



INSTITUTE OF RESEARCH  
& TRAINING ON  
EUROPEAN AFFAIRS

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## Industry, Research and Energy (ITRE) Committee



**EUROPA.S.**

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## STUDY GUIDE

**Topic:** The Role of Nuclear Energy  
within the Strategic Framework of the  
Energy Union: Risks and Opportunities

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## **Greeting of the Board**

*Distinguished Members of the European Parliament,*

*It is our honor to welcome you all in the Industry, Research and Energy Committee (ITRE) of the European Parliament within the context of EUropa.S 2023. We would like to express our gratitude for opting to join this Committee and we assure you that we will do everything we can to guarantee you a memorable experience by providing you support, and assistance whenever needed.*

*In this year’s Conference we will devote our time discussing a crucial issue of the European Union, namely “The Role of Nuclear Energy within the Strategic Framework of the Energy Union: Risks and Opportunities”. We hope that you find our topic as interesting and thought-provoking as we do, and we look forward to seeing your contribution on the matter, regarding its controversial nature. Forming this Study Guide, we aimed to sufficiently cover and explain to you the most important aspects of our topic, in order to provide you with a stable basis for your research. We should emphasize, nonetheless, that you are required to conduct additional independent research, particularly concerning your nation’s position on the matter at hand.*

*Also, please keep in mind that the information included in the present study guide covers the developments around the topic until the 16th of December 2022, when it was written. Subsequently, you shall also beware of potential updates regarding our topic area until the course of the conference.*

*Last but not least, we would like to encourage you to reach out to us if any question about our committee, our subject, or the method to be followed arises. In light of the foregoing, we respectfully request that you adhere to the dates to enable us to offer you any necessary support.*

*Sincerely yours,*

*The Board of ITRE Committee,*

## **Introduction to ITRE Committee**

The European Parliament is one of the EU’s basic institutional bodies. It was founded in 1952 as the Common Assembly of the European Coal and Steel Community and received its current name in 1962. It has three roles: legislative, supervisory and budgetary. As a legislative body, it passes EU law together with the Council of the European Union based on the proposals of the European Commission. As a supervisory body, it puts other EU institutions under democratic scrutiny, and as a budgetary body, it votes upon the EU budget together with the European Council. Lastly, it is a directly elected body with elections held every 5 years. The Plenary session is supported by 20 specialized committees which instruct legislative proposals with reports<sup>1</sup>.

The Industry, Research and Energy Committee of the European Parliament legislates on several of the most important policy areas of the European Union, being responsible for industrial policy, EU research and innovation policy, space policy, the application of new technologies and energy policy<sup>2</sup>.

The role of ITRE received a crucial status after the energy crisis outbreak. While EU is moving towards the creation of the Energy Union, ITRE’s action is being linked to every single goal set by the EU Clean Energy Package. Specifically, the diversification of energy resources, the creation of an internal energy market without technical barriers, the improvement of energy efficiency, the protection of workers in the energy sector, the optimization of research in this domain, as well as the decarbonization of the economy are concluded in ITRE’s responsibilities<sup>3</sup>.

Concerning the use of nuclear power as an energy source, ITRE promotes the scientific research and observation of the positive and negative effects of nuclear power. It focuses on the strengthening of protection around the utilization of nuclear energy, and most importantly tries to find ways for the safe, successful, and profitable integration of the nuclear power in the EU’s energy system.

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<sup>1</sup> European Union. *European Parliament*. Available at: [https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/institutions-and-bodies-profiles/european-parliament\\_en#further-information](https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/institutions-and-bodies-profiles/european-parliament_en#further-information) (Accessed: 29/11/2022)

<sup>2</sup> European Parliament Committees. *ITRE*. Available at: <https://www.europarl.europa.eu/committees/en/itre/about> (Accessed: 29/11/2022)

<sup>3</sup> European Parliamentary Research Center. *Accelerating the deployment of renewable energy during the crisis*. Available at: <https://epthinktank.eu/2022/11/22/accelerating-the-deployment-of-renewable-energy-during-the-crisis/> (Accessed: 29/11/22)

## **Introduction To the Topic Area**

Under the worsening circumstances created by the environmental and energy crises, EU is obliged to take actions which can secure its future. The Energy Union is long-held vision of the European Union, that since 2015 has been transformed into a detailed strategy for independence and empowerment. In this context, nuclear power represents an alternative factor which can maximize EU’s energy autonomy and lead to sustainable growth.

The process towards the Energy Union was accelerated after Russia’s invasion in Ukraine in 2022, when the relations between the EU and the Russian Federation started to cool off. The energy dependence of EU over Russian gas and oil is undoubtedly high, therefore EU is taking fast turns towards the internal production of energy and the creation of a safe and relatively stable internal energy market. In this process, nuclear power plays an important role, because unlikely the renewables sources of energy, such as solar and wind power, nuclear is abundant, reliable, and affordable.

Nevertheless, the use of nuclear power is hiding risks. The harmful impact of radiation, which is produced during the processing of nuclear power, along with the high scientific specialization needed for its use, are inhibitory factors for certain Member States of the EU. Those countries decline the inclusion of nuclear power in the energy mix. As a result, the dichotomies over nuclear power are leading to a political divide within the EU.

Consequently, the discussions concerning the completion of the Energy Union bring nuclear power in the forefront. The Member States are now charged with the responsibility to examine not only the risks but also the opportunities which nuclear power offers. If EU decides to rely on nuclear power, a well-structured strategic plan is needed in order to give the directive lines towards the expansion of the EU’s nuclear industry.

### ***Legal Framework***

#### *EU Clean Energy Package*

The Clean Energy for all Europeans Package is the latest update in the European energy policy framework, aiming to facilitate a clean energy

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transition and the implementation of the Energy Union strategy goals<sup>4</sup>. It consists of eight new rules, which cover five key dimensions<sup>5</sup>:

- **Security, solidarity and trust** - diversifying Europe's sources of energy and ensuring energy security through solidarity and cooperation between EU countries.
- **A fully integrated internal energy market**- enabling the free flow of energy through the EU through adequate infrastructure and without technical or regulatory barriers.
- **Energy efficiency** - improved energy efficiency will reduce dependence on energy imports, lower emissions, and drive jobs and growth.
- **Climate action, decarbonising the economy** - the EU is committed to a quick ratification of the Paris Agreement and to retaining its leadership in the area of renewable energy.
- **Research, innovation and competitiveness** - supporting breakthroughs in low-carbon and clean energy technologies by prioritizing research and innovation to drive the energy transition and improve competitiveness.

In this context, EU lawmakers voted to label investments in nuclear power plants as ‘green’, on the condition that they switch to accident tolerant fuels from 2025 and set out plans for the final storage of radioactive waste from 2050<sup>6</sup>.

Under this strategy, each EU country is required to establish integrated 10-year national energy and climate plans (NECPs) for 2021-30. The NECPs outline how EU countries will achieve their respective targets on all 5 dimensions of the energy union, including a longer-term view towards 2050.

### Euratom Treaty

The Euratom Treaty was signed in 1957 at Rome, establishing the European Atomic Energy Community (EAEC)<sup>7</sup>. This Treaty is of highly importance because its main aim is to promote the peaceful use of nuclear power. As well as contributing to the development of nuclear power as an energy

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<sup>4</sup> European Commission (2019). *Clean energy for all Europeans package*. Available at:

[https://energy.ec.europa.eu/topics/energy-strategy/clean-energy-all-europeans-package\\_en](https://energy.ec.europa.eu/topics/energy-strategy/clean-energy-all-europeans-package_en) (Accessed: 08/12/2022).

<sup>5</sup> European Commission (2015). *Energy Union*. Available at: [https://energy.ec.europa.eu/topics/energy-strategy/energy-union\\_en](https://energy.ec.europa.eu/topics/energy-strategy/energy-union_en) (Accessed: 08/12/2022).

<sup>6</sup> European Parliament (2022). *Taxonomy: MEPs do not object to inclusion of gas and nuclear activities*. Available at: <https://www.europarl.europa.eu/news/en/press-room/20220701IPR34365/taxonomy-meps-do-not-object-to-inclusion-of-gas-and-nuclear-activities> (Accessed: 08/12/2022).

<sup>7</sup> European Parliament. *Euratom Treaty*. Available at: <https://www.europarl.europa.eu/about-parliament/en/in-the-past/the-parliament-and-the-treaties/euratom-treaty> (Accessed: 01/12/2022)

source in the Member States, the Euratom Treaty also seeks to ensure high levels of protection for workers and citizens by sharing experience and information and by promoting research into nuclear safety<sup>8</sup>.

The current basic safety standards are laid down in the included Basic Safety Standards Directive (2013/59/Euratom). Specifically, this directive establishes consistent basic safety regulations for the protection of workers', members of the general public's, and patients' health. Moreover, it establishes clear limitations and allows little discretionary margin. The directive applies to both planned and emergency exposure circumstances. The rules for emergency preparedness and response have been increased to reflect the lessons learned from the Fukushima disaster<sup>9</sup>.

After the Merger Treaty (1967), Euratom shares the same institutions and executive bodies with the EU. Although, the sharing of power among them it's not the same. The Parliament, in particular, has less control over Euratom, with only consultation powers (**no co-decision**). The Euratom Supply Agency, a specific Euratom body, has legal personality and financial autonomy and is under the supervision of the Commission.

This panel presents the eight aims of EU, promoted by the articles of Euratom Treaty:

EURATOM TREATY	
AREAS	AIMS
<b>Research</b>	Cooperation in research and exchange of technical information - a Joint Research Centre is established.
<b>Safety</b>	Establishment of uniform safety standards to protect the health of workers and of the general public and ensure that they are applied.
<b>Investment</b>	Facilitation investment, particularly by encouraging joint ventures. The establishment of the basic installations is necessary for the development of nuclear energy.

<sup>8</sup> European Nuclear Safety Regulators Group (ENSREG). Euratom Treaty. Available at: [www.ensreg.eu/nuclear-safety-regulation/eu-instruments](http://www.ensreg.eu/nuclear-safety-regulation/eu-instruments) (Accessed: 01/12/2022)

<sup>9</sup> European Parliament (ITRE Committee). *Fact Sheets on the European Union: Nuclear Energy*. Available at: <https://www.europarl.europa.eu/factsheets/en/sheet/62/nuclear-energy> (Accessed: 01/12/2022)

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<b>Supply</b>	Formulation of a common supply policy which ensures that all users in the Community (now the EU) receive a regular and equitable supply of ores and nuclear fuels — a Euratom Supply Agency is established.
<b>Control</b>	Non-military use of nuclear materials. Safeguarding is ensured by dedicated inspectors, who carry out physical and accounting checks in all nuclear installations in the Community.
<b>Ownership of materials</b>	Exercise a right of ownership of some special fissile materials (fissile materials are composed of atoms that can be split by neutrons in a self-sustaining chain-reaction to release enormous amounts of energy).
<b>Common Market</b>	Creation of a Common Market which allows: use of specialized materials and equipment free movement of capital for investment in the field of nuclear energy freedom of employment for specialists
<b>Peaceful Use</b>	Strengthening of the relations with other countries and International Organizations in order to foster progress in the peaceful uses of nuclear energy.

(Source of information: <https://eur-lex.europa.eu/EN/legal-content/summary/treaty-on-the-european-atomic-energy-community-euratom.html>)

Since 1967 Euratom also shares a single administrative budget with the EU institutions<sup>10</sup>.

### The Nuclear Safety Directive

Worldwide, the safety of nuclear installations is governed by national legislation and the international conventions. Within the EU, this is being supplemented by an EU Directive. The Nuclear Safety Directive (2009/71/EURATOM) establishing a framework for the nuclear safety of nuclear installations, adopted by the Council of the European Union on 25

<sup>10</sup> The R&D expenditures under the Euratom Treaty are however kept under a separate budget.



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June 2009, provides binding legal force to the main international nuclear safety principles<sup>11</sup>.

After the Fukushima accident in 2011, the EU took steps towards the strengthening of the nuclear protection system by updating the **Nuclear Safety Directive**<sup>12</sup>. The amended Directive, which came into force in 2014 and which had to be transposed into Member States' legislation by 2017, empowered the role and independence of the national regulatory authority in each Member State which choose to include nuclear in its energy mix. Furthermore, it gave emphasis in the accident prevention and the avoidance of significant radioactive releases. The promotion of a European safety system based on regular topical peer reviews and the increase of transparency on nuclear safety matters (information and cooperation obligations and involvement of the public) were also included in the main purposes of the amendment. The reformed Nuclear Safety Directive enhanced accident management and on-site emergency preparedness and response arrangements and procedures, while setting a nuclear safety system based on regular safety reassessments of nuclear installations<sup>13</sup>.

For the implementation of the new measures, on 14 June 2021, the new **European Instrument for International Nuclear Safety Cooperation** entered into force with a financial envelope of EUR 300 million for 2021-2027<sup>14,15</sup>. The Instrument was proposed by the European Commission on the basis of the Euratom Treaty.

### **Other important Directives**

The regulation for the transport of the radioactive substances and the safeguarding of nuclear materials are extremely important for the creation of an Energy Union in which nuclear power is concluded.

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<sup>11</sup> ENSREG. *Nuclear safety directive*. Available at: <https://www.ensreg.eu/nuclear-safety-regulation/eu-instruments/Nuclear-Safety-Directive> (Accessed: 02/12/2022)

<sup>12</sup> European Parliament (ITRE Committee). *Fact Sheets on the European Union: Nuclear Energy*. Available at: <https://www.europarl.europa.eu/factsheets/en/sheet/62/nuclear-energy> (Accessed: 02/12/2022)

<sup>13</sup> EUR-Lex. *Consolidated text: Council Directive 2009/71/ Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02009L0071-20140814> (Accessed: 02/12/2022)

<sup>14</sup> European Commission. *European Instrument for International Nuclear Safety Cooperation - Performance*. Available at: [https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-overview/european-instrument-international-nuclear-safety-cooperation-performance\\_en#programme-statement](https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-overview/european-instrument-international-nuclear-safety-cooperation-performance_en#programme-statement) (Accessed: 02/12/2022)

<sup>15</sup> European Parliament (ITRE Committee). *Fact Sheets on the European Union: Nuclear Energy*. Available at: <https://www.europarl.europa.eu/factsheets/en/sheet/62/nuclear-energy> (Accessed: 02/12/2022)

With the EU's **Directive on Shipments of Radioactive Waste and Spent Fuel** (2006/117/Euratom)<sup>16</sup>, the transportation of radioactive materials receives a strict regulatory frame. The public protection from such shipments is the main goal and thus, according to article 20, the Member States must report every three years to the Commission on the implementation of the directive.

Numerous regulations have been enacted and amended to establish a system of safeguards which ensure that nuclear material is used only for the purposes declared by its users and that international obligations are met. **Commission Regulation (Euratom) No 302/2005** is safeguarding the entire nuclear fuel cycle, from extraction of nuclear material in Member States to imports from non-EU countries to exports from the EU<sup>17</sup>.

The **Waste Framework Directive**<sup>18</sup> plays also a vital role because it sets the basic concepts and definitions related to waste management, including definitions of waste, recycling and recovery. It includes additional obligations for labelling, recording, monitoring and control from waste generation to final disposal or recovery. It also prohibits the mixing of hazardous waste with other categories of hazardous waste and with non-hazardous waste.

### **Regulatory Bodies**

The transnational cooperation is the corner stone of EU's efforts to build a safe network of energy supply, efficiency, and safety. Inside the EU borders CEER, ACER, ENSREG and WENRA are working towards the safeguarding of the peaceful, careful and effective use of nuclear power<sup>19</sup>.

### Council of European Energy Regulators – CEER

CEER is the voice of Europe's national energy regulators at EU and international level. Through CEER, the national regulators cooperate and exchange information and best practice. Its main pursuit is to create a single,

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<sup>16</sup> European Commission. *Transport of radioactive materials*. Available at: [https://energy.ec.europa.eu/topics/nuclear-energy/radiation-protection/transport-radioactive-materials\\_en](https://energy.ec.europa.eu/topics/nuclear-energy/radiation-protection/transport-radioactive-materials_en) (Accessed: 02/12/2022)

<sup>17</sup> European Parliament (ITRE Committee). *Fact Sheets on the European Union: Nuclear Energy*. Available at: <https://www.europarl.europa.eu/factsheets/en/sheet/62/nuclear-energy> (Accessed: 02/12/2022)

<sup>18</sup> European Commission. *Waste Framework Directive*. Available at: [https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive\\_en](https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en) (Accessed at: 03/12/2022)

<sup>19</sup> World Nuclear Association. *Nuclear Power in the European Union*. Available at: <https://world-nuclear.org/information-library/country-profiles/others/european-union.aspx> (Accessed: 03/12/2022)

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competitive, efficient and sustainable internal market for gas and electricity in Europe. Additionally, CEER holds a membership in the International Confederation of Energy Regulators (ICER) which brings together similar associations from across the globe including NARUC (America), ERRA (Central/Eastern Europe) and MEDREG (the Mediterranean region)<sup>20</sup>. Its seat is in Brussels, Belgium.

*Agency for the Cooperation of Energy Regulators – ACER*

ACER receives the support of CEER, thus their function is highly linked. It is a body with legal personality. ACER plays a key role in the integration of the EU's markets in electricity and natural gas, providing a framework at EU level for national regulators to cooperate. Furthermore, it assists national regulatory authorities in performing their regulatory function at European level and, where necessary, coordinates their work<sup>21</sup>. ACER's clarity and regulatory certainty are the key factors of its success. Its seat is in Ljubljana, Slovenia<sup>22</sup>.

*European Nuclear Safety Regulators Group – ENSREG*

ENSREG is an independent advisory group of experts. It is composed of senior officials from the national nuclear safety, radioactive waste safety or radiation protection regulatory authorities and senior civil servants with competence in these fields from all Member States in the European Union and representatives of the European Commission. ENSREG's role is to help to establish the conditions for continuous improvement and to reach a common understanding in the areas of nuclear safety and radioactive waste management<sup>23</sup>.

*Western European Nuclear Association Group – WENRA*

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<sup>20</sup> CEER. *About the Council of European Energy Regulators*. Available at: [https://www.ceer.eu/ceer\\_about](https://www.ceer.eu/ceer_about) (Accessed: 03/12/2022)

<sup>21</sup> European Union. *Agency for the Cooperation of Energy Regulators (ACER)*. Available at: [https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/institutions-and-bodies-profiles/agency-cooperation-energy-regulators-acer\\_en](https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/institutions-and-bodies-profiles/agency-cooperation-energy-regulators-acer_en) (Accessed: 03/12/2022)

<sup>22</sup> Publications Office of the European Union. *EU Who Is Who*. Available at: <https://op.europa.eu/en/web/who-is-who/organization/-/organization/ACER/ACER> (Accessed: 03/12/2022)

<sup>23</sup> ENSREG. *European Nuclear Safety Regulators Group*. Available at: <https://www.ensreg.eu/> (Accessed: 03/12/2022)

WENRA is an independent association created by the head regulatory bodies in the European Union and Switzerland to develop a common approach to nuclear safety and to provide an independent capability to examine nuclear safety in applicant countries.<sup>24</sup> Most of the EU’s Member States take part in WENRA, either as members or observers. The Russian Federation and Canada are associated members. The official publications of WENRA are important because they examine the progress made in the nuclear safety system not only according to the EU’s criteria but also based on the reports of the International Atomic Energy Agency (IAEA)<sup>25</sup>.

## Historical Background

The issue of nuclear power has been with the EU since the very beginning of the nuclear age. Being actively involved in the Manhattan Project, French and British scientists were able to share with their colleagues their scientific knowledge after the end of WW2<sup>26</sup>. Since then, many European countries have shown great interest – and have acted accordingly – in acquiring or developing themselves nuclear capabilities. In 1957 the EURATOM (European Atomic Energy Community) was established by one of the Treaties of Rome, with the purpose of “the speedy establishment and growth of nuclear industries” and therefore its main goal became to establish a common market for the development and the peaceful use of nuclear energy within its members<sup>27</sup>.

Since then, the EU’s ‘fleet’ of operating nuclear units initially increased, reaching an all-time high in 1989, with 136 operating nuclear reactors (Figure 1). What seems to have played a crucial role in this phenomenal ‘construction boom’ between<sup>28</sup> the years 1975-1989, is the Oil Crisis in 1973, which resulted in an unprecedented increase in Oil prices and therefore forced the whole world to search for alternative sources of energy. Nuclear then seemed to be a viable and reliable option.

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<sup>24</sup> WENRA. WENRA’s Mission. Available at: <https://www.wenra.eu/about> (Accessed: 03/12/2022)

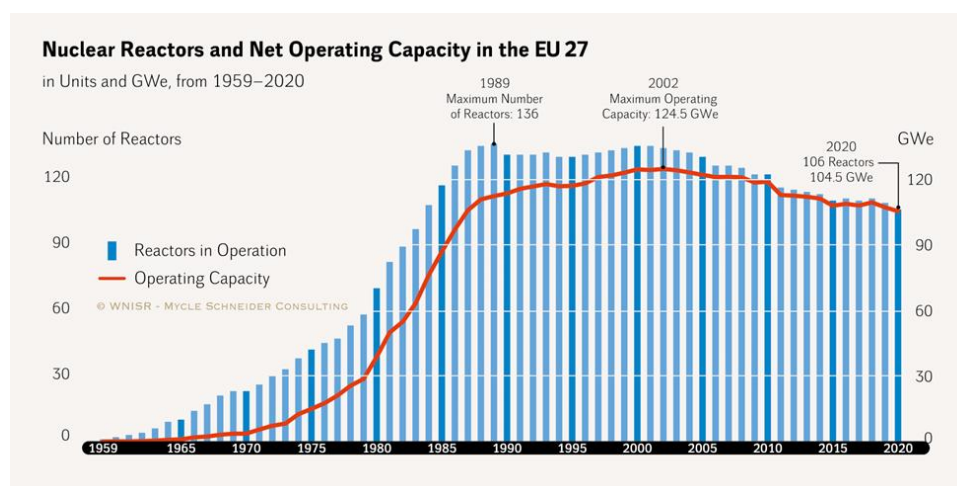
<sup>25</sup> International Atomic Energy Agency. *History*. Available at: <https://www.iaea.org/about/overview/history> (Accessed: 03/12/2022)

<sup>26</sup> Nuclear Power in the European Union <https://eu.boell.org/en/2021/04/26/nuclear-power-european-union> (Accessed: 04/12/22)

<sup>27</sup> Euratom Treaty. Available at: <https://www.europarl.europa.eu/about-parliament/en/in-the-past/the-parliament-and-the-treaties/euratom-treaty> (Accessed 05/12/22)

<sup>28</sup> Eurostat, *Nuclear energy statistics* ( [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Nuclear\\_energy\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Nuclear_energy_statistics) ) (Accessed: 05/12/2022)

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1 Source: <https://eu.boell.org/sites/default/files/2021-04/MS%20Illustration%201.png>

However, as the graph indicates, the region has not seen any significant nuclear infrastructure building activity since the 80s. Only 14 reactors were started up over the past 30 years. One key-event that might have led to what seems to have been a decrease of the interest Europeans have shown towards nuclear capacities is the Chernobyl Nuclear Accident which occurred in 1986. This event showed the dangers that a nuclear accident might lurk and subsequently contributed to the decline of the nuclear industry in the EU. Since the disaster, only there have been only 4 construction starts in the western part of the EU, the majority of which have had to deal with industrial incompetence and a financial fiasco<sup>29</sup>.

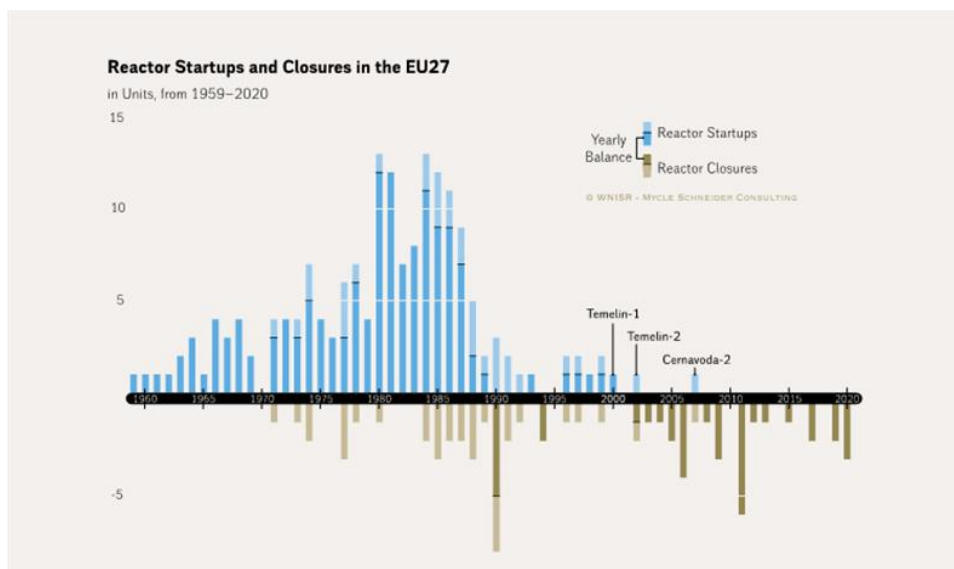
In 2020, under the effect of another nuclear disaster, which this time occurred in Fukushima, Japan in 2011, there were 106 operating reactors in the EU, all of which were -and still are- outdated. They produced a total of 104.5 GWe. It important to mention the tendency of multiple European States in the last years to shut-down their nuclear reactors. Indicatively France<sup>30</sup>, one of the most involved in nuclear activities member of the Union, shut down 14 reactors in 2020, while some others are functioning ineffectively and are underproducing. Similarly, Germany<sup>31</sup>, which had 6 reactors, shut down 3 of them in 2021.

<sup>29</sup> Nuclear in the EU Nuclear construction: Little and late (<https://eu.boell.org/en/2021/04/26/nuclear-power-european-union>) (Accessed 5/12/22)

<sup>30</sup> Nuclear power in the EU, Nuclear power in France (<https://world-nuclear.org/information-library/country-profiles/countries-a-f/france.aspx>) (Accessed 5/12/22)

<sup>31</sup> Nuclear power in the EU, Nuclear power in Germany (<https://world-nuclear.org/information-library/country-profiles/countries-g-n/germany.aspx>) (Accessed 5/12/22)

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2Source: <https://eu.boell.org/sites/default/files/2021-04/MS%20Illustration%202.png>

The EU, now facing what possibly is the biggest energy crisis in its history, has made efforts to promote the use of renewable sources of energy and at the same time, re-introduce the use of nuclear energy among its member states. In February 2022, just before the beginning of the Russo-Ukrainian War, the Complementary Climate Delegated Act to accelerate decarbonisation was published<sup>32</sup>. Among others, it includes nuclear energy production in the activities covered by the taxonomy, and therefore marks the efforts to a possible ‘nuclear-energy renaissance’ within the EU.

Currently, 13 EU countries have operational nuclear reactors: Belgium, Bulgaria, Czechia, Germany, Spain, France, Hungary, the Netherlands, Romania, Slovenia, Slovakia, Finland and Sweden<sup>33</sup>.

## Discussion

### ***Nuclear Energy as key-factor for energy independence and sustainability***

*Internal production: the key to independence from Russian fossil fuels*

<sup>32</sup> European Commission, *EU taxonomy: Complementary Climate Delegated Act to accelerate decarbonisation*, Available at: [https://finance.ec.europa.eu/publications/eu-taxonomy-complementary-climate-delegated-act-accelerate-decarbonisation\\_en](https://finance.ec.europa.eu/publications/eu-taxonomy-complementary-climate-delegated-act-accelerate-decarbonisation_en) (Accessed: 4/12/22)

<sup>33</sup> European Nuclear society, *Nuclear power plants in Europe*. Available at: <https://www.euronuclear.org/glossary/nuclear-power-plants-in-europe/> (Accessed: 06/12/22)

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Energy is the commodity that fuels the economy. The EU's prosperity and security depend on a stable and affordable energy supply. Before 2014, the imports of Russian fossil fuels, natural gas and oil represented almost 50% of EU's energy supply. Even though the percentage of reliance was decreased in 2022, when the Russian-Ukrainian War started, the dependence from Russia remained high. The danger of energy cut-out and the surge in energy prices obligated EU to form a detailed independence strategy<sup>34</sup>.

The European nuclear industry role is vital to this strategy because it increases the indigenous energy production while decreasing the dependence upon external suppliers. According to the World Nuclear Association, EU nuclear industry has technological leadership on the whole chain, including enrichment and reprocessing of nuclear fuel<sup>35</sup>. The European Commission has stated that EU must presume upon this advantage. Specifically, the EC stated that the Euratom Supply Agency can be responsible for ensuring a diverse supply of nuclear fuel, both for the EU's current fleet of nuclear power plants and for those that are due to be built. Uranium, even though imported, represents a much lower effective dependence on external suppliers than coal or gas, since significant reserves can easily be held. In this way, nuclear power is therefore classified as an indigenous production which can lead EU to independence.

Today, about half of EU countries generate nuclear power (see picture). France has the most operable nuclear reactors, followed by Belgium and Spain. These three countries could boost the power generation of existing reactors relatively quickly because most reactors do not normally run at full capacity<sup>36</sup>.

It must be pointed out that the war in Ukraine did not drive to a bloc-wide turn toward nuclear power. Instead, a new debate has emerged. The countries in favor of developing nuclear power, such as France, Finland, and Poland, believe it is critical for the transition away from coal and other fossil fuels, while Germany and other like-minded countries oppose it, citing the dangers of radioactive waste. In other words, the dash to find ready

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<sup>34</sup> European Commission. *In focus: Reducing the EU's dependence on imported fossil fuels*. Available at: [https://commission.europa.eu/news/focus-reducing-eus-dependence-imported-fossil-fuels-2022-04-20\\_en](https://commission.europa.eu/news/focus-reducing-eus-dependence-imported-fossil-fuels-2022-04-20_en) (Accessed: 04/12/2022)

<sup>35</sup> World Nuclear Association. *Nuclear Power in the European Union*. Available at: <https://world-nuclear.org/information-library/country-profiles/others/european-union.aspx> (Accessed: 04/12/2022)

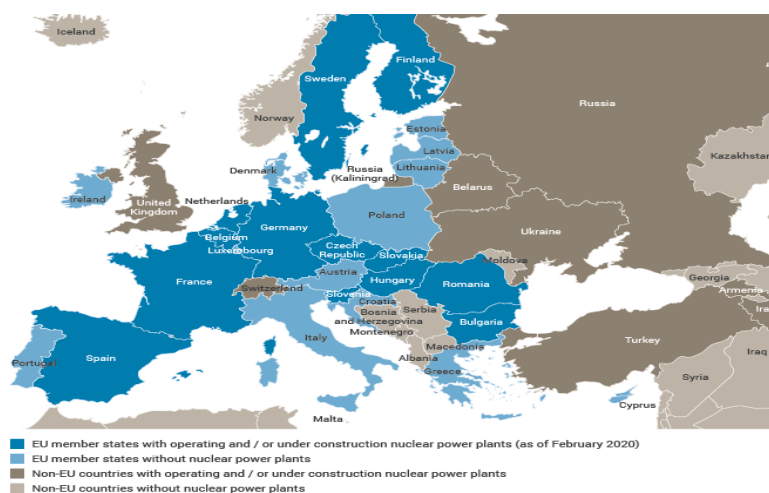
<sup>36</sup> Council on Foreign Relations. *Could Nuclear Power Cut Europe's Dependence on Russian Energy?* Available at: <https://www.cfr.org/in-brief/could-nuclear-power-cut-europes-dependence-russian-energy> (Accessed: 04/12/2022)

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alternatives to Russian fuel has magnified a political divide in Europe over nuclear power<sup>37</sup>.

*An affordable solution for alternative production of electricity – Economics of Nuclear Power*

In order to evaluate the efficiency of a generating plant in relation with the economics of such an activity -and therefore be able to decide on whether a certain type of energy production is more viable- the most useful tool is the Levelized Cost of Electricity (LCOE). The LCOE is the total cost needed to build generator and start its activity divided with the total electricity output produced.<sup>38</sup>



<sup>35</sup>Source: <https://www.world-nuclear.org/information-library/country-profiles/others/european-union.aspx>

Therefore, it is important to mention (a) the different types of cost of producing nuclear energy and (b) some statistics regarding the electricity output of nuclear power in the European Union over the last years.

- (a) There are 4 main ‘types’ of cost which relate to the production of nuclear energy: Capital cost, Plant operating cost, external cost and other cost. Capital costs mainly consists of the funds needed to manufacture the reactor and all the relevant infrastructure, start its functioning, etc. The Plant operating cost is the cost which results from the operation of the reactor (such as fuel cost). The external cost regards the cost of the nuclear production on the society, so it is usually minimal- that, however,

<sup>37</sup> New York Times. *Nuclear Power Could Help Europe Cut Its Russia Ties, but Not for Years*. Available at: <https://www.nytimes.com/2022/04/26/business/russia-nuclear-power-europe.html> (Accessed: 04/12/2022)

<sup>38</sup>World Nuclear Association. *Nuclear Power Economics*. Available at: <https://world-nuclear.org/information-library/economic-aspects/economics-of-nuclear-power.aspx> (Accessed:11/12/22)



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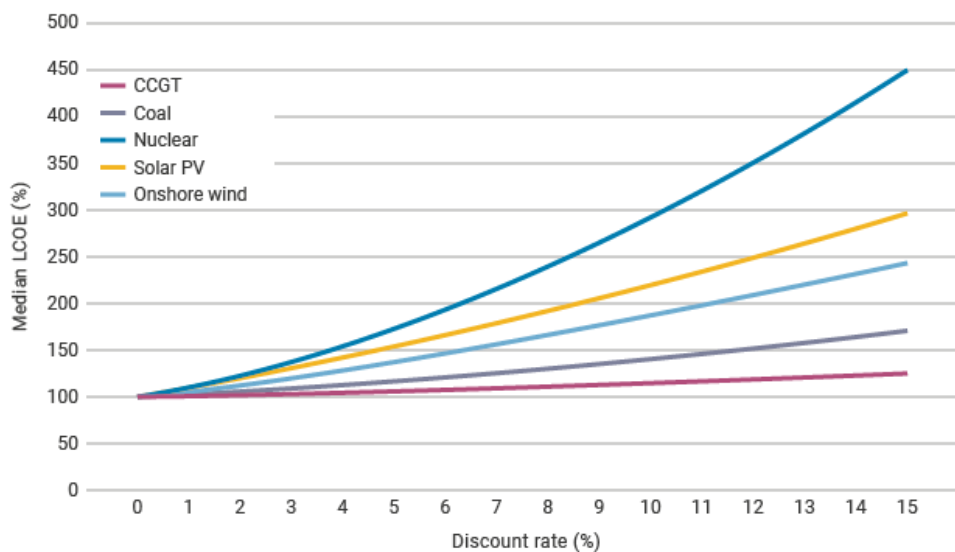
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is not the case in the unfortunate event of a nuclear accident. Other costs mainly have to do with taxation.<sup>39</sup>

(b) In 2020 the EU produced circa 18.7% less nuclear heat than in 2011 (tons of oil equivalent). More specifically the Union produced in 2020 175 thousand TOE. Nuclear plants generated roughly 24.6% of the electricity within the EU in 2020.<sup>40</sup> Production is decreasing.

The effectiveness of producing nuclear energy in the EU depends on whether the long run energy outputs of the existing (and maybe also the future) nuclear reactors will cover the costs of this particular activity. The graph below shows the relation between the discount rate of energy production and the LCOE for different technologies (%).

It is visible that theoretically speaking, a LCOE mainly associated with nuclear energy, eventually produces an increase in the discount rate of the energy production- and therefore is more effective and profitable. What is crucial and should be examined is the effect of external factors (such as taxation costs) in the electricity markets. It is a fact that some policies might impose subsidies on other sources of energy, and subsequently producing nuclear energy might prove to be more expensive.



<sup>4</sup>Source: <https://world-nuclear.org/getmedia/ba4149cb-253b-4478-9cc7-3624937878ee/Interest-at-different-discount-rates.png.aspx>

<sup>39</sup> Economics of Nuclear Power, *Assessing the costs of nuclear energy*  
 Available at: <https://world-nuclear.org/information-library/economic-aspects/economics-of-nuclear-power.aspx#ECSArticleLink0> (Accessed: 11/12/22)

<sup>40</sup> Eurostat. *Nuclear energy statistics*. Available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Nuclear\\_energy\\_statistics#Nuclear\\_heat\\_and\\_gross\\_electricity\\_production](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Nuclear_energy_statistics#Nuclear_heat_and_gross_electricity_production) (Accessed: 10/12/22)

*Moving towards the goal of decarbonization*

The climate action and the decarbonization of the economy is one of the five goals set by the EU Clean Energy Package within the strategic framework of the Energy Union. Of all low carbon energy sources, nuclear power is one of the few that can generate electricity, heat & hydrogen, and therefore it should be considered as a solution to climate. Currently, nuclear power generates almost half of the EU’s low-carbon electricity change<sup>41</sup>.

Nevertheless, nuclear power can play a critical role in decarbonizing sectors beyond electricity, for example by producing cost-competitive, low-carbon hydrogen, industrial process heat, and water desalination to meet decarbonization goals, air quality standards, and clean water needs<sup>42</sup>. Many innovative nuclear technologies, such as **small modular reactors (SMRs)** and advanced nuclear reactors, are providing plenty of options.

Nuclear is an abundant, reliable, affordable, and clean energy source that complements renewables which are not always available, such as solar and wind energy. Its small land-use, low material-dependency, reliability, and abundance allow it to be integrated with an increasing supply of intermittent renewables to deliver efficient, secure, affordable clean energy systems<sup>43</sup>.

In other words, other low carbon energy technologies are expected to deliver the bulk of decarbonization, in particular variable renewable energy technologies (including solar and wind) which are likely to dominate the electricity mix, as well as energy storage technologies (for example, batteries) and other low carbon fuels such as hydrogen. Nuclear power, while playing a more modest role, can however help complement and integrate the expected large shares of renewable generation by ensuring energy supply reliability and dispatchability. Combining nuclear energy and renewable energy sources can also ensure a more rapid transition: nuclear power’s relatively low material intensity means that it is unlikely to face bottlenecks in the supply of critical minerals that may hamper the deployment of other low carbon options<sup>44</sup>. This underlines the importance

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<sup>41</sup> Nuclear Europe. *Fact & Figures*. Available at: <https://www.nucleareurope.eu/facts-figures/> (Accessed: 07/12/2022)

<sup>42</sup> International Atomic Energy Agency (IAEA). *Nuclear Energy for a Net Zero World*. Available at: <https://www.iaea.org/sites/default/files/21/10/nuclear-energy-for-a-net-zero-world.pdf> (Accessed: 07/12/2022)

<sup>43</sup> European Nuclear Society. *COP27 Position Paper - The fastest path to Net Zero for a sustainable & energy secure future for all*. Available at: <https://www.euronuclear.org/wp-content/uploads/2022/09/COP27-Position-Paper.pdf> (Accessed: 07/12/2022)

<sup>44</sup> International Atomic Energy Agency (IAEA). *Nuclear Energy for a Net Zero World*. Available at: <https://www.iaea.org/sites/default/files/21/10/nuclear-energy-for-a-net-zero-world.pdf> (Accessed: 07/12/2022)

of keeping nuclear energy as part of the portfolio of solutions for the successful transition to a **net zero future** (cutting greenhouse gas emissions to as close to zero as possible).

## **Dilemmas rising**

### ***The harmful impact of radioactive wastes***

Spent nuclear fuel is dangerously radioactive and has the potential to release a poisonous chemical element called plutonium into the environment. In fact, exposure to radioactive waste can cause cancerous growths in humans and genetic damage or mutations to animals and plants<sup>45</sup>.

Within EU borders, radioactive waste is mainly generated from the production of electricity in nuclear power plants or from the non-power-related use of radioactive materials for medical, research, industrial and agricultural purposes. All EU countries generate radioactive waste, and 20 of them also manage spent fuel on their territory<sup>46</sup>.

Due to its hazardous nature, the safeguarding of nuclear waste must be ensured. Specifically, the territories where the percentage of radiation is very high need to be isolated from humans and other living organisms for a long period of time. What EU wants to achieve is the accordance of the member states' action with the rules set by the *Radioactive Waste and Spent Fuel Management Directive*<sup>47</sup>. It is under the discrepancy of the national governments to decide which measures they will apply in order to achieve the goal of minimization and safe management of radioactive wastes, within the framework of the prementioned Directive.

Progress has been made, and so far, Finland, France and Sweden have selected sites for the deep geological disposal of intermediate and high-level waste from civilian facilities. It is likely that they will open the first repositories

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<sup>45</sup> Zenbird. *What are the negative effects of nuclear waste*. Available at: <https://zenbird.media/what-are-the-negative-effects-of-nuclear-waste/> (Accessed: 09/10/2022)

<sup>46</sup> European Commission. *Radioactive waste and spent fuel*. Available at: [https://energy.ec.europa.eu/topics/nuclear-energy/radioactive-waste-and-spent-fuel\\_en](https://energy.ec.europa.eu/topics/nuclear-energy/radioactive-waste-and-spent-fuel_en) (Accessed: 09/12/2022)

<sup>47</sup> EUR-lex. *Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0070&qid=1397211079180> (Accessed: 09/12/2022)

for these kinds of waste between 2024 and 2035<sup>48</sup>. Although, the setting of policy plans from all the other Member States remains a need of great importance.

### ***The need of re-qualification of laborers working in the energy production area***

Specialized workforce is vital in order for a nuclear plant to function efficiently.<sup>49</sup> However, it has been observed that during the last years, working in the nuclear power industry has been considered less prestigious than it had been before<sup>50</sup>. Therefore, with laborers leaving the industry owing to its decline in the past 30 years, finding new personnel or re-training the workforce might be nuclear’s largest challenge.

Employment in the EU energy supply sector has been decreasing over the past decade, supporting over 1.6 million direct jobs in 2017.<sup>51</sup> At the same time, according to some studies, each nuclear plant employs 500-800 workers, while it can operate for more than 80 years. Its construction could require up to 7.000 workers. For every 100 nuclear power plant jobs, 66 more are created in the local community.<sup>52</sup>

It is clear that nuclear production can create multiple new job positions. Nevertheless, those who will eventually occupy them must be specialized workers. Special requirements for training and re-qualification must be met in order to create a competent workforce in the area of nuclear energy<sup>53</sup>. Apart from the Green Employment Initiative of the Commission, it seems that more action must be taken even in the area of re-qualifying workers, if Europe wants to invest more in nuclear energy.<sup>54</sup>

### ***The risk of military use of nuclear energy***

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<sup>48</sup> European Commission. *Radioactive waste and spent fuel*. Available at: [https://energy.ec.europa.eu/topics/nuclear-energy/radioactive-waste-and-spent-fuel\\_en](https://energy.ec.europa.eu/topics/nuclear-energy/radioactive-waste-and-spent-fuel_en) (Accessed: 09/12/2022)

<sup>49</sup> International Atomic Energy Agency, *The nuclear power industry’s ageing workforce: Transfer of knowledge to the next generation* Available at: [https://www-pub.iaea.org/MTCD/publications/PDF/te\\_1399\\_web.pdf](https://www-pub.iaea.org/MTCD/publications/PDF/te_1399_web.pdf) (Accessed: 12/12/22)

<sup>50</sup> International Atomic Energy Agency, *The nuclear power industry’s ageing workforce: Transfer of knowledge to the next generation*. Available at: [https://www-pub.iaea.org/MTCD/publications/PDF/te\\_1399\\_web.pdf](https://www-pub.iaea.org/MTCD/publications/PDF/te_1399_web.pdf)(Accessed: 12/12/22)

<sup>51</sup> Joint Research Centre *Employment in the energy sector* ([file:///C:/Users/johne/Downloads/employment\\_energy\\_status\\_report\\_2020.pdf](file:///C:/Users/johne/Downloads/employment_energy_status_report_2020.pdf)) Accessed: 12/12/22

<sup>52</sup> Nuclear Energy Institute, *Jobs* Available at:(<https://www.nei.org/advantages/jobs>) Accessed 12/12/22

<sup>53</sup> OECD-Nuclear Energy Agency, *Nuclear Education and Training: From Concern to Capability* Available at:[https://www.oecd-neia.org/jcms/pl\\_14846/nuclear-education-and-training-from-concern-to-capability-executive-summary?details=true](https://www.oecd-neia.org/jcms/pl_14846/nuclear-education-and-training-from-concern-to-capability-executive-summary?details=true) (Accessed: 12/12/22)

<sup>54</sup> European Commission. *Green Employment Initiative* Available at: [https://ec.europa.eu/commission/presscorner/detail/fr/MEMO\\_14\\_446](https://ec.europa.eu/commission/presscorner/detail/fr/MEMO_14_446) (Accessed: 13/12/22)

It is difficult to completely disregard the possible connection between nuclear energy and nuclear weapons. After all, the process of enriching uranium to use it as fuel for nuclear reactors, is the same for using it in order to create a nuclear weapon<sup>55</sup>. However, nuclear energy might also be used as a fuel for aircraft carriers and submarines, in which case nuclear energy is not used as a weapon<sup>56</sup>.

With Russia's threats of using nuclear weapons in Ukraine, the fear of a **nuclear proliferation** (the spread of nuclear weapons, nuclear weapons technology, or fissile material to countries that do not already possess them) within the EU could be plausible- even though not very probable owing to the fact that EU members have joined the Treaty on the Non-Proliferation of Nuclear Weapons. Currently France (the only member of the EU with nuclear weapons) and the UK (the latter not being a member of the EU) have in total 515 nuclear warheads.

Nevertheless, the danger of a nuclear proliferation due to the increase of production of nuclear energy (initially for peaceful purposes), could be an argument against the 'excessive' production of nuclear energy.

## Actions Taken

### **REPowerEU Plan**

On May 18<sup>th</sup>, 2022, the European Commission in response to the hardships and global energy market disruption caused by Russia's invasion of Ukraine,<sup>57</sup> presented the REPower EU Plan. The REPower EU is the newest addition to the European Energy Security Strategy, and its two goals are to end EU's dependence on Russia's fossil fuel and to tackle the climate crisis. The measures in the REPowerEU Plan aim to respond to this ambition, through **energy savings, diversification of energy supplies, and accelerated roll-out of renewable energy** to replace fossil fuels in homes, industry and power generation. Member states are encouraged to enhance long-time measures to reduce energy consumption as well as fiscally support this transition. This also includes global cooperation with new

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<sup>55</sup> Britannica. *Nuclear weapon*. Available at: <https://www.britannica.com/technology/nuclear-weapon> (Accessed: 13/12/22)

<sup>56</sup> Radioactivity.Eu.Com, *Military Applications*. Available at: [https://www.radioactivity.eu.com/site/pages/Military\\_Applications.htm](https://www.radioactivity.eu.com/site/pages/Military_Applications.htm) (Accessed: 13/12/22)

<sup>57</sup> European Commission. *REPowerEU*. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_3131](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131) (Accessed: 11/12/22)

international partners, while efforts to increase the usage of renewables is highly recommended<sup>58</sup>.

The **EU external energy engagement in a changing world (EU External Energy Strategy)** as part of the REPowerEU Plan, explains how the EU supports a global, clean and just energy transition to ensure sustainable, secure and affordable energy<sup>59</sup> Furthermore, the **EU Energy Platform** was established to secure the EU's energy supply in the current geopolitical context and to phase out dependency on Russian gas. It is a voluntary coordination mechanism, supporting the EU's purchase of gas and hydrogen<sup>60</sup>.

The green transformation will subsequently **strengthen economic growth, security, and climate action** for Europe and its partners. The **Recovery and Resilience Facility** (RRF) is at the heart of the REPowerEU Plan, supporting the forementioned coordinated planning and financing of cross-border and national infrastructure as well as energy projects and reforms.

Regarding nuclear energy, the REPowerEU highlights the importance of nuclear power as a key factor in the efforts of the Union to adapt in the reformed circumstances<sup>61</sup>. As it has already been mentioned, nuclear energy can contribute significantly to the production of hydrogen, heat and electricity, therefore it is considered as a sustainable, efficient and reliable source.<sup>62</sup>

What remains to be seen is what actions and to which extent will the EU take in order to implement the policies described in the REPower EU plan, especially regarding the use of nuclear energy. To diversify their options, EU Member States that are currently dependent on Russia for nuclear fuel for their reactors will need to work within the EU and with international partners "to secure alternative sources of uranium and boosting the conversion,

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<sup>58</sup> European Commission, *REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition*. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_3131](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131) (Accessed: 09/11/22)

<sup>59</sup> European Commission. *Strategy for an EU external energy engagement*. Available at: [https://energy.ec.europa.eu/topics/energy-strategy/strategy-eu-external-energy-engagement\\_en](https://energy.ec.europa.eu/topics/energy-strategy/strategy-eu-external-energy-engagement_en) (Accessed: 09/11/22)

<sup>60</sup> European Commission. *EU Energy Platform*. Available at: [https://energy.ec.europa.eu/topics/energy-security/eu-energy-platform\\_en](https://energy.ec.europa.eu/topics/energy-security/eu-energy-platform_en) Accessed: 09/11/22)

<sup>61</sup> Communication From the Commission to The European Parliament The European Council, The Council, The European Economic And Social Committee And The Committee Of The Regions. *REPower EU*. Available at: [https://eur-lex.europa.eu/resource.html?uri=cellar:fc930f14-d7ae-11ec-a95f-01aa75ed71a1.0001.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:fc930f14-d7ae-11ec-a95f-01aa75ed71a1.0001.02/DOC_1&format=PDF) (Accessed: 09/12/22)

<sup>62</sup> Nuclear Europe. *Facts & Figures*. Available at: <https://www.nucleareurope.eu/facts-figures/> (Accessed: 07/12/2022)

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enrichment and fuel fabrication capacities available in Europe or in EU's global partners.”<sup>63</sup>

### ***Complementary Delegated Act***

The EU Taxonomy Regulation sets down the conditions which must be met in order for an economic activity to be considered “environmentally sustainable”. It is supplemented by a number of delegated acts which set down the specific technical screening criteria which must be satisfied in order for an economic activity to be considered environmentally sustainable<sup>64</sup>.

The first of these delegated acts, referred to as the “EU Taxonomy Climate Delegated Act”, entered into force on 1 January 2022 and sets down the technical screening criteria which must be satisfied for an economic activity to be considered as contributing to the environmental objective of climate change mitigation or climate change adaptation. A separate delegated act, which will set down the technical screening criteria for the remaining four environmental objectives (the sustainable use and protection of water and marine resources, the transition to a circular economy, the pollution prevention and control, and the protection and restoration of biodiversity and ecosystems) identified under the EU Taxonomy framework, will enter into force on 1 January 2023.

At the time of its publication last year, the EU Taxonomy Climate Delegated Act did not provide for the possibility for any economic activities relating to natural gas or nuclear energy to be classified as environmentally sustainable under the EU Taxonomy framework.

However, in February 2022, the European Commission published a “complementary” delegated act under which it proposed to extend the EU Taxonomy framework to allow certain economic activities involving gas and nuclear energy to be classified as “environmentally sustainable” subject to specific conditions being met (EU Taxonomy Climate Complementary Delegated Act). The European Parliament voted not to object to the EU Taxonomy Climate Complementary Delegated Act. The Council of Europe

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<sup>63</sup> World Nuclear News. *Nuclear included in EU's repowering plan*. Available at: <https://www.world-nuclear-news.org/Articles/Nuclear-included-in-EU-s-repowering-plan> (Accessed: 09/12/22)

<sup>64</sup> Dillion EUStace. *Publication of EU Taxonomy Climate Complementary Delegated Act in the Official Journal: Implications for Funds*. Available at: <https://www.dillioneustace.com/legal-updates/publication-of-eu-taxonomy-climate-complementary-delegated-act-in-the-official-journal-implications-for-funds> (Accessed: 08/11/22)

also held a right of veto over the proposals put forward by the European Commission but chose not to exercise this power<sup>65</sup>.

Consequently, funds which fall within the scope of Article 5 or Article 6 of the Taxonomy Regulation (**In-Scope Funds**) will, from 1 January 2023, be able to classify investments which provide exposure to gas and nuclear energy activities which satisfy the applicable technical screening criteria set down in the EU Taxonomy Climate Complementary Delegated Act as **environmentally sustainable investments** for the purposes of calculating and disclosing the extent to which their portfolio is taxonomy-aligned in their pre-contractual and periodic report disclosures<sup>66</sup>.

## European Parties' Position

### **European People's Party (EPP)**

The European People's Party is the oldest and largest (175 seats) party of the European Parliament. Its political position is rooted in the central-right ideology. The EPP embraces the traditional European values, promotes the model of a democratic and efficient Europe and supports the free-market economy<sup>67</sup>. Concerning the topic of discussion, the EPP Group acknowledges the role nuclear energy can play as a low-carbon source in the national energy mix, provided sufficient provisions are made for the highest safety standards as well as for decommissioning, considering cross-border issues<sup>68</sup>. Therefore, it voted in favor of the EU Complementary Delegated Act, also known as Taxonomy Delegated Act. The EPP is also a promoter of the REPowerEU Plan because it believes in a stronger and more independent European Union<sup>69</sup>.

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<sup>65</sup> European Commission. *EU taxonomy: Complementary Climate Delegated Act to accelerate decarbonization*. Available at: [https://finance.ec.europa.eu/publications/eu-taxonomy-complementary-climate-delegated-act-accelerate-decarbonisation\\_en](https://finance.ec.europa.eu/publications/eu-taxonomy-complementary-climate-delegated-act-accelerate-decarbonisation_en) (Accessed: 08/11/22)

<sup>66</sup> Dillion EUStace. *Publication of EU Taxonomy Climate Complementary Delegated Act in the Official Journal: Implications for Funds*. Available at: <https://www.dilloneustace.com/legal-updates/publication-of-eu-taxonomy-climate-complementary-delegated-act-in-the-official-journal-implications-for-funds> (Accessed: 08/11/22)

<sup>67</sup> EPP. *Who We Are*. Available at: <https://www.epp.eu/who-we-are> (Accessed: 10/12/2022)

<sup>68</sup> EPP. *Involve the European Parliament when deciding on gas and nuclear energy*. Available at: <https://www.eppgroup.eu/newsroom/news/involve-parliament-when-deciding-on-gas-and-nuclear-energy> (Accessed: 10/12/2022)

<sup>69</sup> EPP. *REPower and ReSolar the EU*. Available at: <https://www.eppgroup.eu/newsroom/news/repower-and-resolar-the-eu> (Accessed: 10/12/2022)



***Progressive Alliance of Socialists and Democrats (S&D)***

The S&D is a centre-left political group initially founded in 1953. It holds 144 seats in the EP. Some of the top priorities of their agenda are: state interference in the economy in order to benefit the people, social inclusion, reconciling the environment with the economy, tax justice and combatting far-right extremism<sup>70</sup>. As far as energy is concerned, the S&Ds support the reduce of Co2 emissions and the use of renewable sources of energy in order to achieve a sustainable environmental transition. At the same time this Group underlines the importance of 'bringing the bills down' when discussing the EU's current energy crisis. Nevertheless, they have voted down the Taxonomy Delegated Act, commenting that 'Gas and nuclear cannot be labelled either green or sustainable'. The S&Ds blame the conservatives for having 'shamefully betrayed EU climate ambitions' and supporting that nuclear energy is a viable alternative source of energy<sup>71</sup>.

***Renew Europe***

Renew Europe (Renew) is a liberal, pro-European political group of the European Parliament founded in 2019. The group is the successor to the Alliance of Liberals and Democrats for Europe (ALDE) group which existed from 2004 to 2019<sup>72</sup>. The Renew promotes the EU democratic values, the social inclusion, the technology evolution, and the sustainability of economy. The creation of an internal energy market, as well as the energy independence and efficiency of the EU should be major priorities of the Member States, according to the MEPs of the Renew Europe. The party states that the EU needs to promote and expand the reliance on nuclear energy, because it is practically impossible to generate sufficient energy with wind and solar energy as there is not enough available land to meet electricity demand<sup>73</sup>.

***The Greens – European Free Alliance (Greens/EFA)***

The Greens/EFA is a parliamentary group which includes members of green movements and was established in 1999. It currently holds 71 seats in the EP. Their main target according to their political agenda, is to make Europe the

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<sup>70</sup> S&D Group, Our Values. Available at: <https://www.socialistsanddemocrats.eu/> (Accessed: 06/12/22)

<sup>71</sup> S&D, *What we stand for* (<https://www.socialistsanddemocrats.eu/newsroom/sds-labelling-gas-and-nuclear-sustainable-taxonomy-conservatives-have-shamefully-betrayed>) Accessed 6/12/22

<sup>72</sup> Renew Europe. *Europe Is Our Future and Is Well Worth Fighting For*. Available at: <https://www.reneweuropengroup.eu/what-we-stand-for> (Accessed: 10/12/2022)

<sup>73</sup> World Nuclear News. *Study calls for European nuclear renaissance*. Available at: <https://world-nuclear-news.org/Articles/Study-calls-for-European-nuclear-renaissance> (Accessed: 09/12/2022)

global leader in terms of climate and environmental protection, peace and social justice, fair globalization, and in the fight for human rights, and self-determination.<sup>74</sup> They support sustainable development and believe the environmental protection (reduce of Co2 emissions and complete decarbonization in the future) as well as the use of renewable sources of energy, to be an extremely important matter. However, they have vigorously opposed the EU Taxonomy, which was proposed on February 2, declaring their opposition to 'the greenwashing of gas and nuclear power'. They support that nuclear power is 'problematic, expensive and not a sustainable investment'<sup>75</sup>.

### **European Conservatives and Reformists (ECR Group)**

The ECR Group is a center-right political group established in 2009. ECR currently has 61 MEPs from 15 countries. Its main Principles and Values are freedom of the individual, free enterprise, minimum state interference, opposition to EU federalism, the importance of family as the bedrock of society and the importance of the transatlantic cooperation which will provide security for the EU<sup>76</sup>. More specifically, regarding the Energy topic, the ECR supports a 'sustainable, clean energy supply with an emphasis on energy security'. Its MEPs regularly point out the right of the member-states to define their own energy mix and therefore opt for nuclear if they wish. The ECR has signaled full support for the European Commission's proposal to include nuclear energy and fossil gas in the Taxonomy Regulation and underlines the importance of a sustainable transition that can reduce Co2 emissions which will not affect the stability of the Union's energy supply, competitiveness, and jobs<sup>77</sup>.

### **The Left in the European Parliament - GUE/NGL**

It is the smallest of the 7 political parties in the European Parliament, holding only 39 seats. It disapproves of the fact that the EU is based on market-oriented practices and competition, allowing elites to raise their profits. The GUE/NGL stands up for workers, environment, feminism, peace & human rights<sup>78</sup>. Concerning the issue of nuclear power, the party has voted against the reports that promoted a strengthened role of the private sector. Despite

<sup>74</sup> Greens/EFA, *Who we are*. Available at: <https://www.greens-efa.eu/en/who-we-are> (Accessed: 06/12/22)

<sup>75</sup> Greens/EFA, *Stop the greenwashing of Nuclear power in the taxonomy* (<https://act.greens-efa.eu/stopgreenwashing>) Accessed 06/12/22

<sup>76</sup> ECR Group in the EP. *Who we are*. Available at: <https://www.ecrgroup.eu/> (Accessed: 06/12/22)

<sup>77</sup> ECR Group in the EP, *Gas and Nuclear part of the solution*. Available at: <https://ecrgroup.eu/article/gas-and-nuclear-part-of-the-solution> (Accessed: 06/12/22)

<sup>78</sup> The Left in the European Parliament - GUE/NGL. *About the group*. Available at: <https://left.eu/about-the-group/> (Accessed: 10/12/2022)

the fact GUE/NGL has placed a negative vote on those initiatives, it does not reject nuclear power as key factor for the Energy Union. It supports the equal participation of the EU's countries on the discussion for the Energy Union and believes that it should be the role of the member states, not the Commission, to negotiate the terms of this initiative<sup>79</sup>.

## **Conclusion**

While facing an unprecedented energy crisis, the consequences of which have been unleashed in every European household, it is vital for the EU to minimize the damage caused and at the same time achieve being energy independent. New, renewable sources of energy within the EU must be found, or else Europe will continue to be vulnerable to possible similar events in the future. Nuclear energy is efficient. It has proven to be viable and seems to be affordable and even profitable long-term. However, it can also lead to huge catastrophes (both intentionally, used as a weapon, and unintentionally, owing to a nuclear disaster similar to that which occurred in Chernobyl). Do the benefits outweigh the risks, or the opposite? It is up to the Europeans to decide.

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<sup>79</sup> The Left in the European Parliament - GUE/NGL. *Why GUE/NGL MEPs voted against report on European Energy Union*. Available at: <https://left.eu/why-gue-ngl-meps-voted-against-report-on-european-energy-union/> (Accessed: 10/12/2022)

## Questions Raised

1. In which ways can the EU and its Member States integrate nuclear power in the energy mix, within the context of the five goals towards the Energy Union?
2. Which measures should EU take in order to upgrade and expand the internal production of nuclear power without breaking the nuclear safety agreements?
3. How can the Member States of EU achieve the goal of decarbonization by the use of nuclear power?
4. Which strategy should be followed by the EU in order to minimize the radioactive wastes and limit the spread of radioactivity?
5. Which strategy should the Member States follow to benefit from the use of nuclear power, taking into consideration the affordability and long-term efficiency of this specific energy source?
6. How can the laborers working in the energy production area be requalified to man the new energy infrastructure of the EU?
7. What measures should be taken in order to prevent nuclear proliferation within the EU?
8. In which ways may the EU ensure that countries with greater nuclear capabilities than others will not use the existing asymmetric power distribution in their sole interest?
9. How can the EU ensure the use of nuclear power by leveraging innovation and research in this domain?
10. In which ways will the EU ensure the successful implementation of the REPowerEU Plan and how can the member states enhance the initiative taken?

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