

# Press Release

Contact: C. G. Steiner  
Phone: 913.428.7520

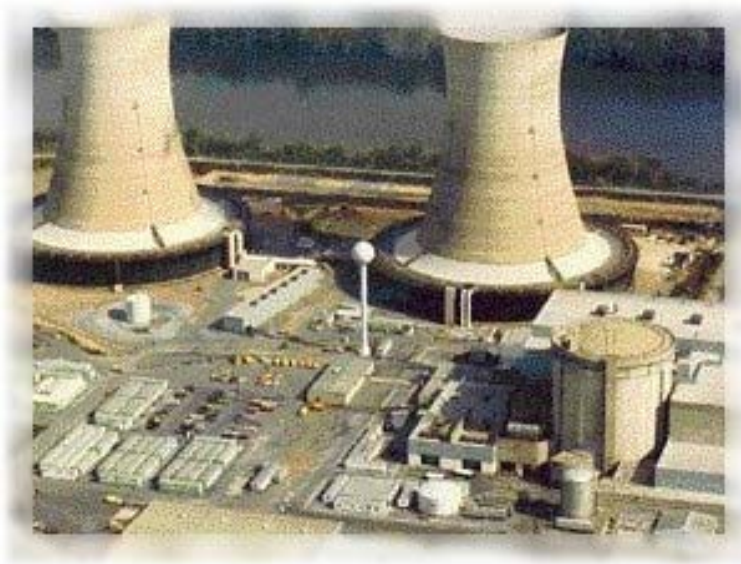
**For Immediate Release**  
Date: May 1, 2011

**Subject: The Conversion of Worldwide Nuclear Power Plants to Combined Cycle Renewable Energy with associated electricity distribution to the marketplace priced at US\$0.03/kWh as a public service.**

**WaterSmart Power**, a Division of *WaterSmart Environmental, Inc.*, announces its intention to convert all nuclear power plants, wherever situated, to **Combined Cycle Renewable Energy** that will produce twice as much electrical power as the nuclear power plant it directly replaces. The produced power will be distributed by **WaterSmart Power** at the attractive price of US\$0.03/kWh on a forever basis. All such construction and installation work will be funded by **WaterSmart Financial**, a Division of *WaterSmart Environmental, Inc.* as a public service. The actual work will be performed by **BioWaste Power Constructors**, a Division of *WaterSmart Environmental, Inc.*

**Notwithstanding the several false claims of the United States Environmental Protection Agency, otherwise operating as a Business Protection Agency**, that Nuclear Power represents clean energy without harm to the environment (see our May 28, 2008, October 27, 2008, and March 3, 2009 Press Releases at [http://www.watersmart.com/Press\\_Releases.html](http://www.watersmart.com/Press_Releases.html)) the ground zero facts tell a far different environmental story. There are now over 400 nuclear power plants worldwide that will be converted, including the failed plants in Japan and Ukraine. **WaterSmart Power** will take full responsibility for the continuing environmental management of spent fuel rods such that radioactive wastes will be permanently enclosed in a protective concrete/steel structure as disclosed in the above referenced March 3, 2009 Press Release. **WaterSmart Financial**, a Division of *WaterSmart Environmental, Inc.*, will provide a US\$5 Billion Contract Performance Surety Bond for each such nuclear power plant conversion project. This technology emerges at a wonderful time in that the future continuance of nuclear power is doomed because of associated safety issues that include food, air, ground, and groundwater radiation concerns.

The only purpose of a nuclear power plant is to produce electricity. To produce electricity, a power plant needs a source of heat to boil water which becomes steam. The steam then turns a turbine, the turbine turns an electrical generator, and the generator produces electricity. In fossil fuel plants the source of heat is burning coal, oil, or gas. In a nuclear plant the source of heat is a nuclear reactor. Although the basic process is simple, making it work is rather complicated as planet earth already knows witness the past disasters at Three Mile Island (March 28, 1979), Chernobyl (April 26, 1986), and now Japan (2011).



### Three Mile Island

Although a nuclear power plant cannot explode like an atomic bomb, accidents can result in serious radioactive pollution. During the past 45 years, there have been a number of not-fully controlled or uncontrolled fission reactions at nuclear power plants in the United States and elsewhere, which have killed or injured power plant workers. These accidents occurred in Los Alamos, New Mexico; Oak Ridge, Tennessee; Richland, Washington; and Wood River Junction, Rhode Island.

The World Nuclear Association estimates that the current number of 443 nuclear reactors active worldwide can double in the next 15 years.

As of 2008, nuclear power in the United States is provided by 104 commercial reactors (69 pressurized water reactors and 35 boiling water reactors) licensed to operate at 65 nuclear power plants, producing a total of 806.2 TWh of electricity, which was 19.6% of the nation's total electric energy consumption in 2008. The United States is the world's largest supplier of commercial nuclear power.

Ground has been broken on two new nuclear plants with a total of four reactors. The only reactor currently under construction in America, at Watts Bar, Tennessee, was begun in 1973 and may be completed in 2012. Of the 104 reactors now operating in the U.S., ground was broken on all of them in 1974 or earlier. In September 2010, Matthew Wald from the *New York Times* reported that "the nuclear renaissance is looking small and slow at the moment". Mr. Warren Buffet goes a step further in announcing that the future of Nuclear Industry is now dead because of the failed nuclear reactors in Japan ostensibly caused by a faulty General Electric design.

Following the 2011 Japanese nuclear accidents, the U.S. Nuclear Regulatory Commission has announced it will launch a comprehensive safety review of the 104 nuclear power reactors across the United States, at the request of President Obama. The Obama administration "con-

tinues to support the expansion of nuclear power in the United States, despite the crisis in Japan". Following the Japanese nuclear emergency, public support for building nuclear power plants in the U.S. dropped to 43%, slightly lower than it was immediately after the Three Mile Island accident in 1979, according to a CBS News poll.

Nuclear Power Plants rely on a baseload supply of electricity. Baseload demand is the minimum amount of power that a utility or distribution company must make available to its customers, or the amount of power required to meet minimum demands based on reasonable expectations of customer requirements. Baseload values typically vary from hour to hour in most commercial and industrial areas.

A baseload power station is an energy plant devoted to the production of baseload supply. Baseload plants are the production facilities used to meet some or all of a given region's continuous energy demand, and produce energy at a constant rate, usually at a low cost relative to other production facilities available to the system. Examples of baseload plants using non-renewable fuels include nuclear and coal-fired plants. Among the renewable energy sources, hydroelectric, geothermal, biogas, biomass, solar thermal with storage along with ocean thermal energy conversion can provide baseload power. Baseload plants typically run at all times through the year except in the case of repairs or scheduled maintenance. Hydroelectric power also has the desirable attribute of dispatchability, but a hydroelectric plant may run low on its fuel (water at the reservoir elevation) if a long drought occurs over its drainage basin.

Each baseload power plant on a grid is allotted a specific amount of the baseload power demand to handle. The base load power is determined by the load duration curve of the system. For a typical power system, the rule of thumb is that the base load power is usually 35-40% of the maximum load during the year.

Peaks or spikes in customer power demand are handled by smaller and more responsive types of power plants called peaking power plants, typically powered with gas turbines.

While historically large power grids have had base load power plants to exclusively meet the base loads, there is no specific technical requirement for this to be so. The baseload can equally well be met by the appropriate quantity of intermittent power sources and peaking power plants.

The first step is the same as the simple cycle gas turbine plant. Burning of gas, the thrust rotating a gas turbine and the coupled generator produces electricity. In the second step the hot gases leaving the gas turbine passes into boiler to produce steam. This boiler is called the 'Heat Recovery Steam Generator' (HRSG). The steam then rotates the steam turbine and coupled generator to produce electricity. The hot gases leave the HRSG at around 140 degrees Celsius and are discharged into the atmosphere. The steam condensing, and water recycling system is the same as in the steam power plant. The attached animation shows the working of the CCPP.

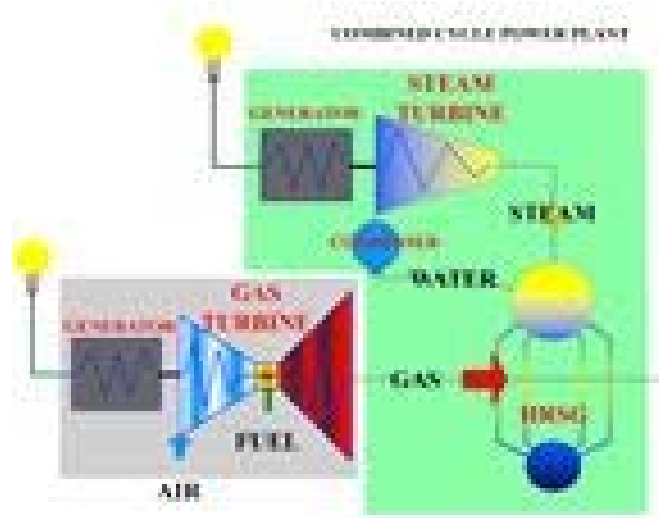
Roughly the steam turbine cycle produces one third of the power and gas turbine cycle produces two thirds of the power output of the CCPP. Normally there will be two generators, one driven by the gas turbine and one driven by the steam turbine. There are also systems with one generator connected through a single shaft to both the gas turbine and steam turbine.

Even though this system is having the best efficiency, it has limitations. The gas turbine can only use Natural gas or high grade oils like aviation or diesel fuel. Because of this the com-

bined cycle can be operated only in locations where these fuels are available and cost effective.

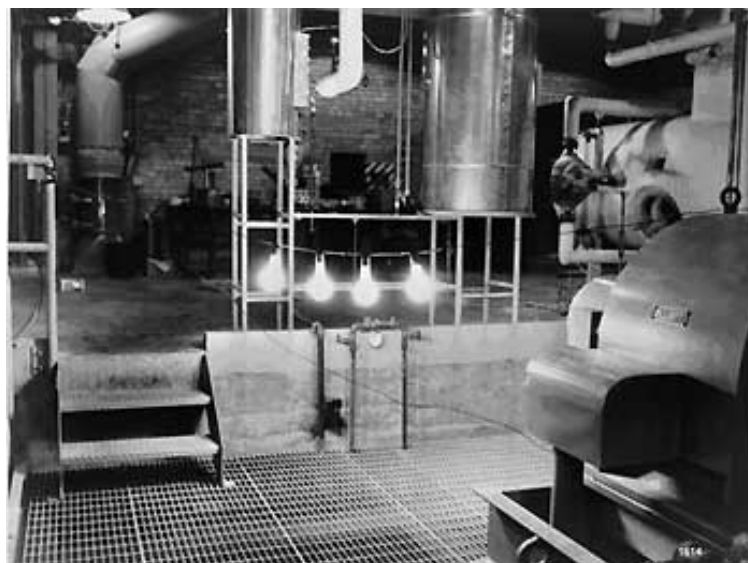
Developments for gasification of coal and use in the gas turbine are in advanced stages. Once this is proven, Coal as the main fuel can also be used in the combined cycle power plant.

### **CCPP Scheme**



### **NUCLEAR POWER PLANTS, WORLD-WIDE**

On December 20, 1951, at the Experimental Breeder Reactor EBR-I in Arco, Idaho, USA, for the first time electricity - illuminating four light bulbs - was produced by nuclear energy. EBR-I was not designed to produce electricity but to validate the breeder reactor concept.



**First electricity production by nuclear energy  
Experimental Breeder Reactor EBR-I, 20 Dec.1951, Arco, Idaho, USA**

On June 26, 1954, at Obninsk, Russia, the nuclear power plant APS-1 with a net electrical output of 5 MW was connected to the power grid, the world's first nuclear power plant that generated electricity for commercial use. On August 27, 1956 the first commercial nuclear power plant, Calder Hall 1, England, with a net electrical output of 50 MW was connected to the national grid.

As of Jan 19, 2011 in 30 countries 442 nuclear power plant units with an installed electric net capacity of about 375 GW are in operation and 65 plants with an installed capacity of 63 GW are in 16 countries under construction.

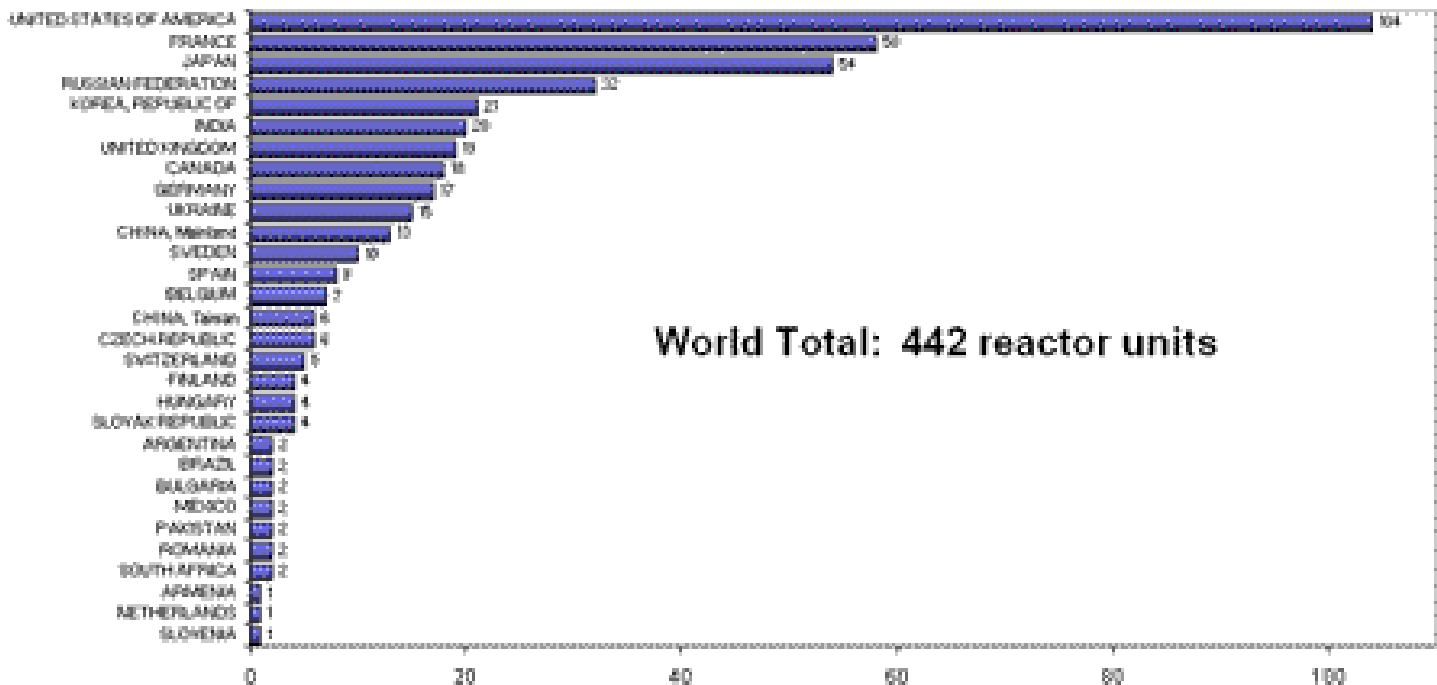
As of end 2009 the total electricity production since 1951 amounts to 64,600 billion kWh. The cumulative operating experience amounted to 14,174 years by September 2010.

Country	In operation			
	Number	Electricity Net Output, MW	Number	Electricity Net Output, MW
Argentina	2	935	1	692
Armenia	1	375	-	-
Belgium	7	5,926	-	-
Brazil	2	1,884	1	1,245
Bulgaria	2	1,906	2	1,906
Canada	18	12,569	-	-
China				
• Mainland	13	10,048	27	27,230
• Taiwan	6	4,980	2	2,600
Czech Republic	6	3,722	-	-
Finland	4	2,716	1	1,600
France	58	63,130	1	1,600
Germany	17	20,490	-	-
Hungary	4	1,889	-	-
India	20	4,391	5	3,564
Iran	-	-	1	915
Japan	54	46,823	2	2,650
Korea, Republic	21	18,665	5	5,560
Mexico	2	1,300	-	-

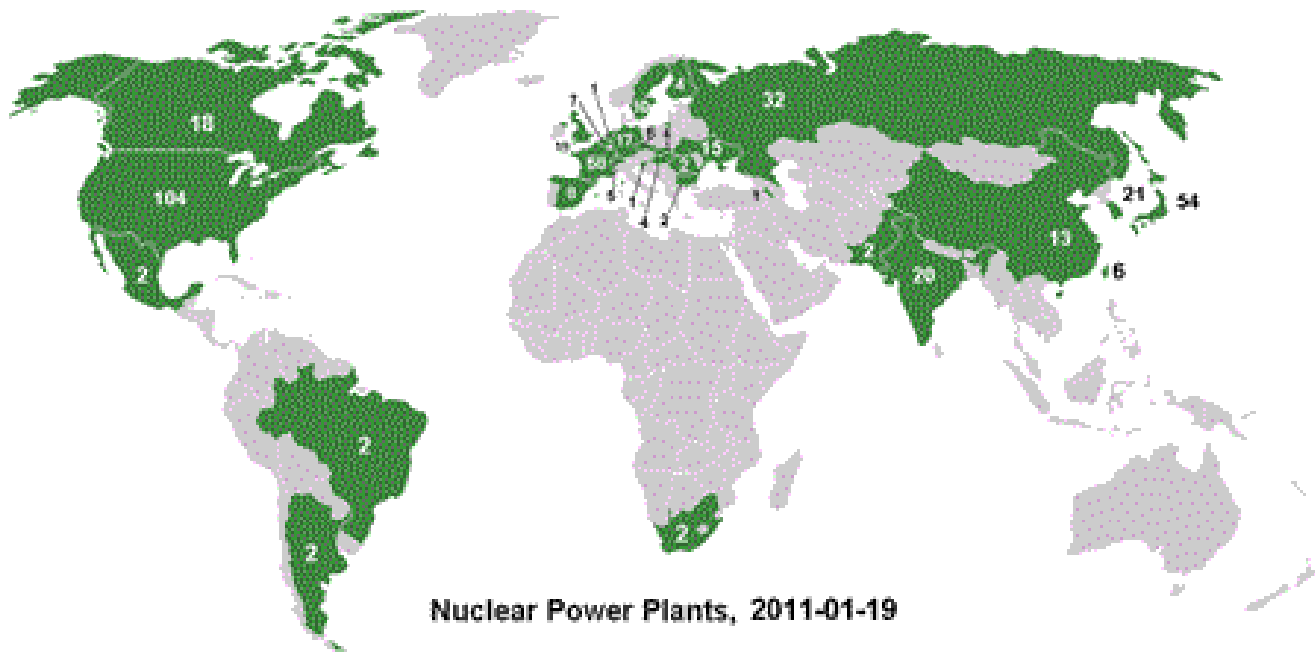
Netherlands	1	487	-	-
Pakistan	2	425	1	300
Romania	2	1,300	-	-
Russian Federation	32	22,693	11	9,153
Slovakian Republic	4	1,792	2	782
Slovenia	1	666	-	-
South Africa	2	1,800	-	-
Spain	8	7,514	-	-
Sweden	10	9,303	-	-
Switzerland	5	3,238	-	-
Taiwan	6	4,980	2	2,600
Ukraine	15	13,107	2	1,900
United Kingdom	19	10,137	-	-
USA	104	100,747	1	1,165
<b>Total</b>	<b>442</b>	<b>374,958</b>	<b>65</b>	<b>62,862</b>

**Nuclear power plants world-wide, in operation and under construction, as of Jan 19, 2011**

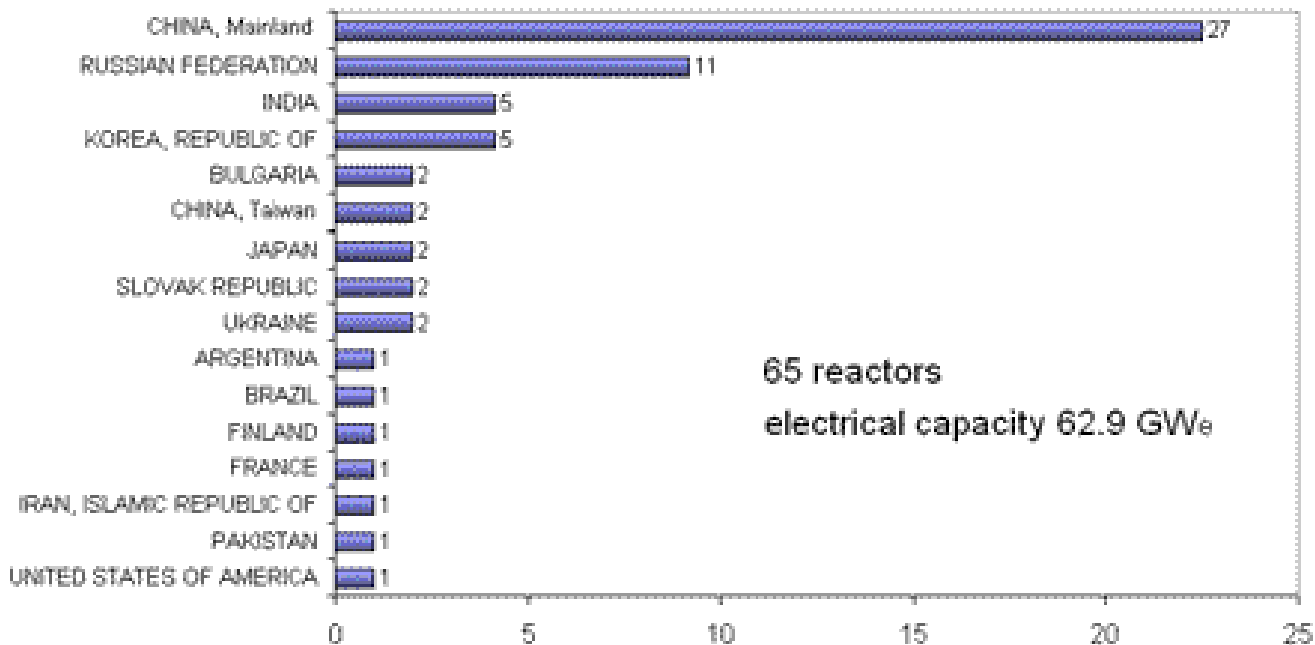
### Number of Reactors in Operation Worldwide



**Number of reactors in operation, worldwide, Jan 19, 2011 (IAEA 2011, modified)**

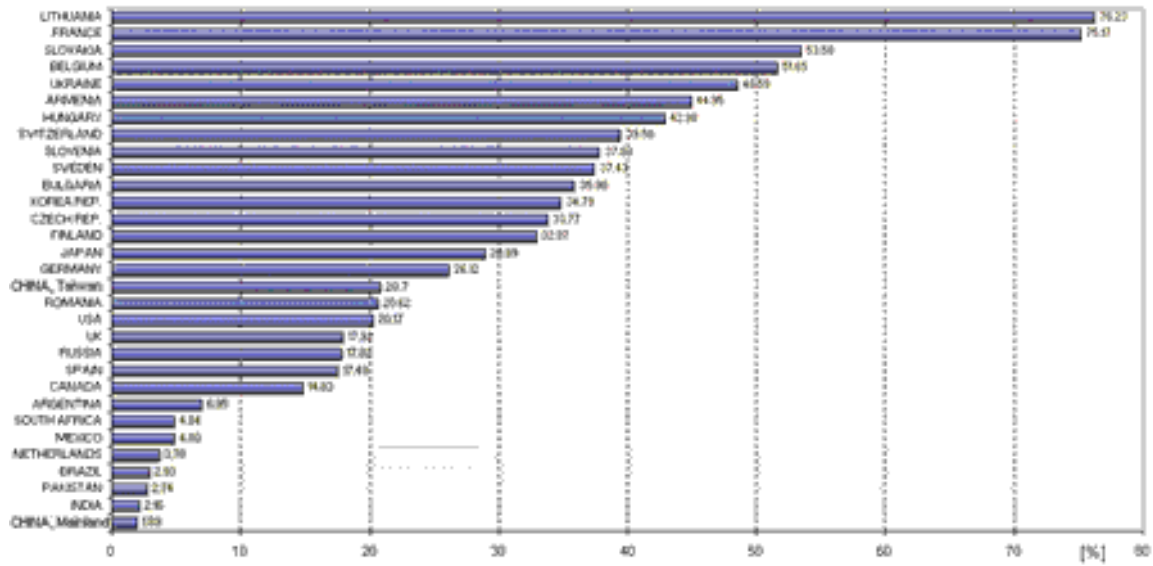


### Number of Reactors under Construction Worldwide



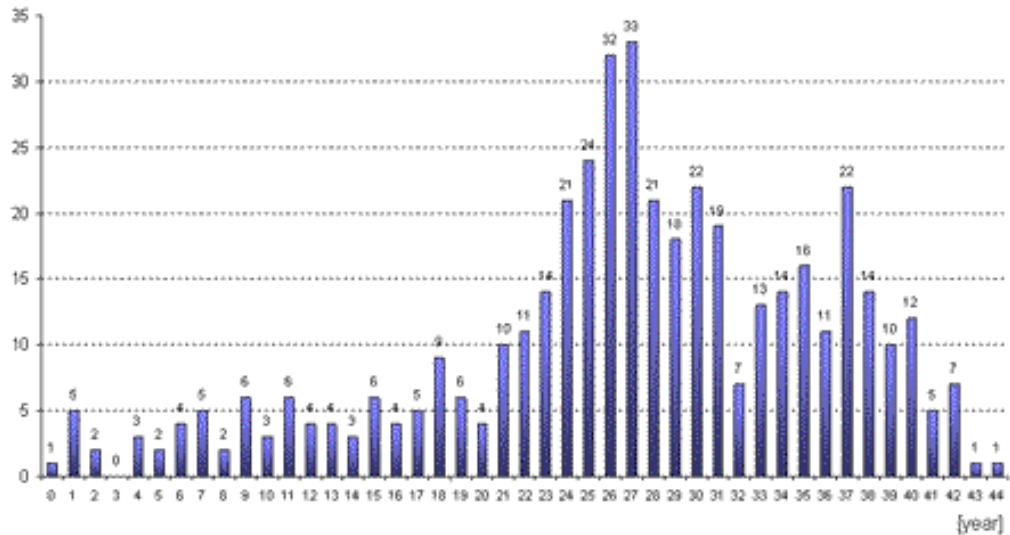
Nuclear power plants under construction, Jan 19, 2011 (IAEA 2011, modified)

## Nuclear Share in Electricity Generation in 2009

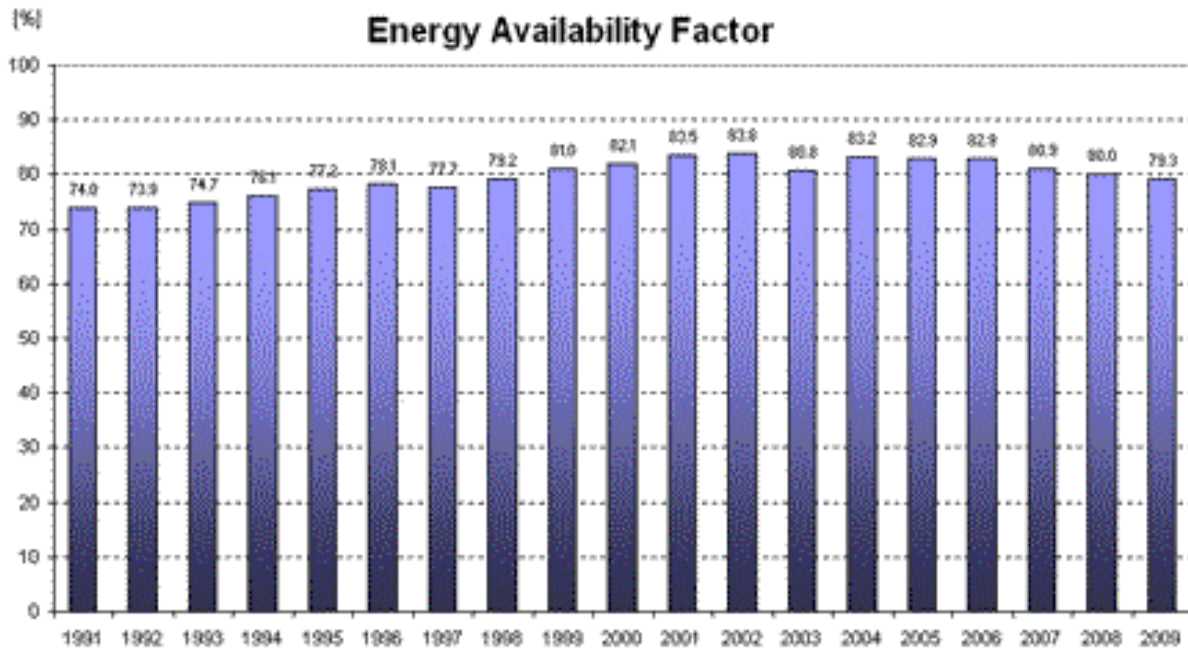


Nuclear share in electricity generation, 2009 (IAEA 2010, modified)

## Number of Operating Reactors by Age



Number of nuclear reactors worldwide by age as of January 2011 (IAEA 2011)



**Nuclear Power Plants, energy availability factor 1991 - 2009 (IAEA 2010)**

**WaterSmart Environmental, Inc.** is a provider of waste-to-energy, food independence, water independence, and energy independence technologies and a manufacturer of highly engineered water purification components and systems. The company designs and builds a wide variety of water treatment equipment including packaged water and wastewater treatment plants, UltraPac™ aerobic package plants, OAT™ Process anaerobic digesters with associated energy production, aerators, filters, Pur-iSep™ and SmartWater™ oil/water and solids/liquids separators, RainDrain™ perimeter trench sand filters for stormwater runoff, dissolved air flotation separators, air strippers, complete skid assembled aqueous waste treatment plants, FilterFresh™ skid mounted potable water production plants, skid mounted wastewater treatment systems for laundromats, commercial laundries, and car/truck wash facilities with water reclamation and reuse, softeners, demineralizers, activated carbon treatment equipment, and water purifiers for domestic and international markets.



*Worldwide Promoters of Renewable Energy, Organic Foods, Biofuels,  
& Water Independence Technologies by and for the Common Man*