

NUCLEAR ENERGY

In 2010 nuclear energy provided nearly 22% of total electricity supply in OECD countries (and 14% of the world's electricity). However, the use of nuclear energy varies widely. In all, 18 of the 34 OECD countries use nuclear energy at present, with eight generating one-third or more of their power from this source in 2010. Collectively, OECD countries produce about 83% of the world's nuclear energy. The remainder is produced in 12 non-OECD economies.

Overview

Nuclear energy expanded rapidly in the 1970s and 1980s, but in the last 20 years only small numbers of new nuclear power plants have entered operation. The role of nuclear energy in reducing greenhouse gas emissions and in increasing energy diversification and security of supply has been increasingly recognised over the last few years, leading to renewed interest in building new nuclear plants in several countries. However, the accident at the Fukushima Daiichi nuclear power plant in Japan following a major earthquake and tsunami in March 2011 has led some countries to review their nuclear programmes. Nuclear capacity may thus grow more slowly than had been expected, at least over the next few years.

Much of the future growth in nuclear capacity is expected to be in non-OECD countries. China in particular has begun a rapid expansion of nuclear capacity, starting construction of 10 additional units during 2010. India and the Russian Federation also have several new plants under construction. Among OECD countries, Finland, France, Japan, Korea, the Slovak Republic and the United States all presently have one or more nuclear plants under construction, while Poland and Turkey are actively planning their first nuclear units.

The analysis in the International Energy Agency's *Energy Technology Perspectives 2012*, indicates that, as part of a scenario to limit global temperature rise to two degrees, nuclear generating capacity could rise from 370 GW at present to around 1 100 GW by 2050, supplying almost 20% of global electricity. This would be a major contribution to cutting the emissions of greenhouse gases from the electricity supply sector. However, uncertainties remain concerning the successful construction and operation of the next generation of nuclear plants, public and political acceptance of nuclear energy in the wake of the Fukushima Daiichi accident, and the extent to which other low-carbon energy sources are successfully developed.

Definition

Shown is nuclear electricity generation in terawatt hours (TWh) and the percentage share of nuclear in total electricity generation.

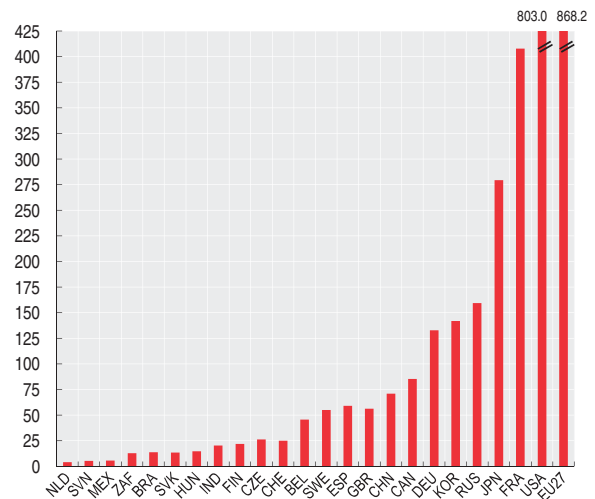
The table also provides information on the number of nuclear power plants in operation and under construction as of 1 June 2012.

Comparability

Some generation data are provisional and may be subject to revision. Generation data for Japan are for the fiscal year.

Nuclear electricity generation

Terawatt hours, 2010



StatLink <http://dx.doi.org/10.1787/888932708085>

Sources

- Nuclear Energy Agency (NEA) (2012), *Nuclear Energy Data*, OECD Publishing.
- Data for non-OECD countries provided by the International Atomic Energy Agency (IAEA).

Further information

Analytical publications

- International Energy Agency (IEA) (2012), *Energy Technology Perspectives*, IEA, Paris.
- NEA (2012), *The Role of Nuclear Energy in a Low Carbon Future*, Nuclear Development, OECD Publishing.
- NEA, International Atomic Energy Agency (IAEA) (2012), *Uranium 2011: Resources, Production and Demand*, OECD Publishing.

Websites

- Nuclear Energy Agency, www.oecd-nea.org.

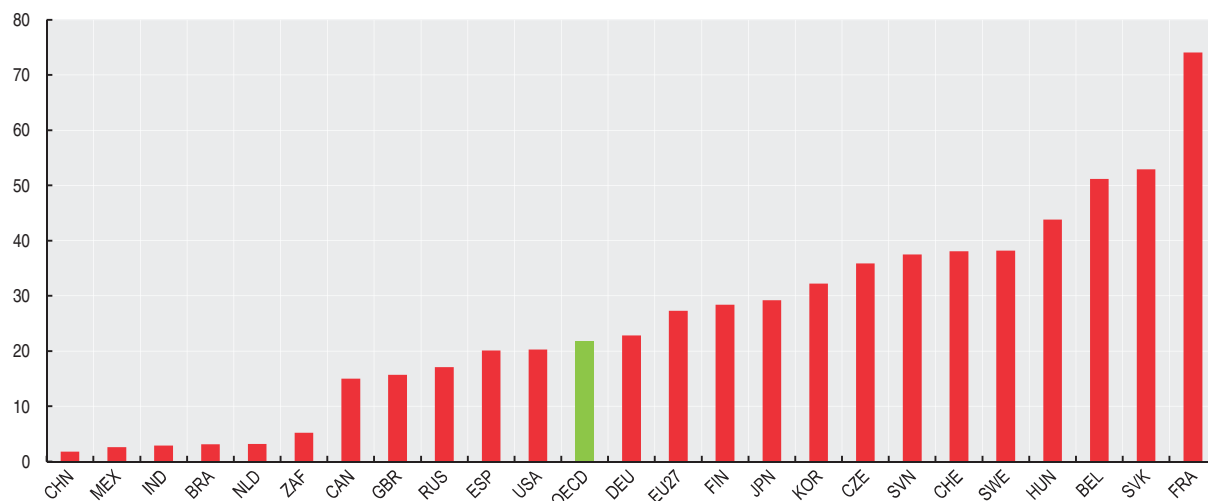

Nuclear electricity generation and nuclear plants

	2010		Number as at 1 June 2012	
	Terawatt hours	As a percentage of total electricity generation	Plants connected to the grid	Plants under construction
Australia	-	-	-	-
Austria	-	-	-	-
Belgium	45.7	50.0	7	-
Canada	85.3	15.0	17	-
Chile	-	-	-	-
Czech Republic	26.4	33.2	6	-
Denmark	-	-	-	-
Estonia	-	-	-	-
Finland	21.9	28.4	4	1
France	407.9	74.1	58	1
Germany	133.0	24.5	9	-
Greece	-	-	-	-
Hungary	14.8	42.8	4	-
Iceland	-	-	-	-
Ireland	-	-	-	-
Israel	-	-	-	-
Italy	-	-	-	-
Japan	279.3	29.2	50	2
Korea	142.0	32.2	23	3
Luxembourg	-	-	-	-
Mexico	5.6	2.6	2	-
Netherlands	4.0	3.2	1	-
New Zealand	-	-	-	-
Norway	-	-	-	-
Poland	-	-	-	-
Portugal	-	-	-	-
Slovak Republic	13.5	52.9	4	2
Slovenia	5.4	37.5	1	-
Spain	59.2	20.1	8	-
Sweden	59.2	38.2	10	-
Switzerland	25.2	38.0	5	-
Turkey	-	-	-	-
United Kingdom	56.4	15.7	16	-
United States	803.0	20.3	104	1
EU 27	868.2	27.4	132	4
OECD	2 183.7	21.8	329	11
Brazil	13.9	3.1	2	1
China	71.0	1.8	16	26
India	20.5	2.9	20	7
Indonesia	-	-	-	-
Russian Federation	159.4	17.1	33	11
South Africa	12.9	5.2	2	-
World	2 630.0	13.5	435	62

StatLink  <http://dx.doi.org/10.1787/888932708047>

Nuclear electricity generation

As a percentage of total electricity generation, 2010

StatLink  <http://dx.doi.org/10.1787/888932708066>



From:
OECD Factbook 2013
Economic, Environmental and Social Statistics

Access the complete publication at:
<https://doi.org/10.1787/factbook-2013-en>

Please cite this chapter as:

OECD (2013), "Nuclear energy", in *OECD Factbook 2013: Economic, Environmental and Social Statistics*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/factbook-2013-44-en>

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