



Sean Prague/Still Pictures

Firm

Commitment

ZIJUN LI describes how China is leading the world in investing in renewable energy

Nothing happens slowly in today's China. Energy consumption has soared as the economy registered spectacular growth rates, above 9 per cent annually, in the past decade. Power demand is projected to reach 2.7 trillion kilowatt-hours by the end of 2006—an 11.3 per cent increase over 2005. This has resulted in a ramping-up of power-generation capacity and an enormous increase in oil and gas imports. Yet, while China is investing in new fossil fuel exploration both at home and abroad, it is also significantly expanding its interest in renewable energies through a host of new policies and initiatives.

Many analysts expect tremendous growth in China's renewable energy market over the next 15 years. Government policy is the major driver of the country's renewable energy industry, and a new Renewable Energy Law – which took effect in January this year – and a series of new government incentives both reflect China's firm and

China is investing in new fossil fuel exploration both at home and abroad, it is also significantly expanding its interest in renewable energies through a host of new policies and initiatives

longstanding commitments. By 2010, renewable energy is to contribute 10 per cent of the country's gross energy consumption, increasing to 16 per cent by 2020. This is a huge jump from the current 1 per cent share.

Energy strategy

Already, the move towards expanded investment in renewable energy shows signs of gearing up. In 2005, China was the world's top investor in renewables, with investments topping \$6 billion, according to the U.S.-based Worldwatch Institute. BP's Statistical Review of World Energy 2006 reports that China's cumulative installed wind turbine capacity alone reached 1,264 megawatts (MW) in 2005, adding nearly 500 MW year-on-year, due in large part to the \$600 million in investment poured into the sector last year. Wind power is a key element of China's long-term renewable energy strategy, and capacity is expected to reach 30,000 MW by

2020 under the new Renewable Law.

China has also long been the world's leader in solar thermal production and use, generating nearly 59 per cent of the global heating capacity for non-pool systems in 2004. While domestic demand for solar cells still represents only a tiny share of the global market, the remarkable growth of Chinese solar companies yielded 42 per cent of the world's total photovoltaic output in 2005.

Domestic hydropower generation topped 401 terawatt-hours in 2005, making China the world's leading producer here, too. Seeing this potential, the new Renewable Energy Law has set a target for 300,000 MW of hydropower generation capacity by 2020. Most significantly, China is offering a growing role to other parts of the world in small hydropower (SHP). Figures from Renewable Energy World indicate that China had installed more than half the world's total of 31,200 MW of SHP capacity by 2005, and observers expect even faster development nation-wide under the new law coming into force.

Industrial wastes

Biofuels also account for a promising share in the country's long-term renewable energy strategy. Liquid fuel produced from plant biomass and/or treated municipal and industrial wastes is expected to substitute for 10 million tons of petroleum by 2020, accounting for 15 per cent of the total Chinese consumption of transport fuel. Last year China produced 643 thousand tons of oil equivalent

of fuel ethanol, representing 4 per cent of global production.

At a time when global energy demand is skyrocketing, China's commitment to the renewables revolution has been widely noted. But whether the country's renewables market will reach the projected level depends very much on future regulations and policy implementation. The enactment of practical, effective measures under the new law still lags behind. In particular, the lack of compatible local administrative

acts and regulations is hindering its enforcement. For instance, although China recently developed the world's first full-permanent magnetic levitation wind power generator – representing a breakthrough in the country's weak domestic wind technology sector – great uncertainty remains over commercialization side due to vague financial and administrative rules ■

Zijun Li is China Fellow at the Worldwatch Institute.



Mark Edwards/Still Pictures