

FACTS ABOUT... *Energy*

The Problem

Energy is both a solution and a problem for sustainable development. It makes development possible, yet it is also a major cause of air pollution and other damage to human health and the environment.

Two billion people—or one third of the total world population—lack access to modern energy services. They are generally poor, live in rural areas, and rely on burning firewood or biomass for cooking, heat and lighting. While these fuels cost little, they contribute to indoor air pollution, resulting in respiratory problems that each year kill over a million children under five. The demand for firewood leads to deforestation in many parts of the world.

Modern energy services, dominated by the burning of fossil fuels, can vastly expand the number of opportunities and choices available to people as they seek to improve their standard of living and to power automobiles, airplanes, factories and homes. Yet such energy generation results in air pollution and emissions of greenhouse gases that contribute to global warming and potential climate change.

The issue is not whether there are enough fossil fuel reserves: it is widely agreed that supplies will meet demand for the foreseeable future. Rather, concerns about present energy policies focus on environmental impacts, on the evidence that modern energy services are not universally accessible — an inequity that has moral, political and practical dimensions in a world that is becoming increasingly interconnected.

Key Statistics

- About 2.5 billion people lack access to modern energy services.
- World energy consumption has increased significantly since 1992 and is expected to grow at the rate of 2 per cent a year until 2020.
- Fuelwood consumption is rising with population growth. In South and Southeast Asia, about 2 billion people use wood or other biomass for energy, and in sub-Saharan Africa, more than 500 million people are dependent on fuelwood for energy.
- Global consumption of fossil fuels has increased by 10 per cent from 1992 to 1999. Per capita use

remains highest in developed countries, where people consume an average of 6.4 tons of oil equivalent per year in 1999, or ten times the consumption in developing countries.

- Fossil fuels provide about 80 per cent of total global energy production and consumption, down from about 86 per cent in 1971.
- The greatest increase in energy use has occurred in transportation, where 95 per cent of the energy consumed is derived from petroleum. Energy consumption in this sector is expected to rise at a rate of 1.5 per cent a year in developed countries and 3.6 per cent in developing countries.
- 20 per cent of existing world demand for oil and gas is now in Asia. And even more important, more than 50 per cent of the growth in demand each year comes from that region.
- If the global growth rate of about 2 per cent a year for primary energy use continues, it will mean a doubling of energy consumption by 2035 relative to 1998, and a tripling by 2055.
- Carbon dioxide from the burning of fossil fuels is the largest single source —accounting for 75 per cent — of greenhouse gas emissions from human activities.
- Global carbon emissions doubled between 1965 and 1998, amounting to an average increase of 2.1 per cent per year.
- Nuclear power accounts for 16 per cent of world electricity generation, but there are continuing concerns regarding safety and cost-effectiveness, particularly concerning spent-fuel, radioactive waste, transboundary shipments and decommissioning old plants.
- Modern renewable energy sources, including hydropower, modern biomass and geothermal, wind and solar power, account for about 4.5 per cent of total energy production.

What Needs to Be Done

To meet the anticipated growth in energy demand of 2.5 per cent per year in developing countries,



they will need investments of about 2-2.5 per cent of their GDP annually. Considering that current energy investments total \$290-\$430 billion per year, it will be necessary to mobilize large investments from domestic and foreign sources.

Other energy-related proposals that will be considered by the Summit include efforts to:

- Achieve a fourfold increase in energy and resource efficiency in developed countries by 2012.
- Develop and disseminate renewable energy technologies to raise the share of renewables in energy production and consumption.
- Diversify the energy supply by developing cleaner and more efficient fossil fuel technologies and to increase the share of renewable energy sources to at least 5 per cent in all countries by 2010.
- Encourage the use of natural gas, especially in urban and industrial areas, and eliminate the practice of gas flaring.
- Adopt policies that reduce market distortions in the energy sector by restructuring tax codes and by phasing out harmful subsidies.
- Promote cooperation between oil-consuming and oil-producing countries to reduce major fluctuations and instability in international markets.
- Assist developing countries that are highly dependent on fossil fuels to diversify their economies.
- Promote mass transit and improve transportation efficiency through environmentally friendly vehicles and cleaner fuels.
- Ratify and implement the Kyoto Protocol to the United Nations Framework Convention on Climate Change.