

**Nuclear technology is proven.** Nuclear power stations have been supplying electricity reliably for over 50 years. Nuclear technology is already available and proven.

**Nuclear power is safe.** Nuclear energy has a long record of safe operation over its 50-plus years. The only reactor accident with significant external release of radioactive material, the 1986 Chernobyl disaster, involved a unique type of reactor which would no longer be licensed for construction under today's regulations. Modern reactor designs include more safety features than ever before.

**Nuclear Power has a low impact on the environment.** The nuclear fuel cycle produces virtually no emissions of greenhouse gases. Today, nuclear energy provides 15% of the world's electricity. This avoids the release of 2.4 billion tonnes of CO<sub>2</sub> into the atmosphere.

Nuclear wastes consist of small amounts of manageable materials that can be securely isolated and lose their hazard with time.

## Energy: A condition for social and economic development

Energy is, and will continue to be, a primary engine for human and economic development. It is vital for every aspect of modern life: heat, light, mobility, communications, clean water, agricultural and industrial capacity.

As a country develops, its electricity consumption increases. The per capita consumption of electricity correlates with a country's social and economic well-being.

Today, an estimated one quarter of the world's population - 1.6 billion people - have no access to electricity.

Global energy consumption is inequitable: one quarter of the world's population consumes nearly two thirds of its resources.



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## The need for clean energy

The challenge of the 21st century is to supply energy in sufficient quantity to everyone, at an affordable cost, whilst protecting the environment.

- Demand for energy has exploded since the beginning of the 20th century, in conjunction with the world's rising population and economic growth. By 2050, world energy consumption is expected to double, and demand for electricity treble, driven by emerging and developing countries such as China, India and Brazil.
- A diverse and secure energy supply has become a necessity. Fossil energy sources are being depleted, and the supply of hydrocarbon fuels is vulnerable to geopolitical pressures.
- As developing countries strive to meet their energy needs, the result could be a dangerously large increase in global emissions of carbon dioxide.

As a first step, we must all make significant changes in our lifestyles to promote energy conservation.

Meeting global needs will nevertheless require the mobilization of all types of energy sources. Today, 64% of the world's electricity comes from fossil fuels, followed by hydro (19%), and nuclear (15%). There is no prospect that we can do without any of these. But the current dependence on fossil fuels (coal, oil and gas) cannot be sustained.

Renewables such as wind and solar should play an increasingly important role. However, they will need to be used in collaboration with nuclear generation, which can provide continuous, reliable supplies of electricity on a large scale.

## Nuclear power: a unique potential as a large-scale sustainable energy source

**Nuclear Power is competitive.** Once built, a nuclear power plant operates with great economy. Nuclear fuel costs including the costs of taking full responsibility for managing and disposing of wastes, represent a small fraction of overall generation costs.

**Nuclear Power has security of supply.** Uranium resources are widely distributed, with 46% of known reserves located in OECD countries.