of the Iran agreement will depend utterly on the detailed provisions of the agreement. The reason is that mutual suspicion between the Western countries and Iran has persisted for many years, beyond nuclear issues and over a far longer historical timeframe, especially between Iran and the United States. Given this background, it was imperative that the comprehensive agreement strictly and precisely define the obligations critical to implementation and fulfilment, and also the consequences for each type of infringement or lack of implementation.

Although FORATOM does not concern itself with the military uses of nuclear technology, the Iran nuclear deal has an impact on the civilian nuclear power market in Iran. This will influence future relationships between the EU and its Member States and Iran, especially since European nuclear technology and expertise could be exported to the Middle Eastern country in the future.

IAEA/FORATOM Management Systems Workshop

On 22-26 June, the 13th joint IAEA-FORATOM Management Systems Workshop took place in the EDF Energy premises, Barnwood, UK. Almost 100 delegates from 17 countries exchanged their experiences on management systems activities. On the first day, Keith Parker, President of FORATOM, Pal Vincze from the IAEA and Brian Cowell, EDF Energy, welcomed the Workshop delegates and underlined how important safety is in a challenging environment like nuclear. The workshop then kicked off with a session organised by the IAEA where the participants were able to contribute to the discussion on the draft General Safety Requirements (GSR) Part 2.

After the traditional plenary sessions, over the following three days the delegates could present their management systems examples and discuss

different obstacles in interactive working groups dedicated to subjects like nuclear leadership, risk management and safety culture. On the last day, the participants had the opportunity to visit Hinkley Point B and C visitors' centre. The 14th Workshop will take place in December 2016 in Vienna at the IAEA headquarters.

Radiological Protection

The International Commission on Radiological Protection (ICRP) was founded in 1928 by a congress of radiologists. ICRP is the highest scientific body for issuing radiation protection recommendations. ICRP has developed dose limits and since 1977 a comprehensive system of radiation protection, based on three principles: justification, optimization (or ALARA) and limitation (dose limits). ENISS has been invited in January 2013 to become an ICRP Special Liaison Organisation.

FORATOM's ENISS division participated in the 3rd Symposium of ICRP which took place on October 20-22, 2015 in Seoul, Korea. The symposium was preceded by the third meeting of Senior Representatives of Organisations in Formal Relations with ICRP. The primary purpose of this meeting was to explore areas for constructive collaboration. Each organisation had been invited to prepare a short report presenting relevant activities and identifying topics of common interest and potential cooperation between both ICRP and participating organisations.

European Nuclear Safety Regulators

ENISS actively participated in a number of conferences organised at national and European level. The participation in these conferences provided ENISS with an excellent opportunity to raise awareness about ENISS activities and to brief people about the various harmonisation

initiatives that have been taken in the area of nuclear safety.

For instance, ENISS has been invited to speak at the ENSREG Nuclear Safety Conference that took place in Brussels from 29-30 June 2015.

Communications

In March 2015, the Slovakian capital city of Bratislava played host to PIME 2015, the ENS flagship conference for nuclear communicators co-organised with FORATOM. Around 100 communicators from across the world, including China, Japan, South Africa, Canada, the US and Russia, gathered in Bratislava to discuss the burning communications issues of the day, to share experiences - successes and failures, and to identify new solutions to the many challenges that communicators face today. The conference focused on the subjects of how to tailor messages to specific target groups, how to use videos efficiently, what is the impact of the political and economic situation on nuclear communications etc. Delegates also had the opportunity to learn from other sectors, organ donation and space exploration with the ROSETTA mission. The PIME 2015 Award for Communications Excellence was awarded to Slovenske Elektrarne for their new state-of-the-art visitor centre, called Energoland.

2015 on the topic of crisis communications. The event was run by a consultant, who tailored the workshop to meet the specific needs and challenges of the nuclear industry. Participants focused on case studies from three different perspectives: an operator, a research centre and industry associations and had the opportunity to Learn from other industries. The Workshop resulted in a deliverable, a booklet drawing a list of crisis communications guidelines that nuclear communicators could take home.

Furthermore, FORATOM's Communications Task Force (CTF) organized a workshop on 26 June

Global presence

In 2015, FORATOM was actively involved in a global initiative called *Nuclear for Climate*, which brings together 140 nuclear associations and societies from all across the world. FORATOM took part in COP21 in December 2015 in Paris and was present at the *Nuclear for Climate* booth in Le Bourget. During the climate talks, FORATOM's Director General also participated in debates organised by the initiative and was interviewed by a number of journalists from the international press.

Throughout the year FORATOM also interacted with major global organisations and intergovernmental bodies, like the IAEA, the OECD's Nuclear Energy Agency (NEA), the World Nuclear Association (WNA), the International Energy Agency (IEA) and WANO. The statistical analysis, advice and recommendations that these organisations provide in publications like the *World Energy*

Outlook (IEA), *Projected costs of generating electricity* and *Technology Roadmap: Nuclear Energy* (NEA, IEA) have great credibility due to the acknowledged expertise and objectivity of these organisations.

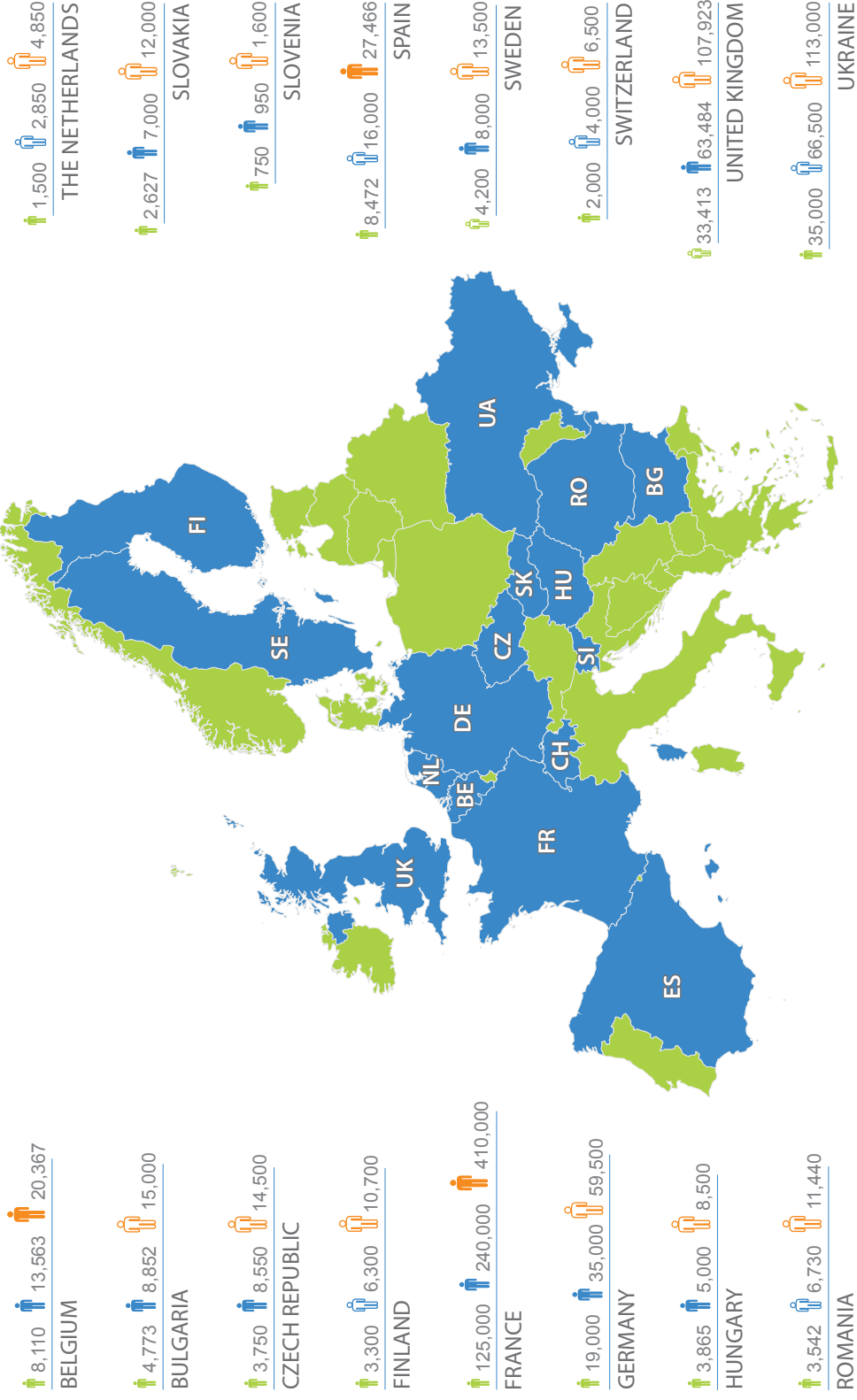
The publications provide an invaluable resource for nurturing the international energy debate. FORATOM analysed and communicated the information from the aforementioned publications to its members, and to the general public, at every possible opportunity. As mentioned before, experts from these organisations participated in some of the workshops and events that FORATOM organised in 2015.

Positive contacts were also maintained with interest groups, think-tanks, trade associations and independent experts from outside of the EU, each of whom brought specialized knowledge and a different perspective to the debating table.



EUROPE-WIDE JOBS MAP

Civil nuclear industry supports 780,000 jobs in Europe



EUROPE



The figures only include the number of jobs in countries that operate nuclear reactors.

Direct jobs Estimates

Direct and indirect jobs Estimates

Direct, indirect and induced jobs Estimates

Direct jobs

Jobs that are directly created by the nuclear sector: people working for nuclear operators, utilities, specialized nuclear services suppliers, specialized administrative services etc.

Indirect jobs

The nuclear sector buys goods and services from external producers, which results in the creation of additional jobs.

Induced jobs

Direct and indirect employees consume goods and services, which results in the creation of additional jobs.

Source: PricewaterhouseCoopers

Disclaimer: The figures indicated on the jobs map were provided by FORATOM members. This map is designed to give an overview of the number of jobs in and supported by the European civil nuclear industry, which encompasses a diverse and wide range of companies and activities. The estimates are based on the multiplication factors used by PwC in its study entitled "Le poids socio-économique de l'électronucléaire en France, 2011."



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