



**ANNUAL REPORT  
2019**



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# MESSAGE FROM MEP JESSICA POLFJÄRD



2 July 2019 marked the start of the European Parliament's 9th legislature, bringing together experienced and new MEPs. Our EPP delegation forms part of the group of new MEPs. We are also the largest Swedish delegation in the EP. The reason for our success? We actively supported nuclear as a solution to climate change in our national campaigns. Now that we are part of the EU policymaking machine, we want to put forward our positive messages in the discussions.

These first months in the European Parliament already gave a strong sense of this legislature's political priorities, the first one being our commitment to the fight against climate change. Becoming a climate-neutral continent by 2050 will not only require a significant transformation of many sectors, it will also need a strong and coherent policy framework. This is why we support a comprehensive, future-oriented approach to the energy transition. In light of this, we believe that an increase of the 2030 emissions reduction target to 55% compared to 1990 levels is essential to reach our 2050 targets. And this has to be achieved by taking a pragmatic policy approach and supporting all low-carbon energy sources, such as nuclear.

The year ended on a strong note with the presentation of the European Green Deal which will be our focus for the coming months. Our delegation strongly believes that the role of nuclear and its societal benefits should be recognised as an essential component for a successful European Green Deal. For this, we will strive for policies developed under the Green Deal which recognise the role of all low-carbon solutions. This is essential if the EU wants to be a climate leader.

Jessica Polfjärd

# MESSAGE FROM OUR PRESIDENT



I was delighted to take over the role of President of FORATOM at the beginning of 2020. Indeed, I strongly believe that we are at a turning point when it comes to the role which nuclear is going to play in Europe's energy future. And on behalf of the FORATOM members, I can confirm that the European nuclear industry stands ready to help Europe meet its challenges.

At the time of writing this statement we find ourselves in the midst of the coronavirus pandemic. The workers in the European nuclear sector are currently doing their utmost to ensure a safe and secure supply of energy for citizens – as well as vital nuclear medical testing and treatment equipment. So to them, I say thank you!

Esa Hyvärinen

## ACHIEVING A CLIMATE NEUTRAL FUTURE

Low-carbon electricity and a higher level of electrification have to form the cornerstone of the EU's CO<sub>2</sub> emissions reduction process – and the reality is that nuclear will have to play a role. In addition, compared with other low-carbon energy sources, nuclear is capable of providing reliable and large amounts of electricity.

At the end of 2019, several EU Member States made their commitment to more ambitious CO<sub>2</sub> reduction targets conditional upon being able to invest in new nuclear capacity. Accordingly, the European Council's memorandum following the December 2019 Council summit includes nuclear energy as a tool used by some Member States to achieve climate neutrality.

## ADOPTING CONSISTENT, COHERENT AND ACHIEVABLE POLICES

The new European Commission has had a busy start to the year, with many communications, strategies and policy frameworks being issued. These include the EU Green Deal, Sustainable Europe Investment Plan, Climate Law, and many more. From my perspective, the most important objective is to strengthen the technology neutrality principle in all EU policies and focus – simultaneously – on issues such as climate change mitigation, security of energy supply or affordability. Indeed, in order to ensure both public and private financing for further nuclear development (including the long-term operation of existing plants, new build projects and nuclear innovation), policies such as the Sustainable Finance Initiative, InvestEU and the Just Transition Mechanism, are of crucial importance. Nuclear energy isn't asking for preferential treatment, but for an equal treatment of all low-carbon sources.

Indeed, many tend to forget that nuclear emits 30 times less CO<sub>2</sub> than gas and 65 times less than coal. The lifecycle CO<sub>2</sub> emissions per kWh produced by nuclear reactors are comparable to those of wind and significantly lower than solar. It can also ensure that citizens and industries have access to the energy they need, when they need it. This is why we need EU policies to recognise the contribution of ALL low-carbon technologies.

## MAKING SURE THE INDUSTRY PLAYS ITS PART

Of course, there are many internal challenges the industry has to focus on in order to reinforce the perception of nuclear energy as an important element of Europe's future that can help the EU achieve many of its climate and energy goals. Nuclear energy's competitiveness is an area which we need to work on and one way of achieving this is by maintaining a qualified nuclear supply chain industry. This is something which industry, regulators and law makers will all need to look into.

In addition, nuclear energy – just like any other technology – must keep developing. Therefore, the topic of nuclear R&D and innovation is of utmost importance. Here, some of the key areas to be focused on include SMRs, use of nuclear in providing CO<sub>2</sub>-free heating and the use of nuclear in other applications apart from electricity generation.

2019 set the scene for where the EU was headed – 2020 is the year in which we hope to see policies and legislation which are capable of taking the EU to its final destination: a carbon-free and competitive Europe.

# MESSAGE FROM OUR DIRECTOR GENERAL



2019 saw the creation of the #NuclearEuropeLeaders, which brings together CEO's and Chief Nuclear Officers from the nuclear industry. One of their first actions was the publication of a manifesto outlining what they believe needs to be done in order to achieve a decarbonised Europe by 2050, whilst at the same time maintaining growth and jobs. In this document they call upon EU policymakers to work with them to overcome the hurdles which have the potential to prevent Europe from achieving its goals. We very much welcome this initiative taken by high level representatives from the nuclear industry, particularly with the arrival of a new European Commission and European Parliament last year.

2020 is the year in which we plan to broaden our horizons. It is clear that nuclear provides Europe with the low-carbon electricity it needs, when it needs it. But it is also about much more than that. And so, as an organisation, we plan to play a more active role in EU policies relating to the industrial strategy and circular economy.

Yves Desbazeille

## NUCLEAR WITHIN THE INDUSTRIAL STRATEGY

Helping the industry decarbonise – whilst at the same time remaining competitive – will require a secure supply of low-carbon energy at a competitive price. Nuclear energy can contribute to making this a reality by helping to:

- ▶ Maintain the competitiveness of Europe's industry as energy often accounts for a significant share of manufacturing costs,
- ▶ Decarbonise industry and thus contribute towards the 2050 carbon neutrality target,
- ▶ Provide industry with the energy it needs when it needs it, which is particularly important for processes which run 24/7.

Nuclear could also become a potential player in the field of sector coupling. For example, the industry is currently looking into the option of producing hydrogen through electrolysis for use in hard to decarbonise sectors (eg industry and transport). It could also provide heat to be used in industrial processes or for district heating purposes.

Furthermore, it is important that the EU realises that the European nuclear industry provides more than just energy. Several of the nuclear reactors found in Europe provide life-saving medical isotopes, essential for treating cancer. Nuclear is also used in medical diagnosis, space applications, agriculture and much more.

Here, it is important to underline that a significant percentage of the nuclear supply chain is based in Europe, contrary to some other technologies.

## A SIGNIFICANT CONTRIBUTOR TO GROWTH AND JOBS

Today, the European nuclear industry sustains around 1 million jobs and generates around €450 billion in GDP. And all of this in Europe.

According to a Deloitte study entitled "[Economic and Social Impact Report](#)", one GW of installed nuclear capacity in the EU triggers €9.3 billion in annual investments both in the nuclear and connected economic sectors. In addition, each GW provides permanent employment to approx. 10,000 people and generates €4.3 Bn in EU GDP.

Given that one of the cornerstones of the industrial strategy is ensuring that Europe has an industry which generates jobs and contributes to the economy, these figures show just what an important player the European nuclear industry really is.



## A TRULY CIRCULAR INDUSTRY

A lot of attention has been given recently to the issue of nuclear waste. What many may not realise – and what we have perhaps not been good enough at communicating on – is that actually the waste management solutions implemented in our industry can serve as an example to others. Firstly, because the European nuclear industry has full traceability of the waste which it generates. The reality today is that much of the other waste generated in Europe – including hazardous and toxic waste – is often shipped out to other parts of the world without making sure that it is dealt with responsibly.

Secondly, because we reuse our waste within our own processes. For example, spent nuclear fuel can be reconverted into new fuel to be reused in certain reactors. In addition, waste which we cannot reuse ourselves has the potential to be recycled into a resource for other industries, such as those relating to space exploration. Thirdly, because the industry is developing a permanent solution for the long-term disposal of its residual, high level waste. Indeed, one project in Finland is due to be completed and ready for operation in the next five years or so.

By broadening our focus to other non-energy specific policies we have the potential of demonstrating just how valuable – and versatile – the European nuclear industry actually is.



RADIOACTIVE WASTE MUST BE PREVENTED FROM ENDING UP IN OUR LIVING ENVIRONMENT  
COVRA

# THE VOICE OF THE EUROPEAN NUCLEAR INDUSTRY



FORATOM PRESS CONFERENCE "POWERING THE ECONOMY". 25 APRIL 2019

## WHO WE ARE

FORATOM is the Brussels-based trade association for the nuclear industry in Europe. It 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 us and 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.

## WHAT WE DO

FORATOM provides information and expertise on the role of nuclear energy. We engage proactively at EU level on key nuclear matters by producing position papers, statements, newsfeeds, infographics, responses to public consultations and analyses of EU proposals and public opinion. We organise regular networking events such as dinner debates, workshops, one-to-one meetings, press briefings and visits to nuclear facilities.

Some of the key topics we deal with include security of energy supply, competitiveness, economics of nuclear, nuclear safety, nuclear liability, radioactive waste management, decommissioning, nuclear transport, environment, enabling factors for new nuclear projects, R&D, energy mix, non-proliferation, public opinion, Euratom Treaty and emergency preparedness.

## OUR MEMBERS

The membership of FORATOM is made up of 15 national nuclear associations active across Europe and the companies that they represent, and three corporate members, the Czech energy company, CEZ, Fermi Energia in Estonia and the Polish energy group, PGE EJ1. More than 3,000 companies 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:

- ▶ Nuclear utilities
- ▶ Engineering companies
- ▶ Plant decommissioning companies
- ▶ Lawyers, consulting, insurance and service companies
- ▶ Uranium mining, milling and enrichment companies
- ▶ Nuclear fuel fabricators
- ▶ Spent nuclear fuel reprocessing companies
- ▶ Nuclear transporters
- ▶ Reactor and component vendors
- ▶ Waste management companies

- 
- ▶ Belgian Nuclear Forum
  - ▶ Bulgarian Atomic Forum
  - ▶ Finnish Energy Industries
  - ▶ French Nuclear Industry Association
  - ▶ Hungarian Nuclear Forum
  - ▶ Italian Nuclear Association
  - ▶ Nucleair Nederland
  - ▶ Nuclear Industry Association UK
  - ▶ Romanian Atomic Forum
  - ▶ Slovak Nuclear Forum
  - ▶ Slovenian Nuclear Forum
  - ▶ Spanish Nuclear Industry Forum
  - ▶ Swedish Atomic Forum
  - ▶ Swiss Nuclear Forum
  - ▶ Ukrainian Nuclear Forum Association
  - ▶ CEZ (Czech Republic), Fermi Energia (Estonia) and PGE EJ1 (Poland) are Corporate Members

## THE EXECUTIVE BOARD

The Executive Officers are appointed by the General Assembly for a period of two years:

- ▶ Ignacio Araluce, FINE, Spain
- ▶ Noël Camarcat, GIFEN, France
- ▶ Teodor Chirica, ROMATOM, Romania (Past President)
- ▶ Tom Greatrex, NIA, United Kingdom
- ▶ Esa Hyvärinen, ET, Finland
- ▶ Csaba Kiss, Hungarian Nuclear Forum, Hungary
- ▶ Mats Ladeborn, SAFO, Sweden
- ▶ Robert Leclère, BNF, Belgium

## MEET THE TEAM



Sophie Dayraut  
Communications Officer



Danielle de Crombrughe-L.  
Support Team Manager



Graziella De Riddere  
IT Manager



Yves Desbazeille  
Director General



Alexandre Ferrafiat  
Legal & Economic Advisor



Nathalie Foriers  
Assistant



Muriel Glibert  
ENISS Manager



Andrei Goicea  
Policy Director



Jessica Johnson  
Communication &  
EU Stakeholders Director



Manuel Lemos Mbunga  
Communications Intern



Nathan Paterson  
Sr Technology Advisor



Berta Picamal  
DG Office, Legal & Intl  
Relations Director



William Ranval  
ENISS Director



Witold Strzelecki  
Communications Manager



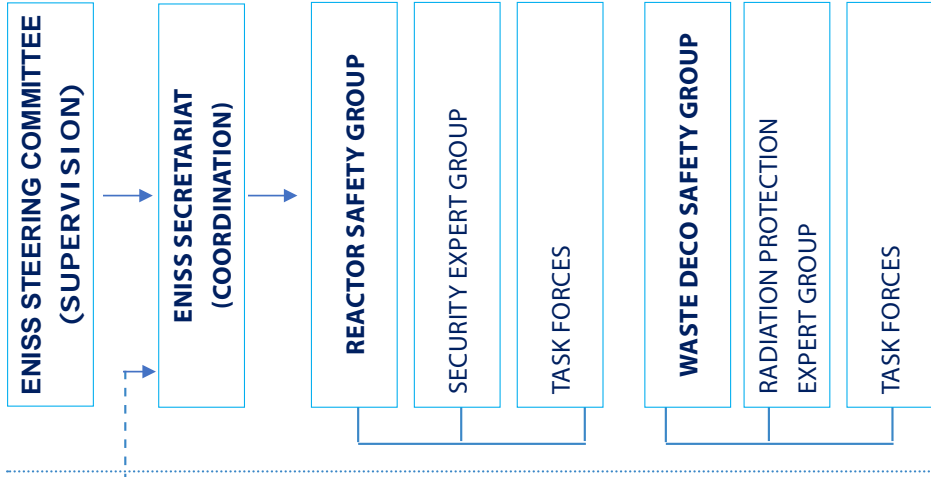
Aude Van Hille  
Reception Assistant

## OUR WORKING GROUPS

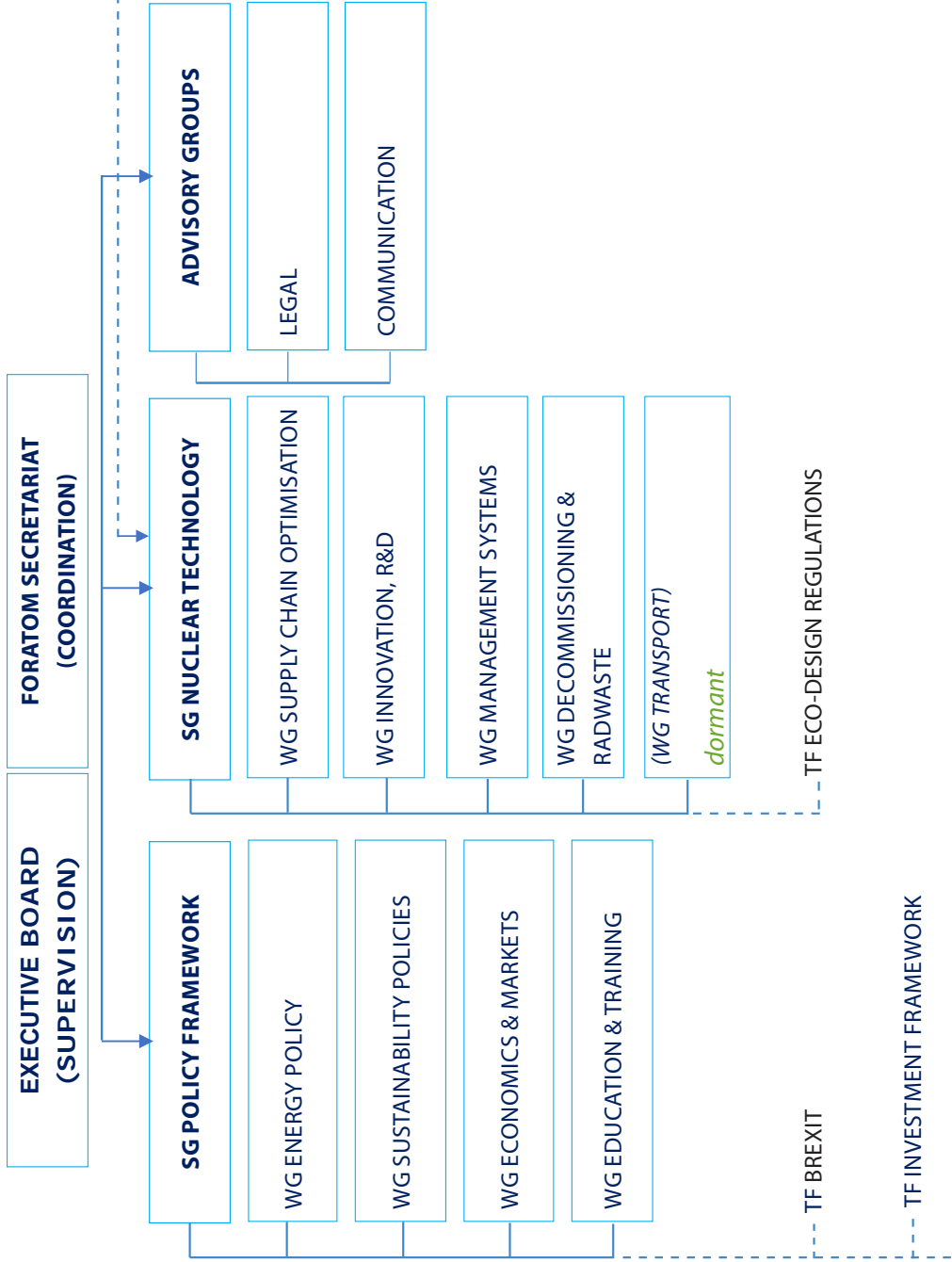


FORATOM COMMUNICATIONS ADVISORY GROUP

## ENISS STRUCTURE



## FORATOM WORKING STRUCTURE



PERMANENT

«ad hoc»

# POLICY FOCUS



Picture - Pixabay



## SUSTAINABILITY

The key item on the sustainability agenda in 2019 was the Sustainable Finance Initiative (SFI). At the beginning of the year FORATOM was alerted to the creation of a series of sub-groups under the SFI Technical Expert Group (TEG) established by the European Commission. The aim of these sub-groups was to work on a taxonomy to identify which economic sectors can be considered as “environmentally sustainable” for investment purposes. Whilst FORATOM itself was not accepted as a member of the sub-group dealing with nuclear, it remained actively involved in the process by providing those who were with input on a regular basis.

Based on the work of these sub-groups, the TEG issued its draft Taxonomy Report in June 2019. Whilst the report recognises the substantial contribution of nuclear energy to climate change mitigation objectives, it did not recommend the inclusion of nuclear in the taxonomy at this stage. This is because it felt that there are still significant gaps in the data when it comes to the Do No Significant Harm (DNSH) criteria, and the fact that it does not believe that a long term solution currently exists for nuclear waste. However, this did not appear to pose a problem for the inclusion of other technologies which generate waste for which there is no permanent solution (eg toxic and hazardous waste). FORATOM therefore regrets that this report did not treat all low-carbon power producing technologies in the same way.

In its response to the public consultation on this report which ran during the summer of 2019, FORATOM expressed the view that the SFI should not aim to exclude a particular technology without providing a valid justification. In order to identify whether an energy source is sustainable or not, it is important to evaluate each one on the basis of objective criteria and using a whole life-cycle approach.

This point also played a key role in the Trilogue negotiations between the Commission, Council and European Parliament on the so-called ‘Taxonomy Regulation’. FORATOM welcomes the agreement reached between the three institutions at the end of 2019 and the fact that the agreed text does not exclude nuclear energy from the regulation. Regarding the delegated acts, due to be developed in 2020 and

which subject nuclear energy to a “do no significant harm” assessment, FORATOM calls on the European Commission to adopt a technology neutral and fact-based approach. Furthermore, for nuclear, such an assessment should be undertaken by experts with a strong knowledge of the nuclear life cycle. FORATOM is confident that such a thorough and fact-based approach, which will evaluate the different energy sources on the basis of objective criteria (including CO<sub>2</sub> emissions, volume and traceability of waste, raw material consumption and land use impacts), will lead to the recognition of nuclear as a sustainable source of energy that contributes significantly to climate change mitigation.

In November, the European Investment Bank (EIB) published its revised Energy Lending Policy (ELP). FORATOM is pleased to announce that nuclear remains eligible for EIB funds. Nevertheless, it should be borne in mind that the ELP will be revised in accordance with the final SFI Taxonomy.



## ENERGY & CLIMATE

In 2019, FORATOM contributed to the revision of the Technology Assumptions in the context of a new EU Reference Scenario. This scenario is one of the Commission's key analysis tools in the areas of energy, transport and climate action. It allows policymakers to analyse the long-term economic, energy, climate and transport outlook based on the current policy framework. It is not designed as a forecast of what is likely to happen in the future, but it provides a benchmark against which new policy proposals can be assessed. During the consultation process, FORATOM responded using as a reference the comments provided for a similar consultation in 2018. In the current revision, the Commission also includes assumptions on Long-Term Operation. In our opinion, the EC's assumptions for the overnight costs (both for Gen III new build and LTO) and Operation & Maintenance costs (both fixed and variable) are too high. We also highlighted the need to consider Small Modular Reactors and hydrogen produced from nuclear power.

Following the publication of the FTI-CL study "[Pathways to 2050: role of nuclear in a low-carbon Europe](#)" at the end of 2018, FORATOM commissioned a follow-up study from Deloitte which looked at the economic and social impact of the European nuclear industry. Entitled "[Economic and Social Impact Report](#)", it found that the European nuclear industry currently sustains more than 1.1 million jobs in the EU and generates more than half a trillion euros in GDP. An additional objective of this study was to provide data on the economic contribution of the European nuclear industry up to 2050, based on the low, medium and high scenarios identified under the FTI-CL study. Looking ahead to 2050, if nuclear were to continue to account for one quarter of the electricity mix in 2050 (150 GW of installed capacity), the authors believe that, on average, the industry would:

- ▶ support more than 1.3 million jobs annually
- ▶ generate €576 billion per year in GDP
- ▶ boost tax revenues by €110.2 billion per year
- ▶ provide households with €490.9 billion in disposable income.

Following on from this, FORATOM released a position paper on the "[The importance of long-term operation of the existing EU nuclear fleet](#)" in light of current

discussions at EU level on the long-term strategy to reduce greenhouse gas emissions. The paper makes it clear that the transition towards a carbon-neutral Europe in 2050 cannot be achieved without the long-term operation of the current nuclear fleet. It also highlights the economic advantages associated with the continued operation of the existing fleet, which is by far the cheapest form of electricity production compared to all other technologies. Additional benefits, including impact on decarbonisation, security of supply or maintaining employee competences, are also highlighted in the paper.

In October, FORATOM contributed to the IEA's in-depth energy review of the European Union. Produced for the first time in 2008, the IEA performs periodic reviews of the EU, with the last report dating back in 2014. On this occasion, FORATOM expressed the views of the nuclear sector in the EU context, highlighting the potential impact of the Sustainable Finance Initiative on the nuclear industry, the lack of vision for the development of the power system and investments in low-carbon technologies due to the lack of a long term vision, and the need for policy coherence at EU level for technologies such as nuclear. The conclusions of the review are expected to be released during the 1st half of 2020.

In November 2019, the newly elected European Parliament adopted a resolution on COP25. FORATOM was delighted to see the Parliament support all technologies needed in the fight against climate change, and in particular its recognition of the role which low-carbon nuclear has to play in meeting climate objectives and in ensuring security of supply.

The year ended with the new European Commission publishing its European Green Deal communication. We welcome Commission's goal of becoming more ambitious in reducing CO<sub>2</sub> emissions in the EU whilst at the same time ensuring that no citizen is left behind in the transition. In addition, FORATOM supports the aim of designing and implementing a strong industrial strategy. Not only is nuclear key in providing the baseload electricity which other industries depend on at a reasonable cost, it is also an important European industry itself.

## BREXIT

Since 29 March 2017, when the UK triggered Article 50 of the Treaty on the European Union confirming its decision to leave the EU, negotiations to agree on the separation issues have taken place between the EU and the UK leading to the publication of the [Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community and the Political declaration setting out the framework for the future relationship between the European Union and the United Kingdom](#) on 12 November 2019.

As far as separation issues are concerned, Euratom related matters are described under Article IX of the Agreement (articles 79 to 85). On the framework for the future relationship between both parties, recognising the importance of nuclear safety and non-proliferation, the future relationship should include a wide-ranging Nuclear Cooperation Agreement (NCA) between Euratom and the UK on peaceful uses of nuclear energy, underpinned by commitments to their existing high standards of nuclear safety. The agreement should enable cooperation between Euratom and the UK and its national authorities. This should include exchange of information in areas of mutual interest such as safeguards, safety and cooperation with the International Atomic Energy Agency (IAEA). It should facilitate trade in nuclear materials and equipment, and provide for the participation of the UK as a third country in Union systems for monitoring and exchanging information on levels of radioactivity in the environment, namely the European Community Urgent Radiological Information Exchange and the European Radiological Data Exchange Platform. On research activities, it is the intention to associate the UK to the EU programs. Likewise, the authorisations and approvals of contracts for the supply of nuclear materials between both will be assessed by the Euratom Supply Agency in a timely manner to void disruptions.

Since the beginning of the negotiations, FORATOM has insisted on the fact that the nuclear industry is not only affected by Euratom but also by all other topics contemplated under the single market (ie free movement of goods, services and people, specially).

The UK officially ceased to be a member of the EU – as well as of the Euratom community – as of 31 January 2020.

The European Commission established a new Task Force (the ‘Task Force for Relations with the United Kingdom’ [UKTF]) on 16 November 2019, as part of the European Commission’s Secretariat-General. It replaces the Task Force for the preparation and Conduct of the Negotiations with the United Kingdom under Article 50 TEU (so called Task Force 50), which was created on 1 October 2016 to lead withdrawal negotiations.

Michel Barnier was reconfirmed as Head of the Task Force.

The Task Force coordinates all the Commission’s work on all strategic, operational, legal and financial issues related to the UK’s withdrawal from the European Union, including the negotiations on the future relationship with the UK, the implementation of the Withdrawal Agreement, as well as the Commission’s ‘no-deal’ preparedness work.



## ESPOO CONVENTION

The Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) agreed on the establishment of an ad hoc working group to draft Terms of Reference (ToRs) for possible guidance on addressing the applicability of the Espoo Convention to decisions on the lifetime extension of nuclear power plants. The ad hoc working group is co-chaired by the UK and Germany. The ToRs address 6 topics. Several ad hoc meetings were held in 2019, focusing primarily on the long-term operation of nuclear power plants and the need for an Environmental Impact Assessment. Part

of the discussion was also dedicated to the European Court of Justice judgement, issued in July 2019, concerning the Belgian law on the lifetime extension of nuclear power plants.

FORATOM has been involved in the discussions of the ad hoc working group by participating to the International Workshop in Vienna (2 December 2019), and by submitting an opinion paper to the co-chair of the working group, OECD NEA representatives and EC officials.

## AARHUS CONVENTION

The Aarhus Convention establishes a number of public rights (individuals and associations) with regard to the environment such as public participation and access to justice in economic projects. The Convention provides everyone with the right to receive environmental information that is held by public authorities, the right to participate in the decision-making process and the right to review the procedure and to challenge any public decision which does not comply with the aforementioned rights.

In relation with the third right listed above, communications from individuals or associations can be brought before the Compliance Committee concerning any party's compliance with the Convention. This procedure has been used against two nuclear projects, relating to the lifetime extension of a nuclear power plant and a new build project.

- ▶ In the Netherlands, individuals and associations alleged failure by the Netherlands to comply with its obligations under the Aarhus convention in relation to the lifetime extension of the Borssele Nuclear Power Plant. The Compliance Committee found that the Netherlands failed to comply with the convention and recommended that it take necessary measures. To this end, the Netherlands initiated a legislative process to amend the Nuclear Energy Act.
- ▶ In Hungary, individuals and associations alleged irregularities in the approval of the Paks II project. The Compliance Committee determined the communication to be inadmissible in accordance with paragraphs 20(d) and 21 of the annex to decision I/7 due to a failure to use domestic remedies.

# NUCLEAR INNOVATION, RESEARCH & DEVELOPMENT

During the second half of the year the Commission initiated an intensive co-decision process in order to prepare for the implementation of the Horizon Europe Research & Innovation Programme (2021-2027) with a proposed budget of €100 billion. The process was aimed at shaping the scope and functioning of the European research and innovation investments in the coming years. It included a combination of online consultations as well as a policy conference and exhibition to collect and debate views. The first consultation focused on the 'Strategic Plan' for Horizon Europe, which will be used to guide the work programmes and calls for proposals during Horizon Europe's first four years (2021-2024).

In order to take part in the process and consultations, FORATOM undertook a series of actions. These included the publication of a position paper entitled "[EU Nuclear Research and Innovation: Collaboration with Horizon Europe](#)", participation in the EU R&I days ("Euratom Research for all" session and exhibition), responding to seven online consultations, signing a

joint statement with 93 European associations calling for a more ambitious Horizon Europe and meetings with stakeholders from the Directorate-General for Research and Innovation (DG RTD). The main messages from FORATOM included reasoning and calls for greater synergies between Horizon Europe and Euratom programmes as a means to enable R&I funding in cross cutting enabling projects that would benefit the nuclear sector. The draft update of the Horizon Europe Strategic Plan includes updates that reflect aspects of the FORATOM messages, such as the fact that synergies with Euratom should be enabled and sector coupling R&I for hydrogen production should include low-carbon energy sources and not only renewables as stated previously.

Horizon Europe and the next Euratom programme are expected to be formally progressed by Trilogue and dialogue respectively with an announcement due in mid 2020.



# EU FUNDED PROJECTS



Horizon 2020: The EU's Horizon 2020 research framework programme 2014-2020 has an overall budget of nearly €80 billion. Around €1.6 billion of this is dedicated to EU-funded research on nuclear issues, under the Euratom Treaty. The share of this allocated to nuclear fission and radioprotection indirect actions, i.e. open to nuclear industry participation, is €316 million from 2014-2018. A proposal to extend this to 2020 is in the pipeline.

The Euratom Work Programme for 2018 was published in October 2017 opening a new Call for Proposals with a deadline for submissions of September 2018. The EU budget for this call is €68.8 million, of which approximately €30 million will be dedicated to a new 5-year European Joint Programme on radioactive waste research.

Below is an overview of some of the EU funded projects in which FORATOM is involved.

## RESEARCH & DEVELOPMENT

**SPRINT - SNETP Programming for Research Innovation in Nuclear Technology:** SPRINT provided support to the Sustainable Nuclear Energy Technology Platform (SNETP, see page 31 for more information). The project had four main objectives:

- ▶ Ensuring an inclusive and efficient process for producing strategic roadmaps
- ▶ Improving the 'value proposal' of SNETP for the fission R&D community in Europe
- ▶ Confirming SNETP as a key player within the international energy technology landscape
- ▶ Enhancing the visibility and dialogue of SNETP towards a wider audience

The project was allocated a total budget of €600.000 starting in May 2015 and concluding in May 2019.

**RIMA (Robotics for Inspection and Maintenance):**

FORATOM is actively involved as a partner in the RIMA project, funded under the Horizon 2020 programme, focused on driving innovation in robotics for inspection and maintenance (I&M). FORATOM facilitates the network and works on raising awareness of how the project can support challenges in the nuclear industry. It also facilitates the development of experiments and demonstrations inside the RIMA project and provides guidance to potential participants. The main objective of the project is to reinforce the leadership of Europe in I&M robotics by fostering efficient cooperation in

Europe. FORATOM's role is to bridge the gap between SMEs, within the robotics community, and potential end users within the nuclear industry (licensees, I&M service providers, operators).

The second half of 2019 focused on the implementation and launch of calls for proposals of experimentation and demonstration projects. FORATOM will participate in the evaluation and judging of these proposals in early 2020, and a series of RIMA projects will be subsequently launched for multiple sectors include Nuclear.

## EDUCATION & TRAINING

**ENEN+ - Attract, Retain and Develop New Nuclear Talents Beyond Academic Curricula:**

The second Horizon 2020 call for research proposals under the Euratom Programme, covering the years 2016 and 2017, resulted in 25 proposals being accepted with an EU contribution of €105 million. FORATOM is a partner in one of these projects related to education & training, "ENEN+", which will run for three years from October 2017 with a total budget of €3.2 million. ENEN+'s primary goal is to trigger a revival of interest in careers in the nuclear industry amongst the young generation. It has five main objectives, namely:

- ▶ Attract new talent to a career in the nuclear industry
- ▶ Encourage students to go beyond the academic curricula
- ▶ Increase retention of attracted talents in nuclear careers
- ▶ Involve relevant stakeholders from the nuclear sector within EU and beyond
- ▶ Sustain this revived interest.

As a partner in this project, FORATOM has developed a communications strategy aimed primarily towards both industry and policy makers. It focuses on ensuring that adequate emphasis is placed on attracting, developing and retaining nuclear talent. Furthermore, in October 2019, a joint workshop was co-organised with the ENEN+ partners. The goal of this workshop was to bring together a broad range of 'nuclear experts' covering communications, education and training, from industry, academia and research institutes to identify the best ways of attracting more people to a career in the nuclear sector. The ideas which came out from this workshop are being compiled into a report which will be made available to all together with best practices and useful tools.

**ANNETTE - Advanced Networking for Nuclear Education, Training and Transfer of Expertise:**

This project aims to promote a better coordination of academic and vocational learning initiatives in the nuclear field in Europe, in order to achieve a higher level of networking and cooperation. It includes Continuous Professional Development in nuclear within the framework of a coordinated pan-European effort, making use of e-learning and even Massive Open Online Courses (MOOCs). FORATOM acts as an advisor in relation to existing nuclear courses and improving the efficiency of education and training in the field of nuclear. The project ran for four years from January 2016 with a total budget of €3.18 million and ended at the end of the year.

**ELINDER - European Learning Initiatives for Nuclear Decommissioning and Environmental Remediation:**

The overall aim of the current ELINDER project is to raise the interest of students and professionals and to stimulate careers in the important and emerging field of nuclear decommissioning and environmental remediation, by offering a set of attractive theoretical and practical learning opportunities. The outcome of this project will be translated into the development of a commonly qualified training programme in nuclear decommissioning between seven research facilities. As a partner in this project, FORATOM promotes training and support for ELINDER decommissioning training programme graduates by assisting them in the identification of internship opportunities in industrial enterprises active in nuclear decommissioning.

# EUROPEAN NUCLEAR INSTALLATIONS SAFETY STANDARDS (ENISS)



ENISS represents the nuclear utilities and operating companies from 16 European countries with nuclear plants. ENISS provides the nuclear industry with the platform that it needs to exchange information on new national and European regulatory activities, to express its views and provide expert input on all aspects related to harmonization of safety standards. ENISS is the common channel through which European nuclear license holders interact with WENRA (nuclear regulators), the European Institutions and the International Atomic Energy Agency (IAEA).

Although ENISS is hosted by FORATOM, it enjoys a full autonomy as regards its strategy and priorities, which are discussed, approved and reviewed by its own supervisory bodies.



## WESTERN EUROPEAN NUCLEAR REGULATORS ASSOCIATION (WENRA)

In 2019, ENISS had the opportunity to exchange views with WENRA on their Safety Reference Levels related to ageing management, and leadership and management for safety. ENISS and WENRA also discussed and shared their opinions on the concept of Practical Elimination. WENRA published on 11 November 2019 a report on "Practical Elimination Applied to New NPP Designs".

WENRA held in November 2019 a workshop on the regulatory aspects of nuclear decommissioning.

Around 80 participants from safety authorities, operators, TSOs and international organisations in the field of nuclear decommissioning attended the event. ENISS was invited to deliver a presentation on the practical implementation of a graded approach, including the use of the concepts risk informed and reasonably practicable.

## INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

ENISS provided comments throughout the year to the IAEA Draft Safety Requirements and Safety Guides, addressing the most important issues, namely NPP design and operation, management systems, safety assessment, waste management, decommissioning and radiation protection. ENISS furthermore provided the IAEA with assistance in the technical/consultancy groups and participated, as an observer, in the Agency's Safety Standards Committees (SSCs) and the Nuclear Security Guidance Committee (NSGC).

In the framework of the review of the IAEA Safety Fundamentals, SF-1, ENISS developed a written statement setting forth the grounds and main arguments against a revision of SF-1. The statement was sent to the IAEA and then published on the ENISS website in April 2019.

The IAEA concluded from its review that there is no justification for an immediate revision of SF-1.

## INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION (ICRP)

ENISS participated in the seventh meeting of Senior Representatives of Organisations in Formal Relations with ICRP which took place on 17 September 2019, in Paris, France. This year's meeting discussion focused on two issues, protection of the environment and individualisation of radiological protection.

ENISS also responded to the ICRP consultation on the draft report entitled Radiation Weighting for Reference Animals and Plants.

## ENSREG

The fifth ENSREG conference on nuclear safety took place in Brussels on 6-7 June 2019. The conference featured four sessions covering the following topics: ageing management, decommissioning and waste management, standardisation of supply chain and components obsolescence, and nuclear knowledge management.

ENISS was invited to make a presentation during the session related to ageing management.

It was noted in the presentation that ENISS broadly supports the findings of the first ENSREG Topical Peer Review on Ageing Management, but differences in

design, maintenance and licensing should have been accounted for more appropriately, as well as safety significance. For this reason, ENISS encourages the greater adoption of risk informed decision making. In addition, ENISS expressed its willingness to provide more feedback on the TPR process to maximise future safety benefits.

ENISS also had the opportunity to review the ENSREG 1<sup>st</sup> Topical Peer Review Action Plan, which addresses the four EU-level challenges identified in the ENSREG Topical Peer Review Report.

## EUROPEAN COMMISSION WORKSHOP ON THE IMPLEMENTATION OF ARTICLES 8A-8C OF THE NUCLEAR SAFETY DIRECTIVE

In 2018, a consortium of members from European Technical Safety Organisations Network (ETSON) led by GRS was awarded a contract for a European Commission project on an 'Analysis to support implementation in practice of Articles 8a-8c of Council Directive 2014/87/Euratom'. The process includes, among other things, reviewing relevant international and European guidance documents and assessing the approaches and methodologies set in place at national levels for the implementation of the Safety Directive.

The second workshop on the ETSON study took place on 12-13 November 2019, in Luxembourg. The Workshop was intended to discuss findings and draft recommendations for future activities to support Member States in implementing Articles 8a-8c of Nuclear Safety Directive. ENISS participated in the workshop and presented its views on the principles for developing and implementing safety improvements to existing nuclear power plants.

## POSITION PAPERS

In November 2019, ENISS issued two new position papers, one on the [Defence-in-Depth implementation](#) and the second one on the [principles for developing and implementing safety improvements to existing nuclear power plants](#). ENISS also pursued its task of

drafting a position paper on the application of the concept of Practical Elimination of scenarios. Besides this, ENISS also started developing position papers on other technical issues such as optimisation principle and health risks from exposure to ionizing radiation.



# COMMUNICATIONS AND EVENTS



Communications continues to play an important role at FORATOM, bringing together the technical input and advocacy goals, to ensure a clear and harmonised message from the industry at EU level. FORATOM's communication aims are to:

- ▶ clearly position the association as the voice of the European nuclear industry in Brussels,
- ▶ promote nuclear as part of the solution when it comes to climate change, jobs and growth, and security of energy supply,
- ▶ continue to gain recognition of the value of nuclear in relevant EU policies.

In order to further strengthen the voice and positioning of the industry, FORATOM works closely together with the communication experts from its membership. This allows us to keep them informed of what is happening in Brussels and what our communication needs are, whilst at the same time gaining a better insight into national communication activities. The goal is to ensure coherent and consistent communications across the European nuclear industry.

In conjunction with this, FORATOM cooperates with relevant organisations in and around the EU bubble. This will ensure that our communication actions are in line with the needs and expectations of our stakeholders.

Below is an overview of the various tools developed during the course of 2019 to support FORATOM's advocacy goals.

# FORATOM IN THE NEWS

## Viewpoint: The climate and economic benefits of nuclear power

02 September 2019



The European Union puts it bluntly: We must reduce the level of CO2 emissions and we need to start doing it right now. While some EU Member States are more advanced in achieving their climate and energy goals, others are lagging behind, writes Yves Desbazeille, director general of Foratom.



Their tardiness is often not the result of ill will, but rather caused by the broad scope of challenges which have to be addressed en route to achieving carbon neutrality. The required deep decarbonisation of the energy system, if not done properly, can trigger significant social impacts, for example causing job losses or affecting countries' economies. That's why the EU has to choose the right tools to carry out this process. To this end, nuclear energy is capable of providing both clean electricity and various economic benefits.

## Foratom spells out benefits of long-term operation

15 July 2019



Foratom, the European nuclear trade body, has highlighted the importance of long-term operation (LTO) of the existing fleet of nuclear power plants in a position paper published on 10 July. Ensuring the LTO of the European nuclear fleet will help Europe achieve its climate goals at an affordable cost, it says.



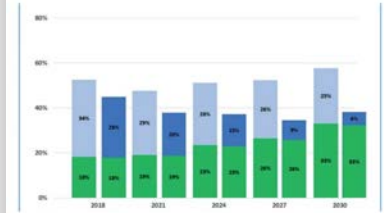
(Image: Pixabay)

LTO is economically advantageous compared to other power sources because it requires a much lower capital investment cost, leading to low investment risks for investors and capital markets, and lower consumer costs, Foratom said. It also reduces the EU's energy import dependency on, primarily, fossil fuels and provides reliability to the grid. In addition, it helps the industry maintain and upgrade the competences of operators and suppliers, which will allow it to prepare for the renewal of the fleet in the future.

### NUCLEAR POLITICS

## Foratom / 'Long-Term Operation Of Reactor Fleet To Help EU Meet Climate Goals At Affordable Cost'

By Kamen Kraev  
10 July 2019



Foratom calculation on the share of low-carbon electricity generation with (light blue) and without (dark blue) LTO and renewables (green).

The long-term operation (LTO) of the domestic nuclear reactor fleet will help the European Union achieve its climate goals at an "affordable cost", while also reducing energy import dependency, Brussels-based industry group Foratom has said.

## Nuclear energy: Powering the economy carbon-free growth, jobs and leadership in innovation

DISCLAIMER: All opinions in this column reflect the views of the author(s), not of EURACTIV.COM Ltd.

Promoted content

By Yves Desbazeille - Director General | FORATOM 25 avr. 2019



### NUCLEAR POLITICS

## Climate Change / Foratom Welcomes Taxonomy Agreement And Urges Level Playing Field For Nuclear

By David Dalton  
18 December 2019



Europe's nuclear energy industry has welcomed an agreement between the European council, parliament and commission on new criteria to determine whether an economic activity is environmentally sustainable and the fact that it does not blacklist nuclear energy.

### DOSSIER « LE NUCLÉAIRE EN EUROPE » 12.05.2019

## 1/10 - Le nucléaire dans l'Europe de demain



Foratom, Europe, Changement climatique, Politique énergétique

Entretien avec Yves Desbazeille, Directeur général de FORATOM

### NUCLEAR POLITICS

## Nuclear Manifesto / 'EU Needs To Invest In Existing And New Plants'

By David Dalton  
26 June 2019



Industry is calling for 100 GW of new nuclear, equivalent to at least 60 reactors



Tilina Tuomela signs the manifesto in Bucharest, Romania, today on behalf of Fortum Power and Heat Oyj.

Meeting the EU's ambition to decarbonise its economy by 2050 will require significant investment in all low-carbon technologies, which means investing in Europe in both the long-term operation of existing

# FORATOM VIEWS



## SOCIAL MEDIA

**FORATOM**  
@FORATOM\_nuclear

Last week #FORATOM organised its annual workshop in #Brussels during which invited experts discussed the @OECD\_NEA's study "The Costs of #Decarbonisation: System Costs with High Shares of #Nuclear & #Renewables".

Check out the pictures: [👇](#) [👇](#) [👇](#)

**FORATOM**  
@FORATOM\_nuclear

#LesEntretiensEuropéens conference: #FORATOM DG @YDesbazeille moderates a panel discussion focused on the importance of developing and maintaining a constructive dialogue between #EU / national / regional decision makers, European nuclear industry, and the public.

2:40 PM · 13 nov. 2019 · Twitter Web App

5 Retweets 9 J'aime

**FORATOM**  
@FORATOM\_nuclear

#FORATOM DG @YDesbazeille moderates a panel session entitled "Outlook for SMRs - the view of the private sector" with high-level speakers representing @Oranogroup, @EDFofficiel, @cez\_group, @VTTFinland, Nuclearelectrica & Fermi Energia.

11:35 AM · 21 oct. 2019 · Twitter Web App

**FORATOM**  
@FORATOM\_nuclear

#ICYMI: In June, #NuclearEuropeLeaders called upon #EU policymakers to work together in order to achieve a decarbonised #Europe by 2050, whilst at the same time maintaining #growth & #jobs. #CleanEnergyEU #ClimateNeutralEU

Find out more: [foratom.org/downloads/nucl...](https://foratom.org/downloads/nucl...)

**FORATOM**  
@FORATOM\_nuclear

#FORATOM calls on @EU\_Commission to acknowledge the critical role which #nuclear has to play under the #SustainableFinanceEU initiative. We strongly believe the decision to not include nuclear at this stage in #TaxonomyEU should be reviewed.

More details: [foratom.org/press-release/...](https://foratom.org/press-release/...)

**FORATOM**  
@FORATOM\_nuclear

Second day of #RiDaysEU is underway. Visit our stand "#Euratom Research for All" and learn more about #nuclear research and innovation.

10:42 AM · 26 sept. 2019 depuis Tour & Taxis · Twitter for iPhone

1 Retweeter 2 J'aime

## SOLUTIONS FOR A 2050 CARBON-FREE EUROPE

On 19 February 2019, FORATOM, ROMATOM and the Romanian Ministry of Energy organised an event under the umbrella of the Romanian Presidency of the Council of the European Union. The goal of the event was to

reflect on how low-carbon technologies can help the European Union achieve its 2050 decarbonisation objectives and what the needs of the industrial sector are when it comes to increased electrification.

## PUBLIC ACCEPTANCE OF NUCLEAR ENERGY

On 27 March 2019, FORATOM and ROSATOM organised together a joint seminar in Brussels entitled "Public Acceptance of Nuclear Energy: Exploring the Benefits of a Broader European Approach to Address the Common Challenge". The main objective of the seminar was to discuss among nuclear communication experts the importance of public acceptance in

shaping nuclear energy's future. It also enabled and exchange of experiences and best practices which can help better prepare for the communication challenges and opportunities the nuclear industry currently faces. The workshop gathered together around 30 communication experts from different parts of Europe.

## NUCLEAR: POWERING THE ECONOMY. CARBON-FREE GROWTH, JOBS AND LEADERSHIP IN INNOVATION

On 25 April 2019, FORATOM organised both a press conference and a public event in Brussels. The goal of these two events was to present the outcomes of the Deloitte "[Economic and Social Impact](#)" report. Not

only does the report highlight the European nuclear industry's contribution to growth and jobs today, it also forecasts its potential future contribution.



## NUCLEAR IN A CHANGING WORLD

On 26 June 2019, FORATOM's first annual conference took place in Bucharest, Romania. The event was organised together with ROMATOM. The nuclear industry's representatives from around the world gathered together to discuss key issues having an impact on the future of nuclear energy in the European

Union, such as: challenges affecting the EU energy sector, the long-term operation of nuclear power plants, as well as ensuring that the industry has access to the skills it needs. Invited speakers included senior officials from the European Commission, high-level industry representatives, think tanks and civil society.

## NUCLEAR NEW BUILD IN FRANCE

On 25 November 2019, FORATOM co-organised a workshop in Brussels together with GIFEN and EDF. During this event, representatives from industry and the Commission discussed the perspectives of nuclear new build in France.

## SYSTEM COSTS IN HIGH-RES ELECTRICITY SYSTEMS

On 12 December 2019, FORATOM organised in Brussels a workshop dedicated to analysing and assessing the costs of the whole power system decarbonisation and future challenges of the electricity market. During the discussion it was made clear that many flexible energy

sources are needed when electricity generation from renewables is low, therefore even though renewables will play a key role, nuclear energy will be still needed as a stable back-up capacity for balancing the system.



NUCLEAR IN A CHANGING WORLD - 26 JUNE 2019





# INTERNATIONAL PRESENCE & ALLIANCES

FORATOM is represented at meetings of a number of key nuclear-related organisations and alliances, including the European Nuclear Safety Regulators' Group (ENSREG), Sustainable Nuclear Energy Technology Platform (SNETP), European Nuclear Society (ENS), European Human Resources Observatory for Nuclear (EHRO-N), Implementing Geological Disposal of Radioactive Waste Technology Platform (IGDTP), International Atomic Energy Agency (IAEA), and OECD/Nuclear Energy Agency (NEA).

## 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 European Commission on priorities for EU funding. It underlines the importance of the research dimension of the nuclear sector, the need to maintain high levels of safety, the importance of retaining competences and know-how and the increasingly competitive nature of this global industry.

FORATOM continued to participate actively in the Platform's management and also as a partner in the EU-funded SPRINT project supporting SNETP. This included participation in the SNETP's Governing Board and Executive Committee meetings and a combined SNETP Secretariat and SPRINT project consortium meeting.

# INTERNATIONAL FORUM ON ENHANCING A SUSTAINABLE NUCLEAR SUPPLY CHAIN

16th IAEA-FORATOM joint event on Management Systems

## CALL FOR ABSTRACT

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Helsinki, Finland

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