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## China's Energy Priorities

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The highly irrational structure of China's energy consumption, on both efficiency and environmental grounds, is reflected in its continuing reliance on traditional power sources. In 2008, more than 90% of energy supplies still came from non-renewable fossil fuels, with almost 70% from coal alone.

**Renewables necessity.** The disproportionately heavy dependence on coal is unique among major economies and made China the world's largest emitter of greenhouse gases. With coal reserves estimated to last only 50 years, and in an attempt to combat environmental and ecological damage, recent years have seen increasing emphasis placed on developing indigenous renewable energy sources:

--Early moves. Promoting large and small-scale hydropower plants has been a feature of energy strategy since the 1950s, and by 2005 hydropower was supplying 16% of total power generation. Small-scale plants accounted for almost one third of hydropower.

--Landmark legislation. Development of newer renewable energy technologies--solar, wind, bio-energy--dates from the 1980s. A renewable energy law came into effect in 2006 which sought to strengthen efforts to combat energy shortages, improve energy security and mitigate environmental pressures by harnessing wind, solar, water (including ocean), geothermal and biomass resources.

--Long-term planning. A Medium and Long-Term Development Plan, issued by the National Development and Reform Commission (NDRC) in 2007, called for the share of renewable resources in total primary energy consumption to rise from 7.5% (end-2005) to 10% in 2010, and 15% by 2020 (not less than 3% coming from 'new renewables').

China has already made significant progress towards meeting these goals, and the share of renewable energy in total energy consumption had reached 8.5% by the end of 2007--equivalent to the energy produced by burning 280 million tons of coal.

**Ambitious leader.** China is reportedly now the world's leading renewable energy producer. It appears well on course to fulfilling its 2010 renewable energy targets, except perhaps for bio-energy. Indeed, Beijing has revised up some of its renewable energy targets:

--NDRC Vice Chairman Zhang Xiaoqiang has said that renewable energy's share in total energy

consumption could reach 18% by 2020--three percentage points above the planned level. Were this achieved, China would be within two percentage points of the E.U.'s 2020 target of providing for 20% of its energy requirements from renewable sources.

--This year a senior official at China's Energy Research Institute indicated that by 2050, between 35-40% of China's energy would derive from renewable sources.

**Investment challenges.** The investment burden of maintaining the existing momentum of renewable energy growth is heavy:

--In 2007, China invested \$12 billion in renewable energy, second only to Germany's \$14 billion.

--In 2008, China reportedly fell to third place in terms of renewable energy investment, behind the United States and Spain, but ahead of Germany.

Most of China's renewable energy investment is allocated to small-scale hydropower projects, solar hot water and wind power. In 2008, it was estimated that China would need to invest \$398 billion to meet its renewable energy targets (\$33 billion per year during 2009-20). Accordingly, investment allocations to the sector could rise significantly in coming years.

For profit reasons, private sector investment in renewable energy has tended to focus on equipment manufacturing, or the development of new technology, so that the main driver of renewable energy production has been the public sector. Notably, a significant share of the economic stimulus package designed to support growth during the global downturn has been directed to low-carbon investment.

**Outlook.** On energy security and environmental grounds, maintaining the momentum of rapid renewable energy production growth will continue to be a high strategic development priority. China's resource endowment, its proven technological capability and the commercial opportunities afforded by further expansion seem guaranteed to assure the fulfilment of this priority goal.

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