

# NUCLEAR *facts*

## *How important is nuclear energy in the world?*



AS OF OCTOBER 2009 THERE WERE 436 NUCLEAR POWER REACTORS OPERATING IN 30 COUNTRIES  
AROUND THE WORLD PRODUCING ABOUT 15% OF THE WORLD'S ELECTRICITY.

### World Reactor Capacity, October 2009

Country or area	Operable		Under construction		Planned		Proposed	
	No.	MWe	No.	MWe	No.	MWe	No.	MWe
Argentina	2	935	1	692	1	740	1	740
Armenia	1	376	0	0	0	0	1	1000
Bangladesh	0	0	0	0	0	0	2	2000
Belarus	0	0	0	0	2	2000	2	2000
Belgium	7	5728	0	0	0	0	0	0
Brazil	2	1901	0	0	1	1245	4	4000
Bulgaria	2	1906	0	0	2	1900	0	0
Canada	18	12652	2	1500	4	4400	3	3800
China	11	8587	17	17540	34	36380	90	79000
Czech Republic	6	3686	0	0	0	0	2	3400
Egypt	0	0	0	0	1	1000	1	1000
Finland	4	2696	1	1600	0	0	1	1000
France	59	63473	1	1630	1	1630	1	1630
Germany	17	20339	0	0	0	0	0	0
Hungary	4	1826	0	0	0	0	2	2000
India	17	3779	6	2976	23	21500	15	20000
Indonesia	0	0	0	0	2	2000	4	4000
Iran	0	0	1	915	2	1900	1	300
Israel	0	0	0	0	0	0	1	1200
Italy	0	0	0	0	0	0	10	17000
Japan	53	46236	2	2285	13	17915	1	1300
Kazakhstan	0	0	0	0	2	600	2	600
Korea DPR (North)	0	0	0	0	1	950	0	0
Korea RO (South)	20	17716	6	6700	6	8190	0	0
Lithuania	1	1185	0	0	0	0	2	3400
Mexico	2	1310	0	0	0	0	2	2000
Netherlands	1	485	0	0	0	0	0	0
Pakistan	2	400	1	300	2	600	2	2000
Poland	0	0	0	0	0	0	5	10000
Romania	2	1310	0	0	2	1310	1	655
Russia	31	21743	9	7130	7	8000	37	36680
Slovakia	4	1760	2	840	0	0	1	1200
Slovenia	1	696	0	0	0	0	1	1000
South Africa	2	1842	0	0	3	3565	24	4000
Spain	8	7448	0	0	0	0	0	0
Sweden	10	9399	0	0	0	0	0	0
Switzerland	5	3237	0	0	0	0	3	4000
Thailand	0	0	0	0	2	2000	4	4000
Turkey	0	0	0	0	2	2400	1	1200
Ukraine	15	13168	0	0	2	1900	20	27000
UAE	0	0	0	0	3	4500	11	15500
United Kingdom	19	11035	0	0	4	6400	4	6000
USA	104	101119	1	1180	11	13800	19	25000
Vietnam	0	0	0	0	2	2000	8	8000
<b>WORLD*</b>	<b>436</b>	<b>372,900</b>	<b>52</b>	<b>47,888</b>	<b>135</b>	<b>148,825</b>	<b>295</b>	<b>303,405</b>

Reactor data: WNA to 1/10/09

\* The world total includes 6 reactors operating on Taiwan with a combined capacity of 4927 MWe, which generated a total of 39.3 billion kWh in 2008 (accounting for 17.1% of Taiwan's total electricity generation). Taiwan has two reactors under construction with a combined capacity of 2600 MWe, and six proposed, total 8000 MWe.



*Nuclear power now produces about 14% of the world's electricity supply, and is an important alternative to fossil fuels.*

France, which gets 76% of its electricity from nuclear power, Lithuania, which gets 73% and Belgium, which gets 54%, rely most heavily on nuclear energy. Fifteen countries rely on nuclear energy to provide more than one-quarter of their electricity supply. The United States has the largest nuclear generating capacity in the world with 104 reactors in operation, generating almost 20% of the power required by Americans. Here in Canada, about 15% of all the electricity produced comes from nuclear power plants. Ontario's 16 operating reactors produced 53% of that province's electricity in 2009.

### A clean alternative

More nations are looking at nuclear power to reduce the serious environmental consequences of burning fossil fuels. Producing electricity from uranium does not release combustion gases into the atmosphere that contribute to such environmental problems as acid rain, the greenhouse effect, and urban smog.

Many nations deciding on how best to meet existing and future international commitments to reduce greenhouse gas emissions are expected to give serious consideration to these environmental advantages of nuclear energy.

### A growing need in the world

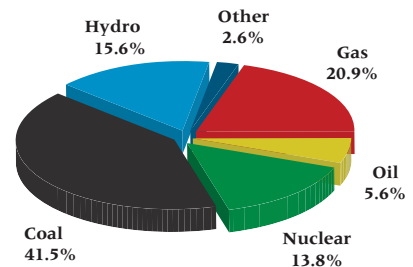
The use of nuclear energy for the production of electricity is not only an appropriate alternative for industrialized countries; it is becoming the preferred choice for developing countries that do not have natural energy resources in their own territory. This is particularly true of countries within the Pacific Rim. The reliable and economic electricity from their nuclear power plants has been a significant factor in the development of the strong economies of countries such as South Korea. Today, nuclear power provides 36% of South Korea's electricity with an additional six reactors under construction. China's 11 operable reactors include two CANDU units (See Nuclear Facts – "What is the Qinshan Project?"), 17 reactors under construction, 34 reactors in the planning phase and an additional 90 proposed.

Availability of electricity at a competitive cost has placed these countries at the forefront of international competition. Japan, which gets about a quarter of its electricity from its 53 operating reactors, continues to build and plan more nuclear units.

In Europe, Finland and France are constructing third generation nuclear power plants while the United States has committed to build new generation plants within the next few years. Countries with emerging international economies, as well as developing nations, will require vast supplies of energy if they are to grow

productively while providing better health and food for their growing populations. The options for these emerging economies are often very limited, as most of them are not energy-rich like Canada. Their choices in many instances are to cut and burn their forests, to use vast quantities of local or imported coal, or to build and operate their own nuclear power reactors. Without secure and dependable supplies of electricity, many of these countries would remain impoverished and underdeveloped.

### Global Electricity Generation



*Nuclear power produces 13.8% of global electricity and is the world's fourth largest source of electricity.*

### Nuclear power is not new

Splitting the uranium atom to generate the heat that is used to produce steam for the production of electricity has been a commercial reality for more than 45 years. The world's electric utilities have more than 10,000 reactor years of operating experience.

Canada is the world's largest supplier of uranium to electric utilities worldwide. This availability of uranium, combined with Canada's CANDU, will keep Canada at the forefront in nuclear energy well into the new millennium.

*See also the Web sites of the International Atomic Energy Agency [www.iaea.org](http://www.iaea.org) and the World Nuclear Association [www.world-nuclear.org](http://www.world-nuclear.org)*

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