FORATOM
THE VOICE OF THE EUROPEAN NUCLEAR INDUSTRY

STRATEGY FOR LONG-TERM EU GREENHOUSE GAS EMISSIONS REDUCTIONS

All low-carbon energy sources should be treated on an equal footing and rewarded for the benefits they bring

NUCLEAR

- Is a low-carbon energy source
- Ensures security of supply
- Reduces the environmental footprint of the power sector

NUCLEAR INDUSTRY IN NUMBERS

- Accounts for **26%** of electricity in the EU
- Almost **50%** of low-carbon electricity
- Supports around **800.000** jobs
- Turnover of **70bn** per year

October 2018

FORATOM's position on the "Strategy for long-term EU greenhouse gas emissions reductions"

In order to make sure that the "Strategy for long-term EU greenhouse gas emissions reductions" fulfils the European Union's decarbonisation goals and is in line with the Paris Agreement, FORATOM wishes to emphasise the important role nuclear energy plays as a low-carbon, flexible and baseload source of power capable of addressing the EU's long-term climate and energy objectives. That is why, FORATOM recommends that:

1. **Actions on market design (i.e. long term arrangements) are needed to restore confidence among potential investors in power generation projects of all types, but in particular for large scale, capital intensive low-carbon generation projects.**

2. **The EU ETS should be the main decarbonisation instrument and any potential uncoordinated overlappings with national and EU policies that can have an adverse effect on reaching a robust carbon price should be avoided.**

3. **The importance of nuclear power and its role in achieving climate goals while providing security of supply at a reasonable cost should be recognised and promoted. Indeed, a cost-effective transition requires a share of dispatchable nuclear generation that remains significant while the share of variable generation increases.**

4. **All low-carbon energy sources (which irrefutably include nuclear energy) should be treated on an equal footing and rewarded for the benefits they bring to the system. Within the framework of the current debate on sustainable finance, a clearly and specifically defined Level 1 regulation for sustainable investments has to focus on climate impacts and include technologically neutral criteria.**

5. **Cutting CO_2 emissions while maintaining an economically sustainable system should be recognised as the ultimate goal of the strategy. Particular energy technology targets shouldn't be imposed as such policies delay all other technology developments. This results in the least efficient use of capital and thereby creates unintended high costs and/or lack of carbon reductions at the expense of EU climate goals.**

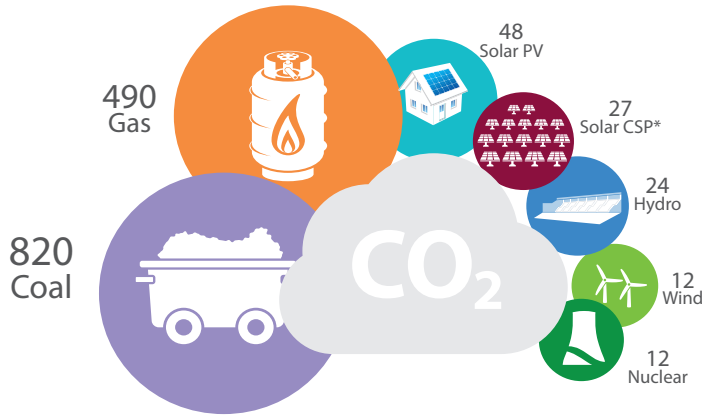
Background

- The formal ratification of the Paris Agreement by the European Union on 5 October 2016 reaffirmed the EU's commitment to decarbonise its economy while going beyond what was originally pledged – 80-95% GHG emission reductions by 2050 (European Council, October 2009).
- A series of energy roadmaps and scenario studies from the European Commission [1] and other international organisations [2] have shown that embarking on such ambitious decarbonisation pathways would require a growing role of electricity, from 20% of European final energy consumption in 2015 to more than 40% by 2050.
- In this context, FORATOM sees an important role for nuclear as a sustainable, low-carbon, flexible and baseload source of power to address the expected increase in electricity demand.
- Only in the efficient deployment of available and future technologies will the EU be able to comply with the Paris Agreement while ensuring reliability of the energy system. Nuclear power is an essential part of the solution as it is fully available today, provides security and predictability in a sustainable and competitive manner.

The role of nuclear in Europe's decarbonisation pathways

- **Nuclear contributes to meeting the EU's decarbonisation objective as it addresses security of supply issues.**
  - In the short to medium term (before 2030), the lack of commercial maturity of storage technologies might lead to a fossil fuel power plant lock-in effect if the pace of dispatchable technologies phase out is not properly taken into consideration.
  - In the longer term, with the increased penetration of variable renewable generation, the European power system will face a growing need for flexibility – both short term flexibility to balance the power system close to real-time and weekly or seasonal flexibility. While new storage technologies are expected to see significant cost reductions, and could address a significant share of the flexibility needs, low carbon dispatchable generation such as nuclear will have a critical role to play in providing flexibility.
  - In addition, managing the pace of nuclear power plant decommissioning will be necessary to avoid a significant increase in the European economy's energy dependence on imported fuel.

Comparison of greenhouse gas emissions
(grammes CO_2 eq/kWh)



*Concentrated Solar Power
Source: IPCC 2014

Nuclear energy has one of the lowest climate impacts of any energy

[1] 2050 EU Energy roadmap (2011), EU Reference scenario 2013, 2016, PINC
[2] World Energy Outlook (IEA, 2017)

- **Nuclear contributes to meeting the decarbonisation objective by reducing the environmental footprint of the power sector.**

An efficient and sustainable transition towards low carbon technologies in the power sector will need to account for both carbon emissions, as well as other forms of air pollution impacts on land use and resource use.

  - While all scenarios considered meet the 2050 decarbonisation objective, the probability of reaching this objective is higher in the scenarios featuring at least a stable share of nuclear, as it shows less cliff-edge effects in the long run and reduces emissions in the short and medium term.
  - In addition to contributing towards reducing the CO_2 emissions of the power sector, nuclear generation mitigates the environmental footprint of the European power system, which is important to ensure the wider environmental and social sustainability of this transition.
  - Nuclear power is the only large-scale energy-producing technology that takes full responsibility for all of its waste and fully integrates these costs into its product. Also, it should be emphasized that the amount of waste generated by nuclear power is very small compared to other thermal electricity generation technologies.

- **Nuclear brings cost benefits to consumers and to the system, as well as macro-economic improvements.**
  - Over the 2020-2050 horizon, the economic impact of the low carbon transition on customers would increase by around 440 billion € (real 2017) in the event of a nuclear closure scenario rather than a further nuclear development scenario.
  - Furthermore, maintaining nuclear capacity would mitigate system costs.
  - Overall, nuclear generation would also provide additional benefits to the European economy. Maintaining nuclear capacity and additional investments in new capacity would maintain high skilled employment in Europe, from the conception and construction phases to the operational phase.

Nuclear energy in EU

Nuclear energy accounts for 25.6% of electricity in the European Union and almost half of its low-carbon electricity. It provides reliable low-carbon baseload electricity and can provide the flexibility of dispatch required to balance the increasing share of intermittent energy sources, hence continuing to contribute to security of supply.

About us

The European Atomic Forum (FORATOM) is the Brussels-based trade association for the nuclear energy industry in Europe. The membership of FORATOM is made up of 15 national nuclear associations and through these associations, FORATOM represents nearly 3,000 European companies working in the industry and supporting around 800,000 jobs.

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