RENEWABLES 2007

GLOBAL STATUS REPORT

A Pre-Publication Summary for the UNFCCC COP13
REN21 Renewable Energy Policy Network for the 21st Century
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GLOBAL STATUS REPORT PRE PUBLICATION SUMMARY

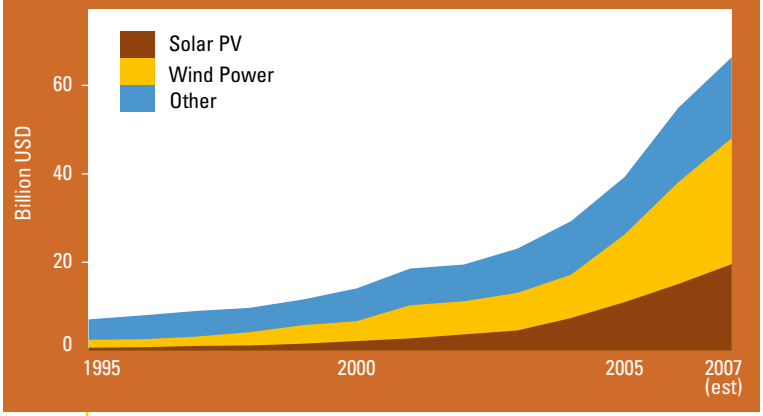
Renewable energy has clearly become mainstream since the Kyoto Protocol was adopted in 1997. Nothing demonstrates that better than investment flows. In 2007, global annual investment in renewable energy will exceed $100 billion. That includes at least $66 billion investment in added capacity for „new" renewables (up from just $8 billion in 1997), another $15-20 billion for large hydropower, $10-12 billion in new manufacturing plants for solar PV and biofuels, $16 billion in public and private research and development.

Wind power now receives the largest share of investment annually of any renewable energy technology, even more than large hydropower. Wind power has continued to grow at 25-30% per year since 2000, and will reach at least 93 GW cumulative capacity in 2007 (up from just 7.5 GW in 1997). Small hydropower and biomass power reached 73 GW and 44 GW, respectively, in 2006. Geothermal power is another 10 GW. Grid-tied solar PV continues to grow at 50-60% annual rates, and now accounts for almost 8 GW. Altogether, these new renewables now provide 240 GW of electric power capacity (and over 1000 GW counting large hydropower). For comparison, total global power capacity is on the order of 4,300 GW. Recent growth of solar thermal power generation offers another promising future technology.

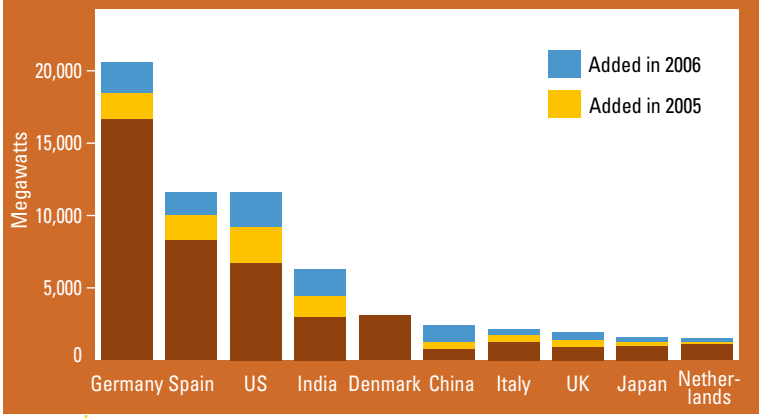
Solar water heating and biofuels also continue to grow at 15-20% annual rates. Rooftop solar collectors now provide hot water to more than 50 million households worldwide. Other growing technologies for heat supply are geothermal (including heat pumps) and biomass. Annual biofuel production will exceed 50 billion liters this year (ethanol and biodiesel), about 3% of global gasoline consumption (on the order of 1500 billion liters). Some 25 million rural households benefit from biogas, small wind power, household solar power, and other technologies.

The number and regional spread of countries deploying renewable energy has grown significantly since 1997. For example, over 70 countries now have wind power, and many developing countries have recently joined the trend, including Brazil, China, Egypt, Iran, Mexico, Morocco, and South Africa, all with added capacity in 2006. India was number three globally in added

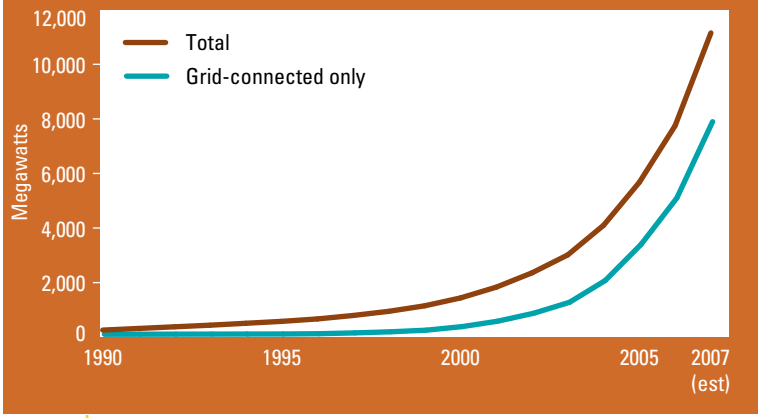
Annual Investment in Renewable Energy Capacity (excluding large hydro), 1995–2007



Wind Power Capacities, Top 10 Countries, 2006



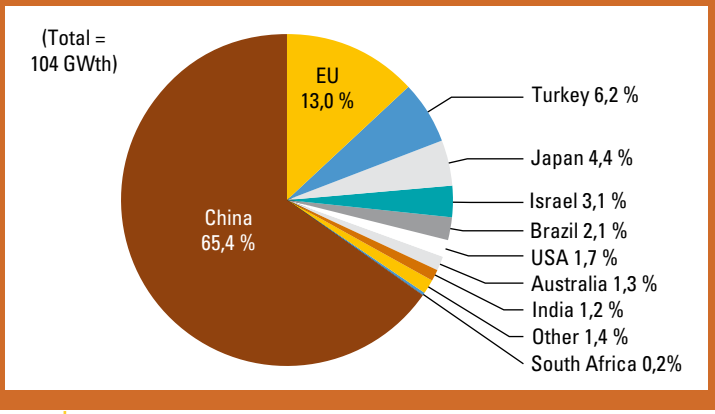
Solar PV, Existing World Capacity, 1990–2007



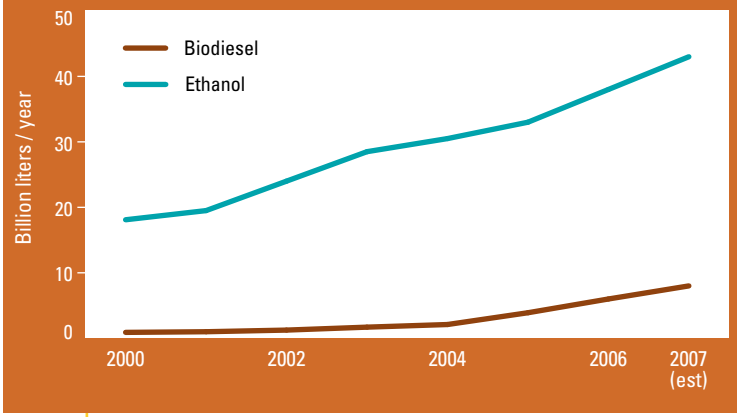
wind power capacity in 2006, behind the US and Germany and ahead of number four Spain. Small hydro in China, more than half the world's total, grew by 19% in 2006. Biomass power generation continues to expand in more than 40 countries. Solar PV growth is dominated by markets in Germany, Japan, Spain, Italy, South Korea, and the US states of California and New Jersey. China accounted for 80% of the global market for solar hot water collectors. The US and Brazil dominate ethanol production, and Germany dominates biodiesel production, but scores of other countries are establishing biofuels production in the EU, Africa, and Southeast Asia. Small-scale renewables continue to be incorporated into rural energy development in many countries, with examples such as Argentina, Bangladesh, Bolivia, Brazil, Cambodia, Chile, China, Ethiopia, India, Kenya, Mexico, Pakistan, Peru, the Philippines, Thailand, Uganda, and Vietnam.

Policies to promote renewable energy have mushroomed over the past few years. Targets for future shares or amounts of renewable energy now exist in at least 58 countries worldwide, including 13 developing countries, all EU countries, and in many states/provinces in the US and Canada. At least 56 countries worldwide now have some type of renewable energy promotion policy, including 21 developing countries. Several more developing countries are actively engaged in enacting policies. At least 36 countries and 10 states/provinces, including 12 developing countries, have adopted feed-in tariff policies for renewable electricity, more than half of which have been enacted since 2002. At least 44 countries, states, and provinces have enacted renewable-portfolio-standard policies requiring future shares of power generation. Mandates for blending biofuels with conventional vehicle fuels have been enacted in 11 developing countries in Latin America and Asia, and in 30 states/provinces in Canada, India, and the US. Dozens of major cities around the world have joined the policy avalanche, with future targets for renewables, and with CO_2 reduction goals similar to Kyoto Protocol national targets (including 25-30% reductions over 1990 levels by 2020 in Gwangju, Korea, and Toronto and Vancouver, Canada). Many city policies promote solar hot water and solar power, and incorporate renewables into urban planning.

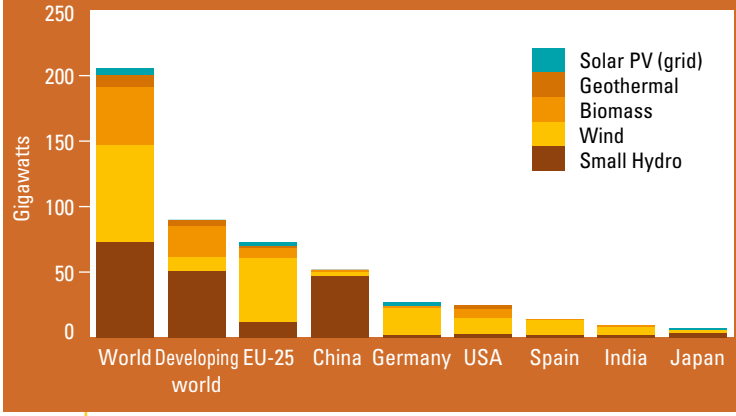
Solar Hot Water/Heating Capacity Existing in 2006



World Ethanol and Biodiesel Production, 2000–2007



Renewable Power Capacities, EU,Top 6 Countries and Developing World (excl. large hydro), 2006



These trends are set to continue as the costs of renewables technologies continue to decline and as the renewables industry continues to diversify production and technology development to a broad base of countries, including emerging economies — trends which are now well established. With over 2.5 million jobs in the renewable energy industry, and strong rural development benefits as well, renewables contribute to economic development, energy security, and local environment, as well as climate mitigation.

Growth Rates 2006	
Wind	25-30%
Solar PV (grid)	50-60%
Solar hot water	15-20%
Biofuels	15-20%

Renewable power capacity of about 240 GW in 2007 (ex. large hydro) represents almost 6% of total global power capacity (~4,300 GW) – and the share is increasing.

All 2007 figures are preliminary estimates and subject to verification.

Selected Indicators

	2005	2006	2007 (est)	
Investment in new renewable capacity (annual)	39	55	66	billion $ US
Renewables power capacity (existing, exc. large hydro)	182	206	237	GW
Renewables power capacity (existing, incl. large hydro)	930	970	1010	GW
Wind power capacity (existing)	59	74	93	GW
Grid-connected solar PV capacity (existing)	3.4	5.0	7.8	GW
Solar PV production (annual)	1.8	2.5	3.8	GW
Solar hot water capacity (existing)	88	103	121	GWth
Ethanol production (annual)	33	38	44	billion liters
Biodiesel production (annual)	3.9	6	8	billion liters
Countries with RE targets	52		58	
States/provinces/countries with feed-in policies	43		46	
States/provinces/countries with RPS policies	38		44	
States/provinces/countries with biofuels mandates	38		42	

The REN21 Renewables Global Status Report is produced by Worldwatch Institute and sponsored by the German government. Lead author is Eric Martinot. The GSR was first published in 2005, with an update in 2006. The 2007 report is forthcoming in January 2008. For free copies of the 2005 and 2006 reports, visit http://www.ren21.net. Translations in German, Chinese, and Japanese are available.

REN21 is a global policy network that provides a forum for international leadership on renewable energy. Its goal is to bolster policy development for the rapid expansion of renewable energies in developing and industrialised economies.

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