

# Renewables major part of 2050 world energy mix: UN

May 7 2011, by Marlowe Hood

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Wind turbines are seen here at the Belwind wind farm, the first renewable electricity central in Belgium, near the port of Zeebrugge. Renewable power from the Sun, wind, water and biomass can and should generate a major portion of the planet's energy supply by 2050, according to a draft United Nations report obtained by AFP.

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Renewables have the potential to bring power to the world's poorest regions, boost [energy security](#) for nations dependent on imports, and curb the [CO2 emissions](#) that fuel global warming, the draft said.

The 30-page "summary for policy makers" -- boiled down from 1,500 pages -- is being vetted at a May 5-13 meeting of the 194-nation Intergovernmental Panel for Climate Change (IPCC) in Abu Dhabi, and will be unveiled Monday.

"The final version is likely be substantially different in wording and perhaps somewhat in emphasis, but not a great deal in substance," said an industry representative participating in talks.

By far the most comprehensive UN assessment of the status and potential for the clean [energy](#) sector, the report weighs 164 separate development scenarios.

Six types of renewables accounted in 2008 for 12.9 percent of global [energy supply](#): biomass (10.2 percent), hydropower (2.3), wind (0.2), solar (0.1), geothermal (0.1) and ocean (0.002).

Once traditional use of firewood and animal dung for cooking and heating is set aside, however, that percentage drops to about seven.

Coal, oil and gas together make up 85 percent, and nuclear energy two.

Boosted by some government policies, declining technology costs and rising fossil [fuel prices](#), "deployment of renewable energy has been increasing rapidly in recent years," the draft summary said.

The sector contributed, for example, nearly half of the 300 [gigawatts](#) of new electricity generating capacity added worldwide in 2008 and 2009, with more than 50 percent installed in developing countries. Coal

accounted for most of the rest.



Solar power towers are seen here in Sanlucar La Mayor, in Spain. Renewable power from the Sun, wind, water and biomass can and should generate a major portion of the planet's energy supply by 2050, according to a draft United Nations report obtained by AFP.

The report says there is virtually unlimited technical potential for renewables, with much of it coming from solar energy.

Drafted before the Fukushima plant meltdown in Japan undercut the so-called nuclear renaissance, the summary said renewables will likely make a higher contribution to low-carbon energy supply by mid-century than nuclear energy and carbon capture and storage (CCS) combined.

Overall, a majority of projections reviewed show a "substantial increase"

-- ranging from 3-to-20 fold -- "in the deployment of renewable energy by 2030, 2050 and beyond."

Many scenarios showed renewables reaching 200 to 400 exajoules (EJ) a year by mid-century in a world where total primary energy supply is forecast to be about 1,000 EJ, according to the International Energy Agency (IEA).

An exajoule is a unit of measure for energy.

Clean energy's share of future supply varies hugely across different forecasts, with the most ambitious envisioning a world in which it covers three-quarters of all energy needs.

But the continuing growth of renewables is not inexorable and faces many barriers, ranging from vested political interests to inadequate incentive structures for developing new technology, and fossil fuel subsidies.

"To achieve international climate mitigation targets that incorporate high shares of renewable energy, a structural shift in today's energy systems will be required over the next few decades," the report said.

It will also take a lot of money -- 1.4 to 5.1 trillion dollars for the coming decade, and another 1.5 to 7.2 trillion dollars for the period 2021-2030.



Tourists are seen bathing at the Blue Lagoon in Svartsengi, Iceland, next to the Svartsengi geothermal power station, near Grindavik. According to the UN data, six types of renewables accounted in 2008 for 12.9 percent of global energy supply: biomass (10.2 percent), hydropower (2.3), wind (0.2), solar (0.1), geothermal (0.1) and ocean (0.002).

Clean sources of power must play a critical role if the UN-backed goal of preventing average global temperatures from rising more than 2.0 degrees Celsius (3.6 degrees Fahrenheit) is to be met, the IPCC said.

Currently, use of fossil fuels in the energy system accounts for some 60 percent of all greenhouse gases.

UN climate talks have remained largely stalemated since the near collapse of the 2009 climate summit in Copenhagen, even as scientists warn that [climate change](#) is accelerating.

"Renewable energy can help decouple development and rising emissions,

contributing to sustainable development," the draft summary said.

Global cumulative CO<sub>2</sub> "savings" between 2010 and 2050 will total 220 to 560 gigatonnes (Gt) off a projected accumulation from fossil fuel sources of 1,530 Gt over the same period, according to various scenarios.

The IPCC meeting has set aside four days to review every line of text in the summary.

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