

NUCLEAREUROPE'S POSITION ON THE REFORM OF THE EU'S ELECTRICITY MARKET DESIGN

NUCLEAR



IS A LOW-CARBON
ENERGY SOURCE



ENSURES SECURITY
OF SUPPLY



IS ENVIRONMENTALLY,
ECONOMICALLY AND
SOCIALLY SUSTAINABLE

EU NUCLEAR INDUSTRY IN NUMBERS



ACCOUNTS FOR
25%
OF ELECTRICITY



ALMOST
50%
OF LOW-CARBON
ELECTRICITY



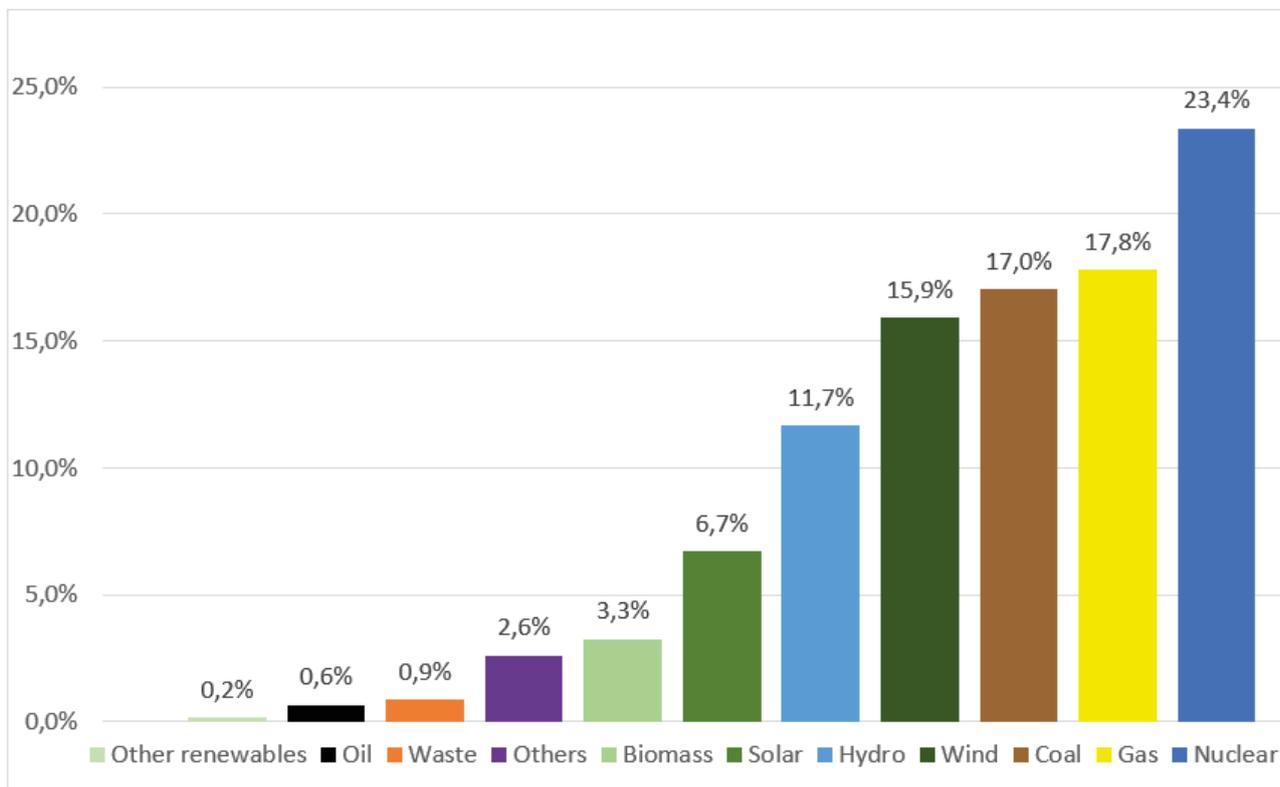
SUPPORTS AROUND
1Mn
JOBS



TURNOVER OF
100bn
PER YEAR

Introduction

The current electricity mix consists of:



2022 EU Electricity Generation mix (%) (source: energy-charts.info)

Looking towards 2050, nuclear will still represent an important source of electricity, accounting for around 10-15% (depending on overall demand) of the EU's electricity mix according to the European Commission's long-term energy scenarios¹ or even 20-25% according to industry's long-term vision².

To achieve this, nuclear capacity will need to remain at around the current level (+/- 100 GW) or higher (over 130 GW²), and most of it will primarily be composed of new nuclear projects. This will require significant investments and thus strong market signals are key.

¹EC - "A Clean Planet for all" [communication](#) and [in-depth analysis](#) – 28 November 2018

²[Compass Lexecon - Pathways to 2050: Role of nuclear in a low-carbon Europe - 2021 updated results](#) - 30 November 2021

What is at stake

We continue facing an energy trilemma: decarbonisation, affordability and security of supply. All of them are equally important and require urgent attention. We see that the decarbonisation targets are being threatened due to an increased reliance on fossil fuels, with some Member States restarting mothballed coal power plants. Even if the reform of the electricity market design focuses on affordability and security of supply, the decarbonisation objectives must not be ignored.

Electricity Market Design reform – our expectations

- Technology neutrality

In order to deliver on these goals, the reform of the Electricity Market Design (EMD) should be technology neutral, treating all fossil-free and low-carbon energy sources equally. If the EMD does not meet the principle of technology neutrality it may end up creating artificial technology champions, running the risk of not maintaining energy prices at an affordable level for consumers nor ensuring a long-term investment environment for energy supplies.

- Long-term visibility and predictability for both new nuclear projects and the lifetime extension of the existing nuclear fleet

When comparing the economic benefits which different technologies bring to the system, the market must include both grid and system costs. Generation III reactors have a design lifetime of 60 years, which can be potentially extended to 80 years (and even in the case of Generation II reactors, this can also be envisaged). Given this, decisions to invest in new nuclear projects require long-term predictability (which is greater than for any other technology). In addition, decisions to invest in extending the life of the existing fleet (by 10 or 20 years depending on the regulatory regime) also require a stable market

Nucleareurope recommendations

When it comes to the electricity market design, nucleareurope's position is as follows:

- Technology neutrality of the electricity market

Each Member State clearly has the right to choose its own energy mix. However, as it stands today the market focuses on incentivising the deployment and integration of renewables. Although policymakers see this as a solution for lowering energy prices, like nuclear, renewables might encounter difficulties as their deployment depends on many aspects: local support for the scheme, grid availability, public acceptance, etc. In addition, when talking about security of supply, certain renewables (such as wind and solar to a certain extent) are dependent on the weather. For the time being, technologies which can support the deployment of so-called variable renewables (storage, demand-side flexibility and others) are still not mature enough from either a technology or economic perspective to provide a viable solution as a back-up; and their developments are also uncertain.

- Putting a value on long-term security of supply

Having a diversified energy mix can make a country more resilient to disruptions in the supply and cost of fuels, raw materials and components. For example, due to the current geopolitical context, Europe has recently seen an increased reliance on coal instead of other dispatchable electricity sources such as nuclear. In the short and medium term, the existing nuclear fleet represents a valuable asset and, as such, all nuclear reactors should remain in operation for as long as is technically and economically feasible.

- Proposed market instruments

Power Purchase Agreements (PPAs) should be technology neutral when it comes to the competitive process (for example call for tenders, auctioning, etc) and bilateral agreements negotiated between consumers and generators. Regarding the duration of those arrangements, this should be brought closer in line with the lifespan of the power plant providing the electricity. For example, the current duration of PPAs is around 10 years (with some exceptionally lasting 15 years or beyond). Given that in the case of a nuclear power plant the designed lifetime of the existing technologies is 60 years, the PPAs currently in use cover just a small share of production.

Two-way CfDs: many new EU nuclear projects could benefit from this type of instrument and therefore their development is encouraged. These types of instruments must not - and cannot - apply to existing technologies.

Other market instruments could be also considered and encouraged. For example, the Mankala model used in Finland and the Regulated Asset Base (RAB) model used in UK, as well as other models currently being investigated by some EU Member States to enable the deployment of capital-intensive, low-carbon technologies (mainly renewables and nuclear).

- Market intervention

It is very important that once the right market instruments are agreed upon, their implementation is initiated right away and that no additional market intervention is executed without a solid long-term impact assessment. The temporary measures proposed in 2022 should not be applied permanently unless a detailed analysis demonstrates their potential benefit in the longer term, taking into account the independence and technology neutrality principles of the market.

In addition to the issues which this EMD review aims to resolve, we believe that it is important to propose measures which reward the reliability (eg 24/7 dispatchability) which different technologies provide. Capacity Remuneration Mechanisms (CRMs) should be also explored as a possible way to ensure security of supply, as well as ensuring that consumers don't pay for more capacity than is needed.

About us

nucleareurope is the Brussels-based trade association for the nuclear energy industry in Europe. The membership of nucleareurope is made up of 15 national nuclear associations and through these associations, nucleareurope represents nearly 3,000 European companies working in the industry and supporting around 1.1 million jobs.



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