nuclearеurope

Unleashing the power of nuclear

EXECUTIVE SUMMARY

An Action Plan for nuclear

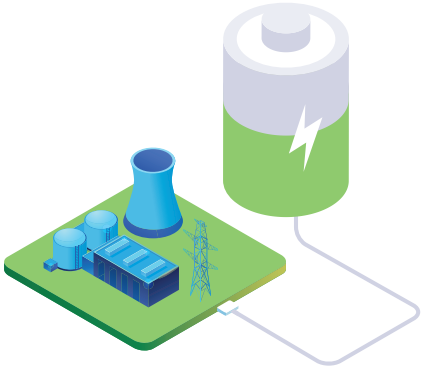
Achieving our goals

Europe is at a decisive energy crossroads. To stay competitive, resilient and on track for climate neutrality, we must take tough decisions fast. The challenge is clear: decarbonise, secure our energy supply, protect industrial competitiveness and keep energy affordable. Today, nuclear energy is one of Europe's most strategic assets. It provides around one quarter of the EU's electricity, delivering firm and dispatchable energy that stabilises the grid and supports the integration of variable renewables. It is also a major source of electricity in several EU Member States.

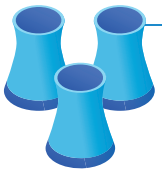
100
reactors
in operation in the EU

100 GWs
of installed capacity

~24%
of EU electricity

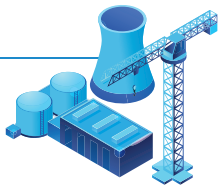


Source: EMBER: Shockproof: how electrification can strengthen EU energy security



30 nuclear reactors planned

1 nuclear power pland under construction



Source: NuclearEurope Facts & figures

The European nuclear sector provides a substantial economic contribution....

Generates nearly
€48Bn
in public revenues

Is responsible for over
€250Bn
in EU economic output

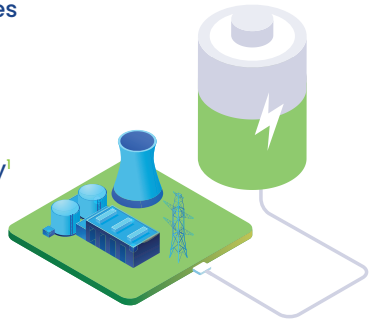
Leads to
€38Bn
in disposable household income

Supports around
900,000
jobs covering a broad range of skills set from construction to nuclear engineers

Source: Economic and Social Impact Report, Deloitte, 2025

As well as decades of net zero energy

Nuclear generates more than
30%
of the EU's low carbon electricity[1]



Without nuclear power, global CO_2 emissions from electricity generation would have been almost
20%
higher over the last half-century[2]

[1] NuclearEurope Facts & figures & Nuclear Power in a Clean Energy System
[2] Overcoming energy constraints is key to delivering on Europe's data centre goals, IEA, 2025

Nuclear is regaining momentum in Europe, with major new projects planned and a 2050 target of 150 GW of installed nuclear capacity, consisting of lifetime extension of existing reactors, new large reactors, Small Modular Reactors (SMRs) and Advanced Modular Reactor (AMRs). These investments will play a key role to:

Achieve Net Zero

Nuclear offers firm, dispatchable clean energy. This is critical to managing a system increasingly dominated by variable renewables.

Ensure energy soverignty

A shift towards electrification can help reduce Europe's energy dependence. Expanding nuclear capacity in Europe would significantly cut the need for gas imports from third countries.

Strengthen growth & competitiveness

As a provider of firm energy, nuclear provides Europe's industries with a constant supply of decarbonised energy. Nuclear also produces both hydrogen as well as decarbonised heat.

How greater nuclear capacity will support the EU's objectives

#150GW nuclear will:	#200GW nuclear will:
✓ Save around 430 $MtCO_2$	✓ Save around 500 $MtCO_2$
✓ Save €310bn in total energy system costs	✓ Save €450bn in total energy system costs
✓ Reduce gas consumption by about 180 bcm	✓ Reduce gas consumption by about 220 bcm
✓ Reduce dependence on hydrogen imports by up to 33%	✓ Reduce dependence on hydrogen imports by up to 61%

This will lead to greater EU competitiveness in a more climate friendly, affordable & secure energy system

Source: Pathways to 2050: the role of nuclear in a low-carbon Europe, Compass Lexecon, 2024

Increasing nuclear capacity will also bring significant economic benefits to the entire EU thanks to the sector's economic footprint.

Annual economic benefits up to 2050
(includes direct, indirect & induced)

150GW 200GW

Disposable household income

€51Bn
€59.3Bn

Public revenues

€61.6Bn
€71.9Bn

Total jobs

1.48Mn
1.67Mn

Impact on EU economic output

€330.3Bn
€383Bn

Source: Economic and Social Impact Report

Policy Action Plan

Unleashing the power of nuclear will require a technology neutral, long-term policy framework. Furthermore, a series of concrete policy steps at EU level are needed to further support these investments, reduce time delays and cost overruns.

1 A long-term policy vision to stimulate net zero with nuclear

Climate Target 2040: A Net Zero Energy Directive to incentivise vital investments in all clean energy sources

Electrification Action Plan: Nuclear must be explicitly recognised as an essential enabler of Europe's clean energy transition

Governance of the Energy Union Regulation: Recognise nuclear at the same level as renewables under the National Energy and Climate Plans (NECPs)

A stable market design: Equal treatment for nuclear technologies in taxation policies as well as Contracts for Difference and Power Purchase Agreements

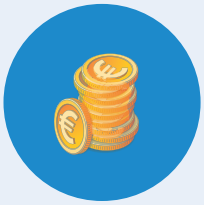
How greater nuclear capacity will support the EU's objectives

A long-term, technology neutral framework supporting nuclear will bring considerable support to the EU's own climate and energy objectives. As highlighted in recent research from Compass Lexecon, it will enable dramatic savings in overall energy system costs, CO_2 emissions, gas consumption and hydrogen import dependence.

2 An equitable financial framework to stimulate investments in nuclear

Multiannual Financial Framework: Explicitly recognise nuclear at the same level as renewables across electricity generation, hydrogen, heat, R&D, and fuel-cycle activities

Sustainable Finance Taxonomy: Nuclear should be treated on the same level as renewables & all fuel cycle activities should be included under the taxonomy as enabling activities



EIB support: Ensure such support for nuclear capacity & enable EIB credit guarantees for nuclear PPAS

Clean Energy Investment Strategy: Integrate nuclear fully into the EU's clean energy investment architecture & design technology-neutral de-risking instruments

How an equitable financing framework will allow the industry to deliver within budget

Having clear and understandable mechanisms to access public loan guarantees and public lending would enable project developers and owners to commit to new investments. In addition, access to public financing support would also help attract private investors to participate in the projects.

3 An accelerated regulatory framework to speed up nuclear deployment

State aid: Streamline the State aid procedure for nuclear projects & allocate greater resources to the relevant EU services

Licensing Acceleration Programme for strategic technologies: A more streamlined process whereby a series of preliminary permissions or authorisations could be developed aligned with private company project timelines

How an accelerated regulatory framework will deliver faster investments

The European nuclear industry is ready to implement lessons learnt from recent projects. This, combined with a more streamlined, harmonised approval, will lead to faster deployment times, similar to those seen during the 1970's and 80's.

4 Investing in the entire fuel cycle to ensure security of supply

REPowerEU: Include the entire fuel cycle under the Sustainable Finance Taxonomy & ensure EU support for reprocessing infrastructure

Communication on Circular Economy in the nuclear sector: A coherent EU framework integrating e.g. reprocessing & recycling pathways as complementary components of a responsible waste strategy

How decisive policies will help to strengthen the sector's security of supply

The European nuclear sector is committed to ramping up its activities in Europe in order to reduce our dependence on imports and strengthen security of supply. European fuel suppliers are already investing in new capacity and will commit to doing more if the right policy measures are implemented. The sector will furthermore continue to invest in reprocessing and recycling activities (including continued research & development) to become a world leader in circular economy practices, thus reducing our need for new materials.

5 A policy framework sustaining a supply chain based in Europe

Nuclear Illustrative Programme (PINC): Should track progress towards the realisation of nuclear investments & function as a strategic instrument to identify the enabling conditions for investment

European Industrial Alliance on SMRs: Continued support for the Alliance & deployment of an ambitious SMR action plan

Support for an EU based supply chain: In order to ensure maximum benefits for Europe, EU policies (e.g. Industrial Accelerator Act) should aim to support manufacturing facilities in the EU

Stimulating Skills, Research, Development & Innovation: Encourage greater synergies across sectors in the fields of skills, research and development

How a strong European supply chain will help delivering investments

A strong supply chain which is located in Europe will bring multiple benefits. First and foremost, it will help speed up the deployment of nuclear projects, given that one of the bottlenecks faced by the industry today is the limited supply chain available to provide the components for nuclear projects. Furthermore, it will bring significant benefits to Europe's economy in terms of job creation and economic growth.

nuclear europe

nucleareurope is the Brussels-based trade association for the nuclear energy industry in Europe. The current membership of nucleareurope is made up of **17 national nuclear associations** – active across Europe – and the companies that they represent, and **19 Corporate Members**. Nearly 3.000 companies are represented, from Europe's (and the world's) largest nuclear utilities and nuclear fuel cycle companies to other undertakings engaged in the transport of nuclear materials and the management of radioactive waste.

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