

ANNUAL REPORT 2016

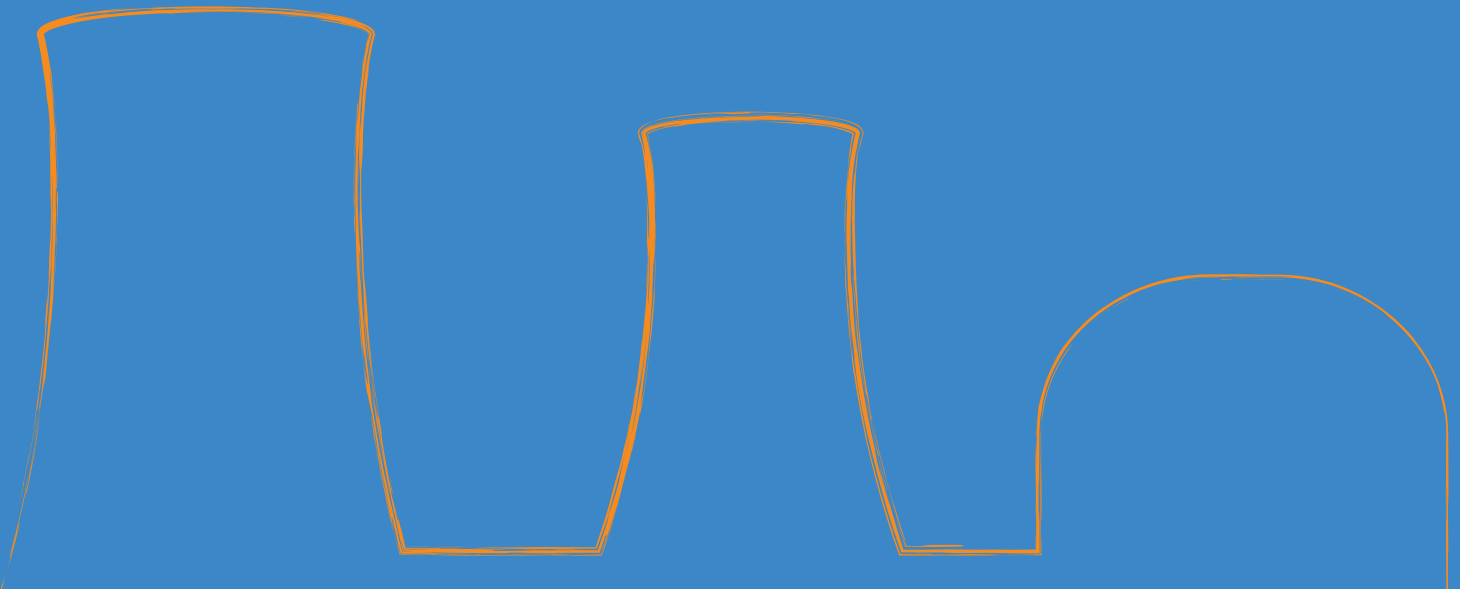


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VIEW FROM THE BRIDGE

Progress, Optimism and Opportunity for Nuclear Energy, Despite Political Uncertainty

The nuclear industry was not spared from political uncertainty in Europe and further afield in 2016. The Brexit vote in the UK, followed by a change of Prime Minister, and a polarising election in the United States, all contributed to a period of reassessment and reflection.

In September 2016, UK Prime Minister Theresa May, who was appointed as Britain's PM after the Brexit vote, gave the green light to EDF's €21bn project to build two EPR units at Hinkley Point C (HPC) in Somerset, England. The government's decision had been preceded by a thorough review of the HPC project.

This decision sends a positive signal for future nuclear investments across Europe. As acknowledged by the European Commission, the current EU Single Electricity Market fails to provide a sufficient market signal to investors in low-carbon energies. The 'contract for difference' (CFD) investment model that underpins the HPC deal provides effective market mechanisms that address this failure. FORATOM urge the EC to propose a New Energy Market Design which would facilitate investments in all low-carbon sources, renewables and nuclear in order to shape Europe's low-carbon economy.

Significant progress has also been made at Hanhikivi-1 in Finland and at Flamanville 3 in France with other European governments – Hungary, Bulgaria, Poland and Romania – considering new build projects, and many others looking at lifetime operating extensions for key nuclear plants, Finland, France and the UK have shown the way forward.

Brexit gave rise to a significant degree of uncertainty and will continue to do so. The UK has been one of the main advocates of nuclear at the European Council's Atomic Questions Group, which addresses issues including the safety of nuclear facilities and the management of spent fuel and radioactive waste.

Brexit might also bring opportunities, as it could lead to a major review and overhaul of EU institutions that could benefit the nuclear industry.

A comprehensive nuclear agreement between the UK and the Euratom community will be needed to ensure that the benefits of the Euratom Treaty will be sustained after the departure from Euratom and to maintain Europe's position as a global leader in nuclear.

Beyond the final approval for Hinkley Point C, 2016 was in general a year of significant accomplishment for the nuclear industry and one which gives us much cause for optimism in 2017.

The European Commission put nuclear energy firmly in the spotlight with the publication of its Illustrative Programme for Nuclear Energy (PINC). The PINC said that the investment in new nuclear stations needed to replace most of the existing nuclear reactors in order to maintain a stable nuclear generation capacity over the next 35 years will amount to between €350bn and €450bn. About 90 percent of existing nuclear capacity will need to be replaced by 2050. The document said the EU nuclear landscape had undergone significant changes including comprehensive risk and safety assessments – known as stress tests – culminating with the adoption of landmark legislation on nuclear safety, radioactive waste and spent fuel management and radiation protection. Nuclear should be promoted by the EC as part of the low carbon technology mix which will help in solving climate change problems. This would send positive signals to the long-term investors in the nuclear industry.

The European nuclear industry welcomed in 2016 the EC's initiative to revise communication requirements under Article 41 of the Euratom Treaty. These requirements provide that nuclear investments above a certain threshold must be communicated to the EC. We believe there is room for improvement in the way the communication process works. One of the main objectives of the Euratom Treaty is to facilitate nuclear investments in the EU.

We took note of a package of legislative documents published on 30 November by the EC under the title Clean Energy for All Europeans. The package, known as the Winter Package, included proposals on renewables, electricity market design, energy efficiency, governance and innovation. In FORATOM's opinion, this package should aim to improve the functioning of the energy market and make sure that all energy technologies compete on a level-playing field "without jeopardising climate and energy targets". The nuclear industry recalls that the goal of the EU to decarbonise the economy by more than 80% cannot be achieved without nuclear power. We therefore continue to urge European institutions to create an EU framework enabling and incentivising long-term, capital intensive low-carbon investments.

The nuclear industry welcomed the outcome of a vote in the European Parliament's Committee on Environment, Public Health and Food Safety in December to revise the Directive on the EU Emissions Trading Scheme (ETS). This vote put the EU on track, but more must be done if confidence is to be restored in the ETS. FORATOM believes ETS reforms should be more ambitious than the EC proposals. The ETS can help decarbonise the European economy at an affordable cost and should be a cornerstone of the EU's policy to combat climate change. However, the price of carbon needs to be much higher than it is currently if investments in low-carbon electricity production are to be incentivised.

The threat of terrorism was raised in 2016 and countries with nuclear facilities have instituted effective measures to prevent the theft, sabotage, or illegal transfer of nuclear or other radioactive material, and security at many nuclear facilities has been improved. The industry will remain vigilant.

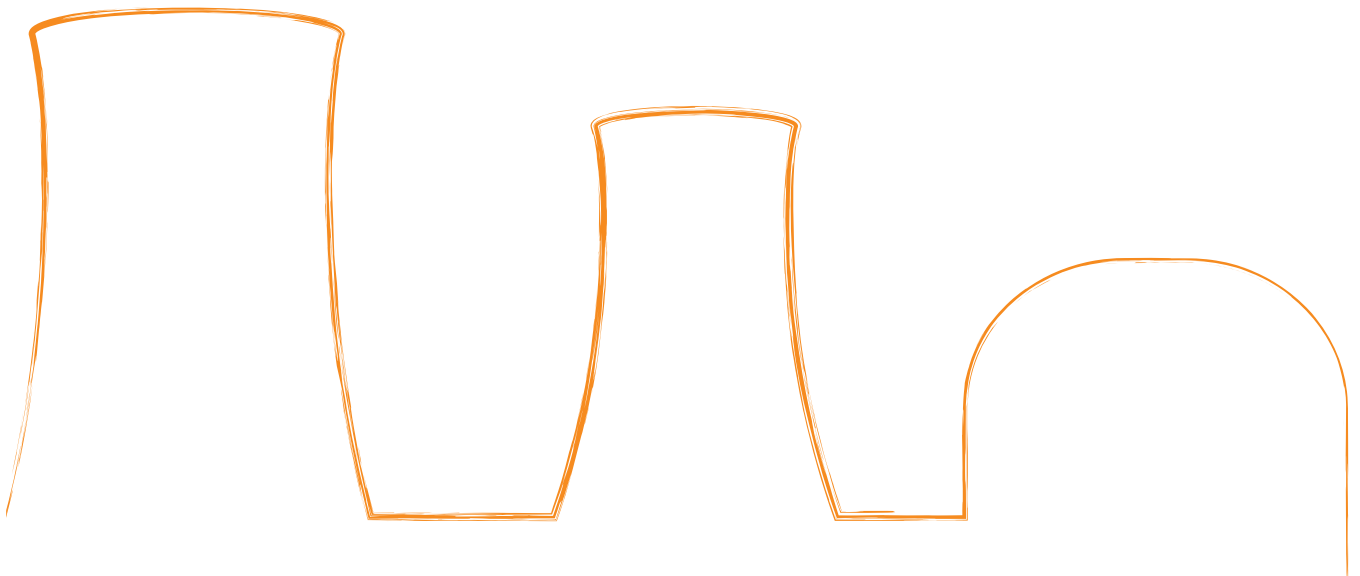
Despite upheavals, 2016 was a year of achievement. We must not lose sight of the fact that a strong and viable nuclear industry can contribute to the EU energy policy and to jobs, growth, investment and competitiveness – whilst contributing to energy security and building a low-carbon economy. Further investments are expected in the nuclear industry in the EU to update existing facilities, as well as for decommissioning shut down facilities and managing spent fuel and radioactive waste. With new build underway in Finland, France and the UK, there is a path to follow for other countries considering new nuclear plants and for the upcoming renewal of the European fleet.



Bertrand de L'Épinois
President



THE VOICE OF THE EUROPEAN NUCLEAR INDUSTRY



Who we are

FORATOM is the Brussels-based trade association for the nuclear 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 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 representation is crucial to FORATOM maintaining its status as a constructive and proactive dialogue partner for EU policy-makers.

Networking, lobbying

After the 2014 European Union elections, 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 and 2016 managed to forge new, stronger relationships with the institutions in order to continue achieving its purpose. Adapting to the

new organisational set-up meant monitoring new initiatives and participating in innovative dialogue. 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

FORATOM provides information and expertise on the role of nuclear energy; we produce position papers, newsfeeds, infographics, responses to public consultations and analyses of public opinion. We organise regular networking events such as dinner debates, workshops, one-to-one meetings, press briefings and visits to nuclear facilities.

FORATOM has maintained the voice of the nuclear industry within the corridors of the European Parliament with numerous events held in cooperation with MEPs. This means we can make sure key industry issues are heard and taken into account, especially regarding the Energy Union. FORATOM aimed its activities at the new generation of MEPs that came into office in 2015 to tell them about the benefits of nuclear energy. We 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.

Our Members

The membership of FORATOM is made up of 15 national nuclear associations active across Europe and the companies that they represent, and two utilities, the Polish nuclear company, PGE, and the Czech energy company, CEZ. Nearly 800 firms are represented, from Europe's (and the world's) largest nuclear utilities and nuclear fuel cycle companies to 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

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Jean-Pol Poncelet
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Witold Strzelecki
Communications
Manager



Aude Van Hille
Administrative Assistant

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AREAS OF
EXPERTISE



Communicating

In 2016, 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: press relations and social media. The relationship with the general EU press remained essential and new contacts were established with media outlets based both in Brussels and throughout Europe. Furthermore, a new, wider range of media outlets, both general and specialised, were introduced to the benefits of nuclear energy in Europe and were added to FORATOM's permanent correspondents list. With further actions taken during a press briefing in February entitled "Nuclear energy: back to the future" at the Press Club Brussels, FORATOM has been confirmed as the reference point for EU journalists when they need an opinion, a comment or more information regarding the civil nuclear sector.

The social media arena is crucial for conveying FORATOM's 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 totalled over 3,350 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 news and information. Twitter is the most widely used social media platform by associations in Europe. 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 about 1,500 times during 2016, and in total these tweets were viewed over 2 million times by Twitter users.

In March and April FORATOM carried out its first social media campaign using a dedicated

hashtag #DidYouKnow in order to counterbalance negative buzz following the anniversaries of the Fukushima and Chernobyl accidents. FORATOM's messages enhanced nuclear power's credentials in Europe in terms of security of supply, climate change mitigation and economic growth.

The campaign achieved great results with 241,000 impressions earned in March and 209,000 in April.

The second campaign was in November to urge EU decision-makers to take nuclear power into account in the so-called "Winter Package" published by the European Commission on 30 November. For the first time FORATOM used Twitter advertisements to promote its key messages.

FORATOM's Facebook page gained around 200 "fans" and reached a total of 740 fans in 2016. On average 300 to 400 people see FORATOM's Facebook posts every week. The number of followers of FORATOM's LinkedIn page also increased in 2016, reaching over 1,250 followers, most from the energy sector. FORATOM used LinkedIn to promote its publications and events, and to increase its visibility. Each FORATOM's 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 8 videos on its YouTube channel in 2016. They included the FORATOM Director General's statements on the new Energy Market Design and a number of interviews: Government Commissioner Dr Attilia Aszodi on Paks II in Hungary; Graham Weale, Professor of Energy Economics and Politics at Ruhr University, on the Clean Energy Package; and Jan-Horst Keppler, Chief Economist at the OECD's Nuclear Energy Agency, on the new Energy Electricity Market Design. They all start with a short 10-second animation, which summarises visually what FORATOM does.

The Nuclear for Climate campaign increased FORATOM's visibility on social media. Ahead of

the COP22 climate talks in Marrakech, Nuclear for Climate organised several intensive social media campaigns aimed at decision-makers and the general public. The tweets and Facebook posts resulted in increased visibility for FORATOM on social media.

This heightened social media activity brought FORATOM closer to the views, concerns and aspirations of stakeholders interested in EU energy policy in general, and nuclear in particular. By keeping abreast of evolving social communications, FORATOM remained in touch with its target audiences and with developing news.

The traditional media in Brussels increasingly uses social media, especially Twitter, as a source of information and as a forum for discussion with the nuclear industry. In 2016, the number of journalists that regularly engaged with FORATOM via social media increased. The posting of FORATOM's newsfeeds, position papers and YouTube video clips on Twitter encouraged this. Press interviews with senior FORATOM management and record attendance at FORATOM

events gave the European nuclear industry greater visibility than in the past.

The redesign of FORATOM's website, with its sustained emphasis on accessibility, modernity and visual simplicity, was the catalyst for a number of communications initiatives. Re-designed publications, a reinforced graphic identity and the creation of a new generation of FORATOM infographics (on the European nuclear industry, competitiveness of nuclear energy, security of supply, nuclear and climate change, nuclear industry waste and nuclear and health) helped convey the facts and debunk the myths about nuclear in a visually appealing way.

As a result of these innovations, coupled with an increasingly effective presence in the key arena of social media, FORATOM's communications output allowed 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.

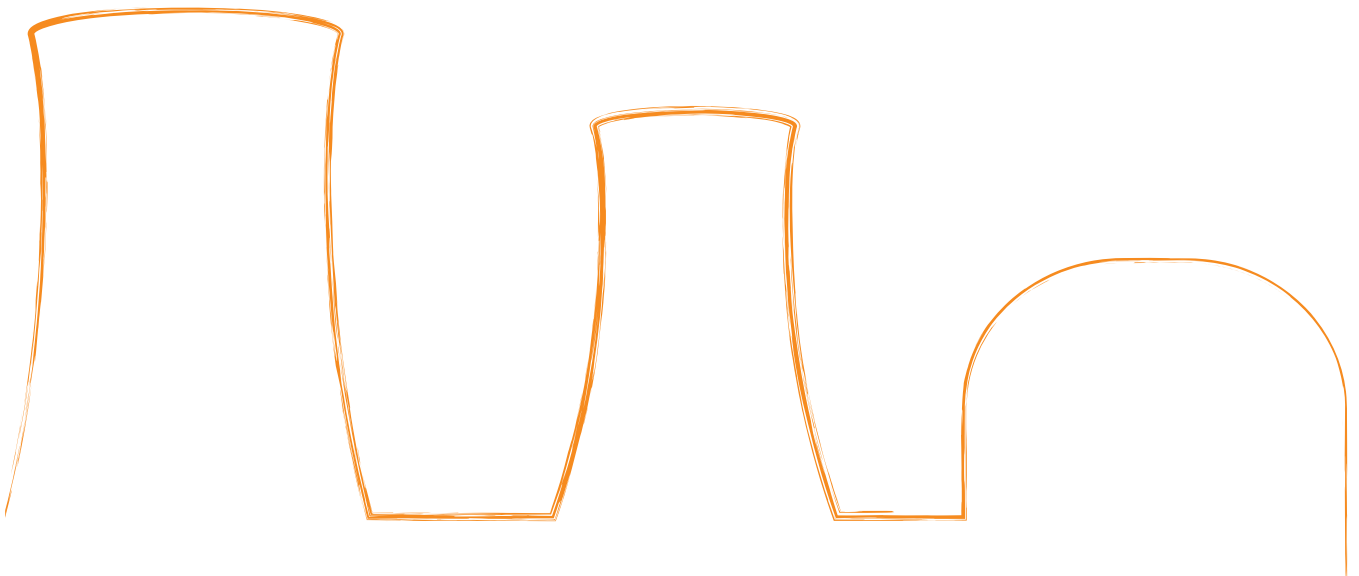


Nuclear generates almost half of Europe's
low-carbon electricity

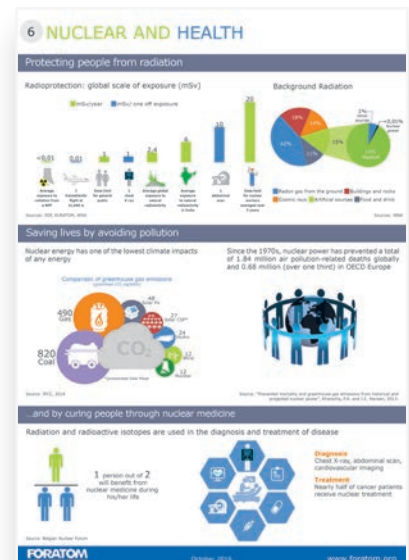
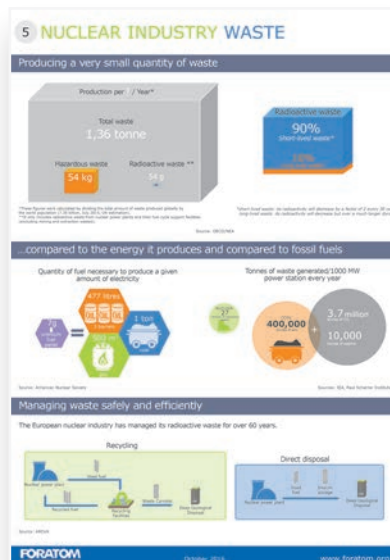
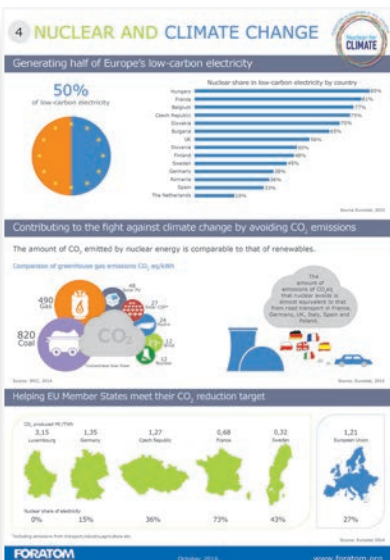
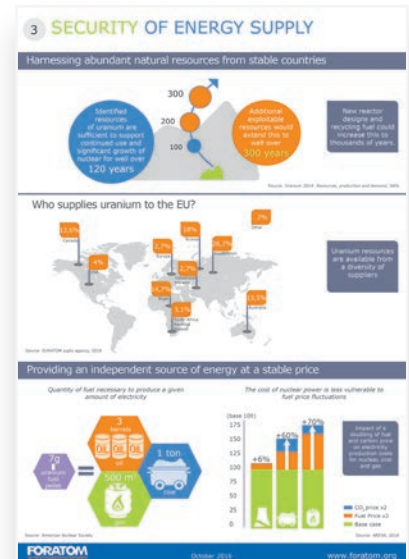
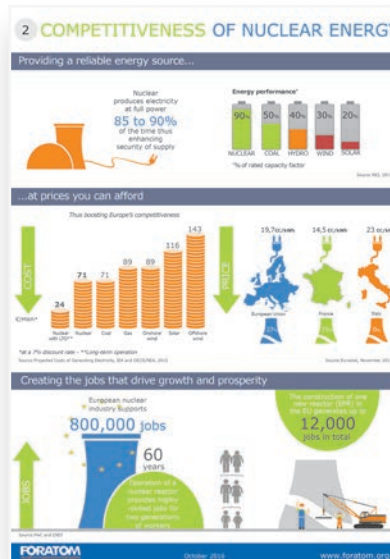
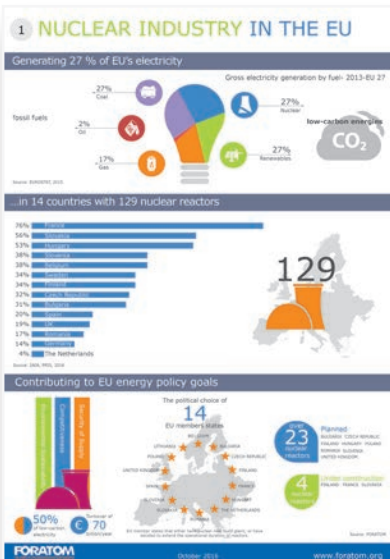


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FACTS & FIGURES



FORATOM infographics highlight nuclear power's benefits in Europe in terms of key issues such as climate change mitigation, economics, security of supply and competitiveness. They provide the facts about nuclear energy in Europe in a concise and visually appealing way.

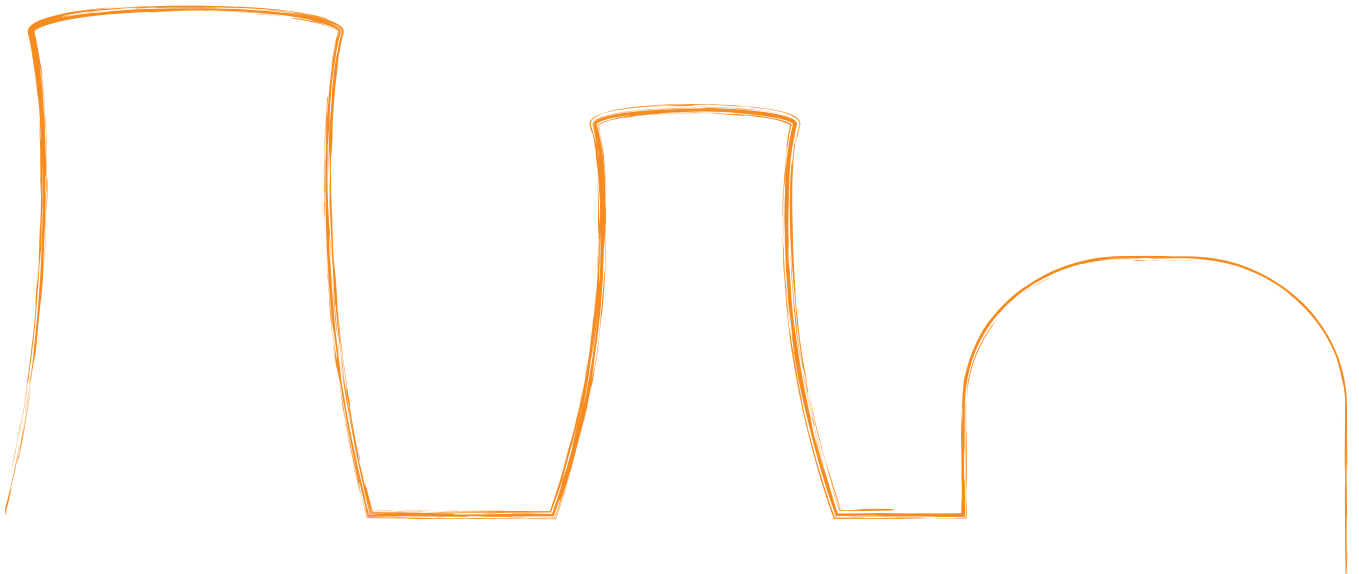


Clean energy for all Europeans



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THE POLICY AGENDA



Energy Union

After the announcement 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 in February 2015. FORATOM has been following 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 Energy Union strategy comprises five elements considered to offer a 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.

In order to take stock of progress towards building the Energy Union, and to highlight issues where further attention is needed, the Commission is reporting periodically on the State of the Energy Union. The first State of the Energy Union report was released in November 2015 and was based on feedback from Member States collected during a tour by EC Vice-President Maroš Šefčovič, who is in charge of the Energy Union portfolio.

The "Clean Energy for all Europeans" legislative package

On 30 November 2016, the European Commission presented the bulk of its Energy Union legislative proposals in the form of the "Clean Energy for All Europeans" package. The package pursues three main goals: putting energy efficiency first, cementing the EU's global leadership in renewable energies and providing a fair deal for energy consumers. It contains the following legislative proposals:

- A proposal for a regulation on the Governance of the Energy Union;
- Proposals relating to the electricity market;
- A proposal for a revised energy efficiency directive;
- A proposal for a revised energy performance of buildings directive;
- A proposal for a revised renewable energy directive.

According to the Commission, these proposals are

an important part of the EU's efforts to lead the world's clean energy transition. For this reason the EU is committing to ambitious targets by 2030:

- At least a 40% cut in greenhouse gas emissions (from 1990 levels);
- At least a 27% share for renewable energy;
- At least a 30% improvement in energy efficiency.

As a reminder, for 2020, all three targets were fixed at 20%.

FORATOM began its work on these proposals at the end of 2016 and will focus on governance, the electricity market and energy efficiency – the three areas of most relevance to the nuclear industry. A FORATOM Position Paper is being prepared within the Policy Framework Task Force and will be published in 2017.

Energy Union Governance

The legislative proposal for reliable and transparent Governance of the Energy Union has aims to help the EU to meet its climate and energy policy goals up to 2030 and beyond. The proposal has been developed alongside other legislative proposals in the “Clean Energy for all Europeans” package. The proposed Governance regime is expected to ensure policy coherence, investment certainty, improved coordination between Member States and reduced administrative burden. The proposal also builds on and integrates existing requirements for planning, reporting and monitoring in the energy and climate fields. Together with the other initiatives in the package, this should ensure EU households and businesses have access to secure, sustainable, competitive and affordable energy.

New Energy Market Design

In response to a European Commission Communication of 15 July 2015 entitled “Launching the public consultation process on a new energy market design”, the European Parliament’s Industry, Research and Energy (ITRE) Committee issued its own initiative report “Towards a New Energy Market Design” with Werner Langen MEP (EPP, Germany) as rapporteur. During discussions in ITRE, almost 600 amendments were tabled, including some proposed by FORATOM. The final ITRE vote took place on 14 June 2016. The revised text was discussed on 13 September 2016 in the EP Plenary, followed by a Plenary vote on 14 September 2016. The report was adopted with 454 votes for, 188 against and 61 abstentions. The adopted text of the report included Article 47 which calls on the Commission “... to submit proposals to allow instruments to mitigate the revenue risk over 20 to 30 years, so that investments in new low-carbon generation are actually driven by the market, such as co-investments with contractual sharing of risks between large consumers and electricity producers, or a market for long-term contracts based on average cost pricing”.

In the market design area, the EC’s Clean Energy Package (CEP) contained the following electricity market proposals:

The proposed legislation sets out the requirements for integrated national energy and climate plans and a streamlined and inclusive process to establish them. Stable national energy and climate plans up to 2030 should provide regulatory stability for investment certainty and transparency of national efforts.

By reducing and integrating a number of existing planning, reporting and monitoring obligations, the proposal will significantly reduce the administrative burden for Member States, the European Commission and other EU institutions. However, Member States will have significant flexibility to take account of specific national circumstances and preferences.

- A regulation on the internal market for electricity;
- A directive on common rules for the internal market in electricity;
- A regulation on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC;
- A regulation on establishing a European Union ACER (European Agency for the Cooperation of Energy Regulators).

These proposals were accompanied by several staff working documents.

FORATOM has been analysing the legislative proposals related to the electricity market and is proposing that the EC should take stronger action to improve market effectiveness and provide long-term price signals for better implementation of the measures necessary to reach climate change targets, in particular to encourage investment in low-carbon electricity production in a cost-effective and technologically neutral way.

As is the case with all CEP legislative proposals, the next step belongs to the EP and the Council, as part of the co-decision process. For both the regulation and directive on the electricity market, the rapporteur will be MEP Krišjānis Kariņš (EPP, Latvia), a former Latvian Minister for Economics.

Energy Efficiency

With regard to the CEP proposal to revise the Energy Efficiency Directive, FORATOM has highlighted the point that EU ETS should be considered the main mechanism for reducing carbon emissions in a cost-efficient manner, and that other EU policies, including the Energy Efficiency Directive, should not be allowed to undermine the effectiveness of ETS.

In the proposed revision, when it comes to calculating primary energy equivalence, nuclear power plants are assumed to generate electricity with 33% efficiency (PEF¹=3) whereas renewables are assumed to be 100% efficient. This has the bizarre effect of making it appear advantageous

to reduce nuclear capacity in order to achieve primary energy savings, whereas the goal of reducing GHG emissions would be better served by reducing fossil fuel capacity. FORATOM's Director General sent a letter in November 2016 to both Energy & Climate Commissioner Arias Cañete and DG Energy Director General Dominique Ristori pointing out this anomaly and suggesting that a direct equivalent of 100% for the conversion of uranium into nuclear electricity (PEF=1) would make more sense. FORATOM will raise this point in discussions with the European Parliament and Council.

¹Primary Energy Factor

The Illustrative Programme on Nuclear Energy (PINC)

On 4 April 2016, the EC published a draft Illustrative Programme on Nuclear Energy, known as PINC. As required by Article 40 of the Euratom Treaty, the EC has to periodically issue a PINC to indicate targets for nuclear production and the investments needed to attain them. The last PINC was published in 2007 and updated in 2008. The new draft PINC concluded that nuclear energy is expected to remain an important component of the EU's energy mix on the 2050 horizon "as a low-carbon technology and a significant contributor to security of supply and diversification".

FORATOM shared the EC's view that "the EU must maintain its technological leadership in the nuclear domain so as not to increase energy and technology dependence, and to give business opportunities for European companies. This will in turn support EU growth, jobs and competitiveness". However, the EC's outlook that nuclear capacity in the EU will decrease to around 100 GWe by 2050, from 120 GWe today, did not seem consistent with the above conclusion; if the share of nuclear electricity were to decline, the challenges of meeting the EU's climate and security of supply goals would become much tougher. In comparison, the International Energy Agency (IEA) and the OECD Nuclear Energy Agency (NEA), in their Technology Roadmap 2015, said global nuclear capacity needs to more

than double by 2050 if the 2 degrees Celsius global warming ceiling is to be met.

In addition, FORATOM regretted that the PINC contained no ambitious nuclear energy production targets. FORATOM noted the PINC's conclusion that "significant investments are needed" for reactor lifetime extensions and the construction of new nuclear reactors across Europe. The PINC should have addressed market failures hampering these investments from taking place. These failures affect the profitability of existing nuclear plants and the construction of new ones. FORATOM was expecting the EC to take a leadership position and propose concrete solutions to facilitate investments in nuclear alongside other low-carbon technologies. Furthermore, better coordination of national licensing authorities and standardisation across the EU would reduce the barriers to deployment of nuclear technologies and enable nuclear vendors and supply chain companies to compete more effectively in the international market. The EC rightly recognised that the process for licensing nuclear technology, which is an exclusive competence of national regulatory bodies, serves as an "opportunity for enhanced cooperation". The nuclear industry is in favour of acceleration of these efforts whilst insisting on the need to also improve the energy market framework and the investment climate.

The European Economic & Social Committee (EESC) adopted its opinion on the PINC on 21 September 2016. FORATOM welcomed the contents of the opinion, in particular the demand that the EC carry out a more detailed analysis of nuclear competitiveness and its contribution to security of supply, and also set up a clear analytical process for national decision-making about the role of nuclear power in relation to other energy sources in the energy mix.

Euratom Treaty Articles 41-44

FORATOM published a Position Paper on 22 January 2016 in response to a European Commission consultation on the revision of the existing information and procedural requirements under Articles 41 to 44 of the Euratom Treaty. These requirements stipulate that nuclear investments above a certain threshold must be communicated to the EC.

FORATOM welcomed the EC's initiative to revise the communication requirements, saying this should contribute to improving the overall communication process in the nuclear field. One of the main objectives of the Euratom Treaty (Article 2) is to facilitate nuclear investments in the EU.

In its Position Paper, FORATOM said there is room for improvement in the way the communication process works. FORATOM made several suggestions as to how companies should communicate their major investments to the EC. One suggestion was that the communication should focus only on finance-related aspects. Other requirements of the Euratom Treaty, such

as those on safety, waste management and radiation protection, could be covered by simply referring to the national licensing procedure to which the project is subject.

FORATOM recommended defining a strict timeframe for the EC to issue its point of view. If no answer were received within the allotted time, the EC should be deemed to have issued a positive viewpoint. FORATOM recommended a 12-month timeframe for new investments and two-months for modifications to existing nuclear installations such as safety improvements or component replacements.

FORATOM suggested substantially increasing the threshold amounts for notification to reflect the current costs of nuclear projects. For example, the threshold should be increased from €40 million to €100 million for modifications to installations.

At the end of 2016, the Commission had still not published a proposal for a revision of the Regulation governing Articles 41 to 44.

Spent fuel and radioactive waste management

During 2016, the European Commission analysed the National Radioactive Waste (Radwaste) Management Programmes submitted in 2015 and examined how Member States have implemented the Radioactive Waste Directive of 2011. EC reports on these two aspects are expected in 2017.



Reform of the EU Emissions Trading System

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 flights responsible for around 50% of EU GHG emissions. The scheme allows trading of emissions allowances so 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 emissions reduction targets. It covers more than 11,000 power stations and industrial plants in 31 countries.

The scheme was first introduced in 2005 and has undergone several changes. Its implementation has been divided into distinct trading periods known as phases. The current, third phase of the EU ETS began in 2013 and will last until 2020.

In July 2015 the EC presented a legislative proposal to revise the EU ETS for the period after 2020, the fourth phase. On addressing this proposal, the EP ITRE (13 October 2016) and ENVI (8 December 2016) Committees voted on their opinions proposing the cancellation of up to 300 million allowances from the Market Stability

Reserve and the transmission of 650 million allowances into the Innovation Fund. The ITRE Committee also proposed keeping the level of the Linear Reduction Factor (LRF) at 2.2%, the same as that proposed by the EC. FORATOM criticised this in a paper published on 6 December 2016, saying that with a rate of 2.2% the EU's 2050 decarbonisation target would not be achieved. FORATOM held meetings with several ITRE and ENVI MEPs to underline the importance of a meaningful and robust ETS carbon price to create incentives for investment in low-carbon electricity production. FORATOM also called for an increase in the outtake rate of allowances into the MSR, as well as guarantees of technology neutrality when using different funds for investment in low-carbon technologies. In 2017, the Council, together with the EP, will prepare a common position and send it back to the EC. The discussions on ETS reform are taking into account the current carbon price which is very low (around 5 euros/t CO₂). Potential investors in low-carbon technologies would like to see a minimum level of around 30 euros/t CO₂.

Dual Use Goods Export Control

On 28 September 2016, the European Commission published a proposal for a revised Regulation on the control of exports of dual use items (COM(2016) 616 final). The revised proposal puts forward new rules on the following aspects:

- A new authorisation for 'large-projects' is proposed for certain large multiannual projects e.g. construction of a nuclear power plant;
- Introduction of new EU General Export Authorisations (EUGEAs) for intra-company transmission of technology and software;
- Introduction of new EUGEAs for low-value shipments;
- Re-evaluation of intra-EU transfers, revising the list of items subject to control, "thus minimising administrative burden and disruptions to trade within the EU while ensuring

the security of transfers of most sensitive items through robust control modalities (e.g. registration, notification, reporting, auditing, post-shipment verification)".

The new proposals seem to be in line with what the industry has been calling for. The FORATOM Legal Expert Group met on 28 November 2016 to elaborate further on a Position Paper that will highlight several aspects of a general nature, such as the fact that the Regulation should not deviate from its primary objective by delving, for example, into human rights issues. A more detailed FORATOM proposal for amendments to the proposed Regulation will be elaborated during 2017 for sending to MEPs and Council members.

Horizon 2020 Research & Development Programme and the SET-Plan



A second Call for Proposals under the Euratom Fission & Radioprotection part of Horizon 2020 (H2020) – to cover the years 2016 and 2017 – was launched in October 2015 with a budget of €105 million and a deadline for applications of 5th October 2016. The indicative budget breakdown for the Call allocated 40% to Reactor Systems, 20% to Radioprotection, 20% to Geological Disposal and 20% to Research Infrastructures, Training & Mobility and Cross-cutting Actions. The EC announced that it had received 70 proposals under this Call and that 59 of them were considered eligible for evaluation. The final list of approved projects will be announced in 2017 as soon as Grant Agreements have been concluded with the successful applicants.

Both FORATOM and ENS are partners in the Horizon 2020 project SPRINT, which is assisting SNETP (see below) with its planning and communications activities. KIC InnoEnergy and Tractebel joined the project in December 2016. At the end of November 2016, the project reached its first reporting milestone and submitted progress and budget reports to DG Research.

On 20 October 2016, the EC issued a Public Consultation questionnaire regarding the first three years of the H2020 Euratom Programme and its future direction. FORATOM responded to this consultation.

The Strategic Energy Technology Plan (SET-Plan) community was working throughout 2016 on the

preparation of new roadmap documents called for in the EC's Integrated SET-Plan Communication of September 2015. The Integrated SET-Plan is focused on 10 key actions. Key action number 10 is titled 'Maintaining a high level of safety of nuclear reactors and associated fuel cycles during operation and decommissioning, while improving their efficiency'. In April 2016, FORATOM was invited by the SET-Plan Secretariat to present its views on a draft 'Issues Paper' addressing this action. FORATOM's response was published on the EC's SETIS website: https://setis.ec.europa.eu/system/files/foratom_input_action10.pdf. The final version of the Nuclear Issues Paper was published in May 2016 and was followed in August 2016 by a nuclear 'Declaration of Intent' from the Member States Steering Group. On 1-2 December 2016, the Slovak Presidency of the EU hosted a SET-Plan Conference in Bratislava, which included three side events related to nuclear research. During the main part of the Conference, Ministers from Slovakia, the Czech Republic and Poland all made positive comments about nuclear energy in their keynote speeches.

On 10 November 2016, Commissioner Tibor Navracsics signed on behalf of Euratom an agreement to extend for another 10 years the Framework Agreement for International Collaboration on R&D of Generation IV Nuclear Energy Systems. On 12 December, FORATOM attended the annual Euratom Coordination meeting linked to this agreement.

The Sustainable Nuclear Energy Technology Platform

The Sustainable Nuclear Energy Technology Platform (SNETP) was established in 2007 to coordinate nuclear fission research actions and to advise the EC on priorities for EU funding. Membership of SNETP comprises 68 organisations from 18 countries. During 2016, FORATOM continued to participate in meetings of the Platform's Governing Board, Executive Committee and Secretariat, and to be an active partner in the SPRINT project. SNETP held its sixth General Assembly meeting on 30 November 2016 in Bratislava alongside the SET-Plan Conference. Members were told that it had been decided to transform SNETP into a legal entity. This would facilitate the signing of agreements with other organisations, help the collection of membership fees, improve the Platform's visibility, and better integrate the work of its

three pillars NUGENIA, ESNII and NC2I. The legal transformation will be completed by Q1 2018. In April 2016, a NUGENIA Forum meeting was held in Marseille, France, and included a visit to the Jules Horowitz Research Reactor under construction. In May 2016, SNETP released a Position Paper regarding the European Innovation Council. In June 2016, SNETP contributed jointly with the European Energy Research Association's Joint Programme on Nuclear Materials (EERA/JPNM) to the consolidation of the SET-Plan Nuclear Issue Paper prepared by the European Commission. In September 2016, a 2nd NUGENIA Stakeholders Conference was held during the IAEA Annual meeting in Vienna. In December 2016, a Memorandum of Understanding was signed between SNETP and EERA/JPNM enhancing further cooperation.

The European Chemicals Agency and the Issue of Borates

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 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.

Following a two-year industry-wide lobbying campaign involving also the European Borates

Association, FORATOM was pleased to learn that the 7-8 December 2016 meeting of the REACH Committee adopted a proposal to exclude borates from classification during the revision exercise. The proposal included the following wording: Furthermore, the uses of these substances are very diverse and concern a broad range of different manufacturing industries, expected to lead to highly complex applications for authorisation. As currently the experience for handling authorisation applications covering broad ranges of uses is still limited, it is appropriate to postpone the decision on the inclusion of these substances in [REACH] Annex XIV for the time being. The endorsement of this proposal by the Council and Parliament is expected to be a formality. FORATOM will continue to monitor the situation.

European Nuclear Energy Forum



The 11th ENEF plenary meeting took place on 3-4 October 2016 in Bratislava, hosted by the Slovakian EU Presidency. Around 200 people participated. The event began with an opening dinner speech by Maroš Šefčovič, EC Vice-President in charge of the Energy Union, who summarised the Commission's recent energy initiatives. The opening session the next day featured speeches by Robert Fico, Prime Minister of the Slovak Republic and Bohuslav Sobotka, Prime Minister of the Czech Republic. Both expressed their strong support for nuclear energy. Their key messages reflected the view that nuclear has an important role to play in decarbonising the EU's electricity generating sector and that strong incentives for investment are needed. The topic of providing incentives to investors was discussed among the first group of panellists. Gerassimos Thomas, Deputy Director-General, DG Energy, underlined the Commission's priorities of security of supply, and decarbonisation and competitiveness. He highlighted the need for a stable framework under Euratom, and rules governing public procurement and state aid. Hungarian MEP Benedek Jávor (Greens/EFA), representing Nuclear Transparency Watch, was critical of the alleged investment benefits given to nuclear under the Euratom Treaty relative to other technologies. FORATOM Director-General Jean-Pol Poncelet urged the Commission to increase EU financial support to enable the preservation of technological and scientific leadership in the nuclear sector. He also called on the Commission to propose a new Energy Market Design that facilitates investments in all low-carbon energy sources – renewables

and nuclear – in order to secure Europe's low-carbon future. Finally, Pierre Jean Coulon, President of the Transport, energy, infrastructure and the information society (TEN) Section of the European Economic and Social Committee (EESC), presented the EESC's opinion on the PINC and forcibly reminded the Commission of its duty to take this opinion into account.

There were two panel debates. The first was dedicated to the main findings of the Commission's 2016 PINC, with specific reference to the new market design. Panellists considered issues relating to investment priorities for the front-end of the nuclear fuel cycle, cost factors for new nuclear projects, the future role of nuclear technology, the market design for transition to low-carbon power, and regulatory issues, including both state aid and safety. The panellists generally welcomed the PINC publication and agreed that nuclear should be part of the decarbonisation discussion, even if views differed on how to achieve that. The panel underlined the need for technological leadership and a predictable legal framework. Panellists recognised that the high cost of construction is the main challenge facing nuclear new build and called for greater standardisation of parts and materials to be made available to all vendors. The second panel focused on the status of the Emergency Preparedness & Response mechanisms in Europe. This panel discussed post-Fukushima lessons and their implementation in Europe. It also discussed opportunities for cross-border integration, the importance of engaging the public, the need for proper planning and training, and the assessment of resources available and international peer review mechanisms.

The Plenary ended with Peter Žiga, Slovak Minister of Economy, and Jan Mládek, Czech Minister of Industry, both stressing that nuclear power has its place in Europe and will continue to play an important role in the European energy market. Mr Mládek said the Czech Republic is looking forward to hosting the 12th ENEF Plenary in Prague in 2017.

WENRA Post-Fukushima activities

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

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's 15 years of activities in the field of improving nuclear safety. The updated SRLs were published on the WENRA website.

WENRA RHWG's work was also devoted to the preparation of guidance documents aimed

at providing insights and explanations about the purpose and intent of the revised SRLs. The guidance document on Design Extension Conditions was published on the WENRA website on 3 November 2014. The main guidance document on Natural hazards was approved at the WENRA March 2015 plenary meeting and then published on the WENRA website on 27 April 2015.

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 comment. The three documents were approved at the WENRA meeting and then published on the WENRA website on 4 November 2016.

Revised Nuclear Safety Directive

The EU Nuclear Safety Directive, updated in 2014, requires Member States to conduct peer reviews every six years starting in 2017.

WENRA was invited by The European Nuclear Safety Regulators Group (ENSREG) to draw up the technical specification (TS) for the first European topical peer review on "ageing management". The TS was submitted for public consultation in November 2016. ENISS reviewed the TS and provided suggestions for improvement.

In parallel, in July 2016 ENSREG posted on its website its draft Terms of Reference for the first EU topical peer review for public consultation. ENISS responded to the ENSREG consultation.

IAEA

In 2016, 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 IAEA Nuclear Security Series publications were also reviewed. ENISS commented on a number of IAEA TECDOCs. TECDOC publications do not establish international consensus-based requirements. However, some

The TS and terms of reference for the first EU topical peer review were approved on 31 January 2017 and published on the ENSREG website.

WENRA has also been mandated by ENSREG to provide guidance on Article 8a of the revised Nuclear Safety Directive: timely implementation of reasonably practicable safety improvements to existing nuclear power plants. A draft version of a WENRA guidance paper was presented at the ENSREG November meeting and a final version should be ready by April 2017. The draft will be subject to consultation with ENISS before final approval.

are sufficiently important for consideration by ENISS. One example is the TECDOC on Assessment of Vulnerabilities of Operating Nuclear Power Plants to Extreme External Events.

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

ICRP

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

ENISS participated in the fourth meeting of Senior Representatives of Organisations in Formal Relations with ICRP, which took place in Vienna on 24 November 2016. The main aim of the meeting was to explore areas for collaboration. Each organisation had prepared a report presenting relevant activities and identifying topics of common interest and potential cooperation between both ICRP and participating organisations.

Emergency Preparedness and Response

ENISS decided in March 2016 to review Emergency Preparedness and Response. The group looked at a number of reference documents and carried out an analysis of current and future initiatives at national and European level. It appears that the specific safety characteristics of different reactor designs or the safety enhancements implemented after Fukushima have not been taken into account in the protection measures proposed by some organisations and entities.

ENISS was invited to make a presentation at the ENEF plenary meeting which took place

on 4 October 2016. The meeting featured a panel discussion on Off-site Nuclear Emergency Preparedness and Response. Among the key messages were that emergency plans should be based on site risk and not follow a “one size fits all” approach. Too little has been done to respond to the lesson that it is the non-radiological consequences that dominate health impacts following nuclear emergencies.

Education, Training & Knowledge Management

The European Commission developed several ETKM programmes which contribute to the security and competitiveness of nuclear energy in the EU. One of the recent projects was CAPTURE, which aimed to evaluate human resources trends in the sustainable energy sector, harmonise nuclear skills and competences with EU-wide recognition, and disseminate and preserve nuclear education and training. The Joint Research Institute manages the European Human Resources Observatory for the Nuclear Energy Sector, which monitors the nuclear employment level and makes sure there are no potential future skills gaps.

At international level, the IAEA operates a nuclear knowledge management programme helping its members to transfer knowledge from centres of higher education and training facilities to the nuclear industry. In 2016 the IAEA published two publications providing guidance in knowledge management to which FORATOM and its members

contributed. FORATOM presented its education and knowledge management activities at the 3rd International Nuclear Knowledge Management Conference, a meeting of around 500 E&T stakeholders.

In 2016, FORATOM became a partner in three collaborative projects that have applied for EU funding under Horizon2020:

- ANNETTE: FORATOM advises how to better coordinate E&T activities in Europe and how to facilitate the cross-border mobility of nuclear professionals.
- ELINDER: FORATOM contributes to the dissemination of information among members on coherent and commonly qualified training programmes in nuclear decommissioning and on a new e-learning course programme based on new technologies, targeted towards new careers in nuclear decommissioning.

- ENEN+: FORATOM's responsibility over three years is to develop and implement a communications strategy focusing on getting all nuclear stakeholders to support the common goal to "preserve, maintain

and further develop the valuable nuclear knowledge for today's and future generations". The strategy will serve to support the industry and policymakers in their efforts to maintain and further develop nuclear energy.

BREXIT



On 23 June 2016, the United Kingdom voted in a referendum to leave the European Union. The result was 51.9% in favour of leaving the EU and 48.1% for remaining in it.

In 1973, the UK joined what was then called the European Common Market. It has now become the first country to opt for withdrawal.

The first weeks after the withdrawal decision saw dramatic changes in the UK political landscape: David Cameron stepped down as PM on 24 June and was succeeded by Theresa May, a Remain campaigner. In July, the UK Department for Exiting the European Union (DEXEU) was established; headed by Secretary of State David Davis.

The EU Institutions reacted by appointing, in the Council, Didier Seeuws, a Belgian diplomat, to be in charge of a 'Special Task Force on the UK'. The task force will obtain the political accords needed for the Brexit process to reach a final agreement. In the European Commission, Michel Barnier, a former French Commissioner and former MEP, was appointed to be the EC's chief Brexit negotiator and, in the European Parliament, Guy Verhofstadt, a former Belgian PM and MEP, was appointed as the EP's lead negotiator.

1

Formal notice of intention from withdrawing state to European Council

European Council issues guidelines for negotiations

2

Commission recommends to Council of Ministers to open negotiations

Negotiations between EU and withdrawing Member State

3

Council ask the European Parliament for its consent

Council concludes agreement with withdrawing state by super qualified majority

Ratification of Treaty changes by remaining Member States

Brexit and nuclear - “Brexatom”

Exiting the EU implies the termination of the application of EU Treaties and Protocols in the State concerned. This means the Euratom Treaty will cease to apply in the UK after Brexit. Article 106a(1) of the Euratom Treaty provides that Article 50 of the Treaty on the European Union also applies to the Euratom Treaty. Article 106a (2) states that the reference to “the Union” in Article 50 of the Treaty on European Union shall be taken as a reference to the Euratom Community and the Euratom Treaty.



The UK triggered Article 50 of the Lisbon Treaty on 29 March 2017, meaning exit negotiations should be concluded by March 2019. It is difficult to know at this stage how Brexit will affect the legal challenges already under discussion, especially the one against Hinkley Point C by Austria, which has filed a case at the European Court of Justice claiming that state aid for the project was granted illegally. It is clear that when the UK leaves the EU, the nuclear industry will lose an important advocate in the Council and especially in the Council’s Atomic Questions Group. The UK’s departure will weaken the efforts of a like-minded group of Member States

supporting nuclear power and make it more difficult to resist the anti-nuclear influence of countries – Germany in particular – that are phasing out nuclear. The departure of the UK from Euratom will mean that UK research entities will no longer be eligible for EU funding under the Euratom Research Programme, unless the UK applies for and is granted Associated Country status like Switzerland and Ukraine. The UK will no longer benefit from the Euratom Cooperation Agreements secured with third countries. There are also concerns that doubts about the future trading regime between the UK and the EU will hamper investment and potentially increase costs for the UK’s new build projects. The UK has always been committed to the decarbonisation of its economy and this is unlikely to change; it has adopted ambitious carbon reduction targets.

FORATOM Position

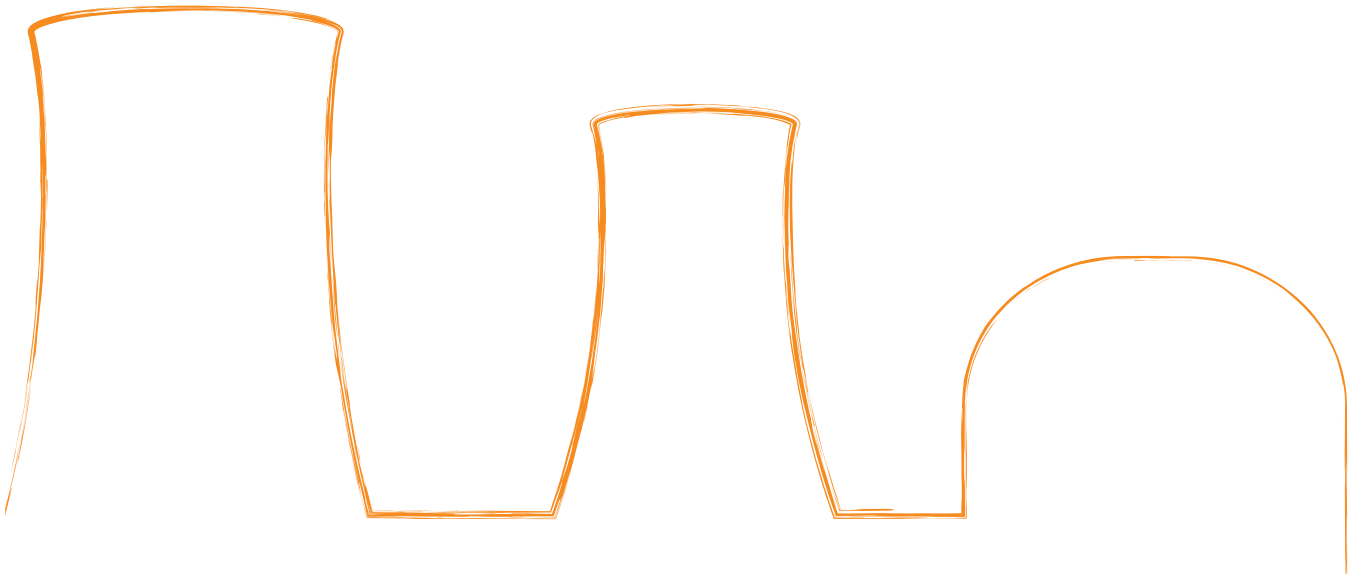
FORATOM will closely follow all the developments related to Brexit that could affect the nuclear sector. FORATOM intends to create, in 2017, a working group dedicated to analysing the impact that Brexit will have, both for the UK nuclear industry and for the remaining EU nuclear industry, in all areas of the nuclear fuel cycle including new build, transport, R&D and decommissioning. FORATOM has assumed a leading role in representing the nuclear sector in the discussions on Brexit within a dedicated EURELECTRIC working group that met for the first time in November 2016.

NB: *The Brexit issue is evolving quickly. As this Annual Report was being completed, there were developments such as the adoption of the UK Government’s EU Withdrawal Bill and confirmation by the UK that it will be leaving the European Atomic Energy Community.*





FORATOM ACTIVITIES AND EVENTS



Discussion on a draft version of PINC

On 4 April 2016, FORATOM welcomed Gerassimos Thomas, Deputy Director General, DG Energy, for a discussion on the PINC with nuclear industry representatives (around 30 people attended). Mr Thomas summarised the contents of the PINC and highlighted the EC's nuclear capacity projections to 2050, the increase in the cost of new build since the last PINC in 2008, the potential benefits of increased harmonisation, the issues surrounding long-term operation (LTO), the comprehensive estimates of future investments across the whole nuclear cycle, and the status of decommissioning and waste management provisions. Jean-Pol Poncelet, DG of FORATOM, said FORATOM welcomed publication of the PINC; that nuclear is expected to remain an important component of the EU's energy mix; that the EC confirms the low carbon, security of supply and

diversification benefits of nuclear; and that the EC offers strong support for maintaining the EU's technology leadership in the nuclear domain. However, FORATOM regretted that there are no targets in the PINC, only projections, which fails to comply with Article 40 of the Euratom Treaty. FORATOM also regretted that there is no vision or political leadership, but only a passive approach; that there is no discussion about the desirability of maintaining EU's nuclear share of electricity for meeting climate change targets, especially after COP 21; and that there is little discussion about how the projected investments in new build and LTO can be financed. In the discussions, all agreed that the new electricity market design would be important for the medium and long-term future of nuclear energy in Europe.

Workshop on Market Design

FORATOM organised a workshop on 28 June 2016, after its General Assembly meeting, focusing on the new EU energy market design, for which proposals were expected from the EC by the end of 2016. The guest speaker was Jan-Horst Keppler, Senior Economic Adviser at the Nuclear Development Division of the OECD/NEA and Professor of Economics at the Université Paris-Dauphine.

In his presentation entitled "On the Market Design for Fostering Low-Carbon Investment in European Electricity Markets", Prof. Keppler gave an overview of the energy market and suggested how it could be improved. He explained that electricity wholesale markets in OECD countries, with variable costs and price volatility, favour carbon-intensive fossil-fuel technologies and do not provide the appropriate long-term investment incentives for low-carbon technologies such as nuclear, hydro, wind and solar. Fostering low-carbon investments in such markets would require high CO₂ prices and entail serious risks to security of electricity supply. Prof. Keppler said the way to ensure low-carbon investment in electricity was to introduce new arrangements providing

long-term investment signals as well as having a robust CO₂ price. Different technologies would play different roles, since nuclear and hydro are dispatchable whereas wind and solar are not. The system effects of each technology need to be taken into account and costs fairly allocated. Prof. Keppler explained the rationale behind liberalised electricity markets in the past, but stressed the pitfalls of such markets in today's context of decarbonisation of the economy.

He concluded by saying that a new market design for low-carbon technologies should strive for a three-pronged approach:

- 1/ Low-carbon investments will need new market arrangements and a robust CO₂ price;
- 2/ Low-carbon technologies need a long-term price signal: price stability can be provided through feed-in-tariffs (FITs), contracts-for-difference (CfDs) or long-term power purchase agreements (PPAs). This does not mean the end of competition. However, it does mean switching from competing on marginal costs to competing on average costs through competitive auctions. Regulated markets have their own challenges,

but provide the price and revenue stability that low-carbon technologies require;

3/ Flexibility provision through demand response,

storage and improved interconnections should be part of the new market design.

IAEA/FORATOM Management System Workshop

On 12-15 December 2016, the 14th edition of the joint IAEA-FORATOM Management System Workshop took place in Vienna. The event gathered a record number of people – more than 120 – from almost 40 countries. The first three days of the event were dedicated to specific topics: Day One: Standards; Day Two: Leadership, Management and Culture for Safety; Day Three: Managing Risks, Project Risks, Risk Based/Informed Auditing and Grading Activities. On the last day, participants had the chance to present practices, applications and case studies.

The speakers for the welcoming session were Mikhail Chudakov, Deputy Director General, Nuclear Energy, IAEA; and Bertrand De L'Épinois, FORATOM President and Senior Vice President for Safety Standards at AREVA. They said challenges in the area of quality, good management and

leadership may be more important than ever and that safety is the cornerstone of a sustainable nuclear business.

The event offered a unique opportunity for senior-level experts to share their experience with newcomers – supply chain companies, power plant operators and regulators from countries like Jamaica, Indonesia and Jordan. Interactive working groups helped delegates exchange ideas and better understand the subject of risk management, leadership and safety culture.

Based on the feedback forms filled in by the participants, the 14th edition was one of the most successful since the beginning of the IAEA-FORATOM collaboration on the Management System subject in 1998. The 15th edition will be held in June 2018 in Toronto, Canada.

Workshop on the Clean Energy for All Europeans Package



FORATOM organised a post-General Assembly Workshop on 13 December 2016 on the subject of the EC Clean Energy Package. The speaker was Prof. Graham Weale, former Chief Economist at RWE and now Honorary Professor of Energy Economics & Politics in the Faculty of Management & Economics at Ruhr University in Bochum, Germany. Prof. Weale is a British citizen and studied economics at Oxford University.

The speaker's main contention was that the EC Package was flawed and didn't stand up to economic scrutiny. He said the electricity market had become too complicated, with the various subsidies and support mechanisms having depressed the wholesale price to such an extent that it provided no signal for new investment. Furthermore, low-carbon energy sources needed something more than marginal cost remuneration, otherwise the cost of capital could not be recouped from the market.

European Nuclear Safety Regulators

ENISS took part in a number of conferences organised at national and European level. Participation provided ENISS with an 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.

Communications

On 27 June 2016, FORATOM's Communications Task Force convened in Brussels. Over 15 nuclear communicators from across Europe took part in the meeting under the chairmanship of Nathalie Guillaume of France's Atomic and Alternative Energy Commission (CEA).

A range of nuclear communications issues, challenges and deliverables were discussed. These included the consequences of Brexit for the nuclear sector, the "Nuclear for Climate" campaign in the prospect of COP 22 in November 2016, a Q&A on the extension of the emergency preparedness and response zones, and the preparation of PIME 2017 international conference – a European Nuclear Society flagship event for nuclear communicators to which FORATOM contributes significantly.

The next day, on 28 June, FORATOM organised a workshop on stakeholder dialogue. Stéphane Travert, a Member of the French Parliament and the Flamanville local information committee (CLI) concluded the day. He gave an insight into the work of the CLI in his constituency, La Manche,

where there are three nuclear facilities: the Flamanville NPP, the La Hague reprocessing plant and a waste repository plant run by Andra. Based on the workshop, the FORATOM Communications team produced a booklet summarising guidelines and tips for an efficient stakeholder dialogue.

On 25 October 2016, the CTF met in Paks, Hungary. The meeting was hosted by the Paks NPP. Nearly 20 nuclear communicators took part under the chairmanship of Nathalie Guillaume, CEA (France).

There were a range of communications issues and deliverables on the agenda, including a round-up of member countries' activities, the presentation of the final Q&A on emergency preparedness and response, a presentation on the World Nuclear Association's Harmony programme, an overview of activities of the Nuclear for Climate campaign in preparation for COP22 and the preparation of PIME 2017. The next day participants had the opportunity to visit either the Paks NPP or Bataapati waste disposal facility.

PIME

In February 2016, the Romanian capital of Bucharest was host to PIME 2016, the ENS conference for nuclear communicators co-organised by FORATOM. Around 100 communicators from across the world, including China, Japan, South Africa, Canada, the US and Russia, gathered to discuss key communications issues, to share experiences and to identify solutions to the many challenges communicators face. The conference focused on social media marketing, communicators as lobbyists, and

communicating about decommissioning and waste management.

Delegates learned from other sectors about crisis communication (for example Brussels Airlines and the Ebola crisis).

The PIME 2016 Award for Communications Excellence was awarded to the Société Française d'Énergie Nucléaire (SFEN) and its partners for their "Nuclear for Climate" initiative.

Global Presence

In 2016, FORATOM was involved in the Nuclear for Climate initiative, which brought together 140 nuclear associations and societies. The objective of the campaign was to present nuclear energy as part of the solution in the fight against climate change. A “Nuclear for Climate” delegation presented the initiative in Marrakesh during COP22, talking to high-level representatives and ensuring that nuclear is seen as low-carbon technology.

Throughout the year FORATOM interacted with 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 the World Association of Nuclear Operators (WANO). The statistical analysis, advice and recommendations that these organisations provide in publications like World Energy Outlook (IEA), and 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 contributing to the international energy debate. FORATOM analysed and communicated the information from these publications to its members, and to the general public, at every possible opportunity. As mentioned, experts from these organisations took part in workshops and events organised by FORATOM in 2016.

Positive contacts were maintained with interest groups, think-tanks, trade associations and independent experts from outside of the EU. Each of these organisations brought specialised knowledge and a different perspective to the debating table.

FORATOM Publications

In 2016, one of FORATOM’s key objectives was to act as the voice of the European nuclear industry. This has been achieved partly by releasing on a regular basis various publications and studies covering significant aspects of nuclear energy in Europe.

In 2016 FORATOM released a wide range of publications including: Position Papers – FORATOM released a number of position papers related to significant issues on the EU’s energy agenda.

Key topics covered in 2016 by FORATOM were:

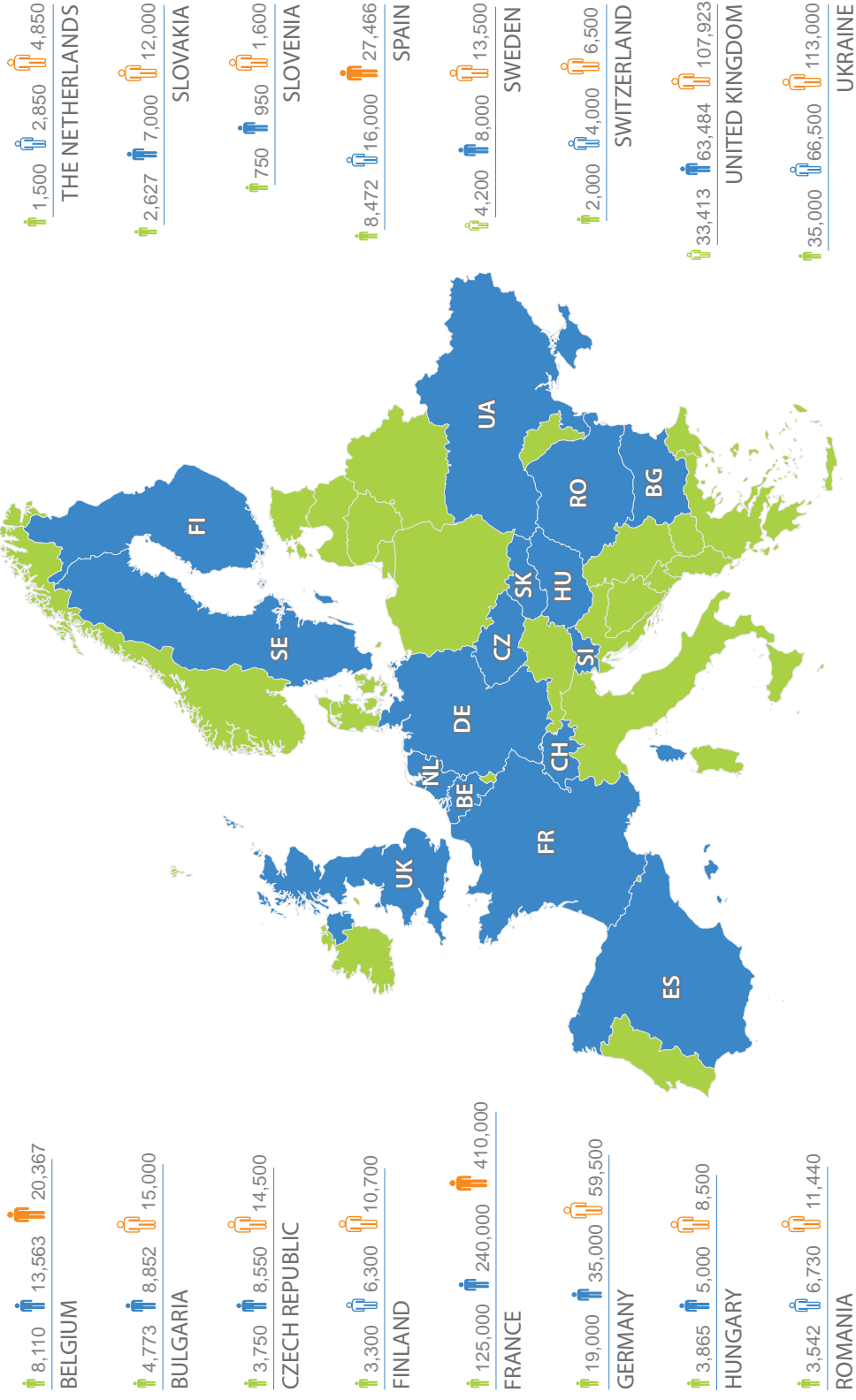
- FORATOM’s position on the EU Emissions Trading Scheme;
- FORATOM’s further commentary on the Nuclear Illustrative Programme (PINC);
- Nuclear power – a key contributor to a decarbonised European Union;
- FORATOM’s response to the EC invitation to submit comments on the Paks II nuclear power plant project in Hungary;
- FORATOM’s position regarding the public consultation on Article 41-44 Euratom;

- Guidelines on stakeholder dialogue - a deliverable from the Communications Task Force’s (CTF) Workshop. The guidelines present a list of good practices, tips and pitfalls for conducting a dialogue with key stakeholders;
- Factsheet on Fukushima and Chernobyl – a comprehensive analysis of two nuclear accidents which have affected the perception of the global nuclear industry. The aim of the document was to provide verified facts and figures which could be used while discussing the accidents;
- Q&A Fukushima – a set of the most commonly asked questions regarding the Fukushima accident with comprehensive answers covering each of the issues mentioned in questions.

All FORATOM’s publications are available on the website (www.foratom.org/publications).

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-economique de l'électronucléaire en France, 2011."



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