

## The decline of the nuclear industry

Despite high visibility advertising campaigns and support from certain political spheres, the numbers on the ground show that the nuclear industry is in the midst of a slow but inexorable decline. Even the most favourable projections predict that the role of nuclear power as an energy supply will continue to fade.

### Current situation

There are currently 438 nuclear power reactors functioning worldwide. This is six reactors fewer than in 2002. Their average age is 25 years old, with the oldest reactor being 43 years old. Of these, 143 reactors are situated in the EU.

According to the International Atomic Energy Agency (IAEA), 54 reactors are currently under construction across the world, four of which in the EU: one in Finland, one in France, and two in Slovakia.

There are 127 reactors that have so far been taken off-line across the world, with an average shut-down age of 22 years. Out of these, 77 have been shut down in the EU.

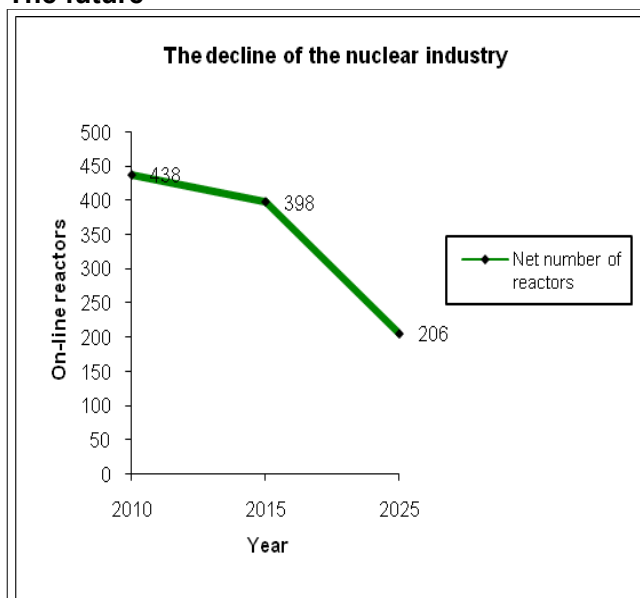
### Recent developments

The last new nuclear power station to come on-line in the EU was the Cernavoda 2 in Romania, which was connected to the electricity grid on 7 August 2007, after 24 years of construction.

In 2008, globally no new nuclear reactor was connected to the grid, and one (Bohunice V1 in Slovakia) was closed. In contrast, an estimated 27 gigawatts of wind power capacity was added to the grid worldwide in 2008 (see graph on next page); this equals the output of at least eight nuclear reactors of one gigawatt. The last time the nuclear industry brought eight reactors on-line worldwide was 17 years ago, in 1993.

In 2009, two new nuclear power stations were connected to the grid (Tomari 3 in Japan and Rajasthan 5 in India), while four reactors were closed down (Hamaoka 1 and 2 in Japan, the Phénix fast breeder reactor in France and the Ignalina 2 reactor in Lithuania).

### The future



Taking into account the average lifetime of 40 years per reactor worldwide and assuming that all planned new reactors will become operational

YEAR	ON-LINE REACTORS
2010	438
2015	398 (38 fewer than in 2010)
2016-2025	206 (230 fewer than in 2010)

#### Sources:

- Mycle Schneider, Steve Thomas, Antony Froggatt, Doug Koplow, *The World Nuclear Industry Status Report 2009*, Berlin (2009), German Federal Ministry of Environment, Nature Conservation and Reactor Safety: [www.bmu.de/english/nuclear\\_safety/downloads/doc/44832.php](http://www.bmu.de/english/nuclear_safety/downloads/doc/44832.php).
- International Atomic Energy Agency (IAEA), *Power Reactor Information System*: [www.iaea.org/pris](http://www.iaea.org/pris).

## Overview of existing and planned nuclear power plants in the EU

country	operating	closing date (based on 40 years operating time)	under construction	remarks	plans	remarks	shut down
Belgium	7	2014 – 2025	-		-		1
Bulgaria	2	2027 – 2031	-		2	budget more than doubled, no financing	4
Czech Republic	6	2025 – 2032	-		2	EIA started	-
Finland	4	2017 – 2020	1	budget doubled, severe delay	3	EIA ongoing	-
France	58	2013 – 2039	1	over budget, severe delay	1	only vague plan, no financial commitments	12
Germany	17	2010 – 2021 <sup>1)</sup>	-		-		19
Hungary	4	2022 – 2027	-		1	only vague plan, no financial commitments	-
Italy	-		-		-		4
Lithuania	-		-		2	EIA contested in court, no financial commitments	2
Netherlands	1	2033 <sup>2)</sup>	-		1	EIA started, no financial commitments	1
Romania	2	2026 – 2047	-		2	EIA ongoing, no financing	-
Slovakia	4	2017 – 2039	2	construction despite ongoing EIA <sup>3)</sup>	1	only plan, construction not yet started	3
Slovenia	1	2021	-		1	only vague plan, no financial commitments	-
Spain	8	2011 – 2028	-		-		2
Sweden	10	2011 – 2025	-		-		3
United Kingdom	19	2010 – 2035	-		10	only vague plans	26
<b>total EU</b>	<b>143</b>		<b>4</b>		<b>26</b>		<b>77</b>

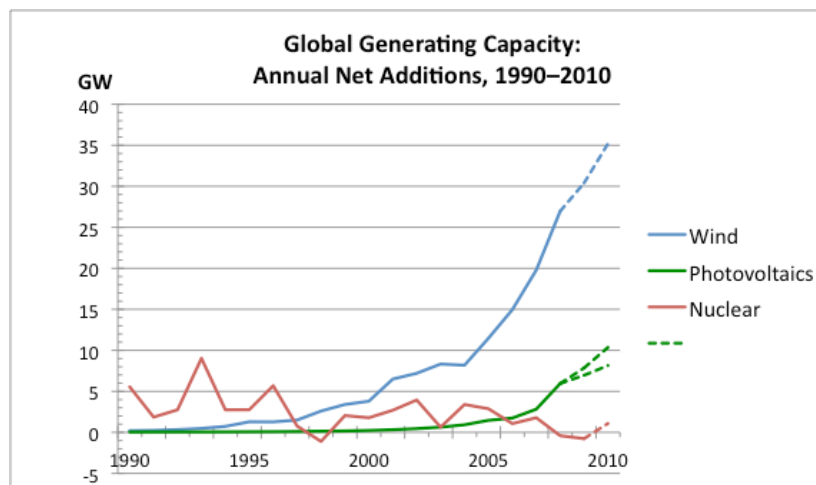
<sup>1)</sup> In Germany average reactor life time is (currently) limited to 32 years

<sup>2)</sup> In the Netherlands reactor life-time was extended to 60 years

<sup>3)</sup> Environmental Impact Assessment (EIA)

SOURCE: IAEA Power Reactor Information System.

## New energy-generating capacity for the wind, photovoltaic and nuclear sectors



Annual net additional energy-generating capacity between 1990 and 2008 (forecasts for 2008-2010).

Source: Amory B. Lovins, *Proliferation, oil, and climate: solving for pattern*, expanded version of 18 January 2010 essay for FOREIGN POLICY: *Proliferation, climate and oil: solving for pattern*, 17 January 2010.

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