# Power Plant Installation Cost

International Environmental Initiatives - http://www.iclei.org/efacts
US Government International Energy Outlook - http://www.eia.gov
International Energy Agency - http://www.iea.org

**Solar Thermal Power Plants - STPP**
So far the capital cost are estimated to be 4,000 ECU / kWe dropping to 2,500 ECU / kWe in 10 years with production sales price of app 2 cent/kWh. No plant >10 MW has yet been installed. So far the California based 10 MW Solar One has the longest experience based on old fashion technology.

**Photo Voltaic - PV**
So far one of the most expensive ways of producing electricity, with installation cost exceeding 5,000 ECU / kWe. Amazingly enough still receiving the highest amount of government funding! PV gives typically 5-10 years lifetime, 5-10 % efficiency and current production sales price of 3 - 5 cent/kWh. The worldwide production capacity increased from 60 MW in 1994 to 130 MW in 1997 and in the range of 200 MW year 2001. Which is equivalent with 4000 ton of Silicon wafers or it takes 20 ton for one MW of PV! The marked size was 1,2 $x10^9$ ECU in year 2000 and expect to increase with 24% annually until 2007. Technically the marked is divided into two technologies; Float Zone Si / FZ and Czochralski Si / CZ. The total Si crystal marked is app 6 $x10^9$ ECU and the marked share split into 3% for FZ and 97% for CZ.

**Wind Power Plants**
Installed global wind power is year 1997 in the range of 18 gigaWatt increasing to 30 gigaWatt with year 2000 and capacity of 34 teraWatt/hour. Supplying 0.1 % of the global electricity with 0.3 % of installed capacity. Installation cost started at 3,000 ECU / kWe years back, now down to as low as 1,000 ECU / kWe with production sales price of 3-4 cent/kWh. Expected to drop further to 650 ECU / kWe in 2020 with sales price of 1 cent/kWh.

http://www.windpoweronline.com
http://www.awea.org

**Fossil Fired Power Plants**
Installation cost has for a long time been 1,200 ECU / kWe and sales price of 1-2 cent/kWh.
The Energy Information Administration (EIA) estimates Saudi Arabia's remaining oil reserves at 261 billion barrels, or enough for about 90 years at the current production rate of 8 million barrels a day.
Coal still provides a large portion of the world's energy requirements, accounting for some 30% of worldwide electricity generation

**Nuclear Power Plants**
Current there is app 434 A-plant on the globe according to *International Atomic Energy Agency Power Reactor Information System*. Worldwide in 1998, total nuclear generated electricity increased to 2291.4 teraWatt/hour, supplying 16% of the world's electricity demand. This increased with almost 5% to 2398 TWh in 1999.
Some 30 is currently under construction bringing this total number up to 464. Several in sizes as large as 1,000 MW sizes at the cost of (2,000 ECU/kWe)

**Hydro Power Plants**
Hydro power is currently the world's largest renewable source of electricity, accounting for 2.3% of worldwide energy supply or about 15% of the world's electricity. Installed Hydro Power globally was in 1996 estimated to be 709 GW. Though most of the resources are already developed. In 2020 less than 3% of the world energy will come from hydro power. Which is only 2% increase per year over the next 25 year. Typical capital investment range from 2,000-3,500 ECU/kWe.

**Fuel Cells Plants**
Pure Hydrogen as the fuel gives no emission when passing the full cell. Installation cost for larger systems (>1 MW plant) range 15,000 ECU / kWe

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