

FACT SHEET ON ENERGY OUTLOOK AND RENEWABLES

The power needs of developing nations are massive and will be met by a combination of traditional and renewable fuel sources. The World Bank Group is already playing a major role (\$5 billion plus) in fostering renewable energy¹ and addressing climate change and is well-positioned to expand its leadership role in this area.

Developing Countries Face Major Energy Challenges

- About one out of every three people in the developing nations has no access to electricity.
- Developing countries need \$6 trillion in electricity investment over the next three decades.
- China alone will need nearly \$2 trillion in electricity investment over the next three decades. China is already experiencing power outages from rapid growth.
- Current trends point to a steady increase in global energy demand of 1.7 percent per year from 2000 to 2030; of this, more than 60 percent of energy demand is expected to come from developing countries, notably in Asia.
- Energy investment as a percentage of GDP is already much higher in the developing countries than in OECD countries. The average investment in OECD countries is less than 1 percent of GDP; India and China will need to spend more than 2 percent of GDP; Russia may have to spend as much as 5 percent of its GDP.

Traditional Fuel Sources Will Answer Most Energy Needs

- Oil, the use of which is expected to rise from 77 million barrels per day today to 120 mb/d in 2030, will remain the largest single source of energy, although demand for natural gas will grow more rapidly.
- Coal consumption will expand, but more slowly than that of other fuels. Roughly two-thirds of coal investment will take place in developing and transition countries over the next three decades. China alone will represent roughly one-third of all coal investment.
- The role of nuclear power will decline; few new reactors will be built and some will be retired.

Use of Renewable Energy Expected To Grow Rapidly in Developing Countries

- In the *developing* world, between now and 2030, non-hydro renewable energy is projected to grow at an estimated 5.7 percent per year.
- By contrast, in the *developed* world, between now and 2030, non-hydro renewable energy is projected to grow an estimated 3.1 percent per year.

¹ “New’ renewable energy technologies comprise run-of-river hydro, solar energy for heat and power, wind energy for mechanical and electrical power generation, geothermal energy for power generation and heat, and biomass for electricity and heat production. Energy efficiency operations include support for energy efficiency equipment and processes, development of energy efficiency businesses and financing mechanisms, and investments to reduce energy used in district heating. New renewables and energy efficiency will be referred to as “alternative energy.”

WBG support for large hydro, which is a renewable energy resource, has been in decline. From a high of over \$1 billion in IBRD and IDA commitments in FY93-95, it has dropped to under \$200 million in FY02-04. Given the enormous untapped potential for hydropower in developing countries and their unmet energy needs, the Bank will consider supporting the development of large hydro in an environmentally and socially sustainable way.

WBG Will Have Critical Role

- Between FY92 and FY03, total IBRD loans, IDA credits, and associated GEF cofinancing commitments in renewable energy and energy efficiency **grew at an average rate of about 20 percent per year.** (Note significant year-to-year variations on commitments.)
- The World Bank has the largest renewable energy portfolio of any institution in the world. Since 1990, the World Bank Group has committed about \$2.7 billion to the renewable energy portfolio.
- The total alternative energy portfolio includes 76 projects at a total cost of \$7.1 billion, with GEF financing \$637 million, and funding for the rest coming from the World Bank Group, private cofunding, and government counterparts.

Examples of Projects

- In **China**, the Bank and GEF are supporting the preparation of the Renewable Energy Scale-up Program, its most ambitious renewable energy project to date, for developing large-scale cost-effective commercial supplies of renewable energy with a goal of adding up to 20,000 MW of renewable electricity capacity. It follows the Renewable Energy Development Project—funded by IBRD and GEF—that targets solar electricity services for 350,000 rural consumers and 20MW of grid-connected wind farms.
- In **Mexico**, the Bank- and GEF-assisted Renewable Energy Strategic Partnership project is expected to trigger up to 200MW of wind facilities in the first of two phases.
- The IFC with GEF-assistance is supporting a 1 MW grid-connected solar photovoltaic (PV) power project valued at \$5.8 million, which will be integrated into a rural cooperative electric network in the city of Cagayan de Oro in the **Philippines**. The PV plant will operate in conjunction with the recently built 7 MW Bubunawan run-of-the-river hydroelectric power plant.

Challenges

- The renewables sector, in many ways, is as complex if not more complex than traditional power; so getting the right combination of financing and enabling conditions is particularly challenging.
- Wholesale solutions are unlikely; we need to learn through a variety of approaches how to scale up our efforts in the most effective way.
- Ultimately, the key question is how to address the higher cost of renewables as we make the transition away from traditional fuel sources.

Additional Resources

- [Solar Electricity](#)
- [Geothermal Energy](#)
- [Electricity and Renewables](#)
- [World Bank - GEF Database](#)

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