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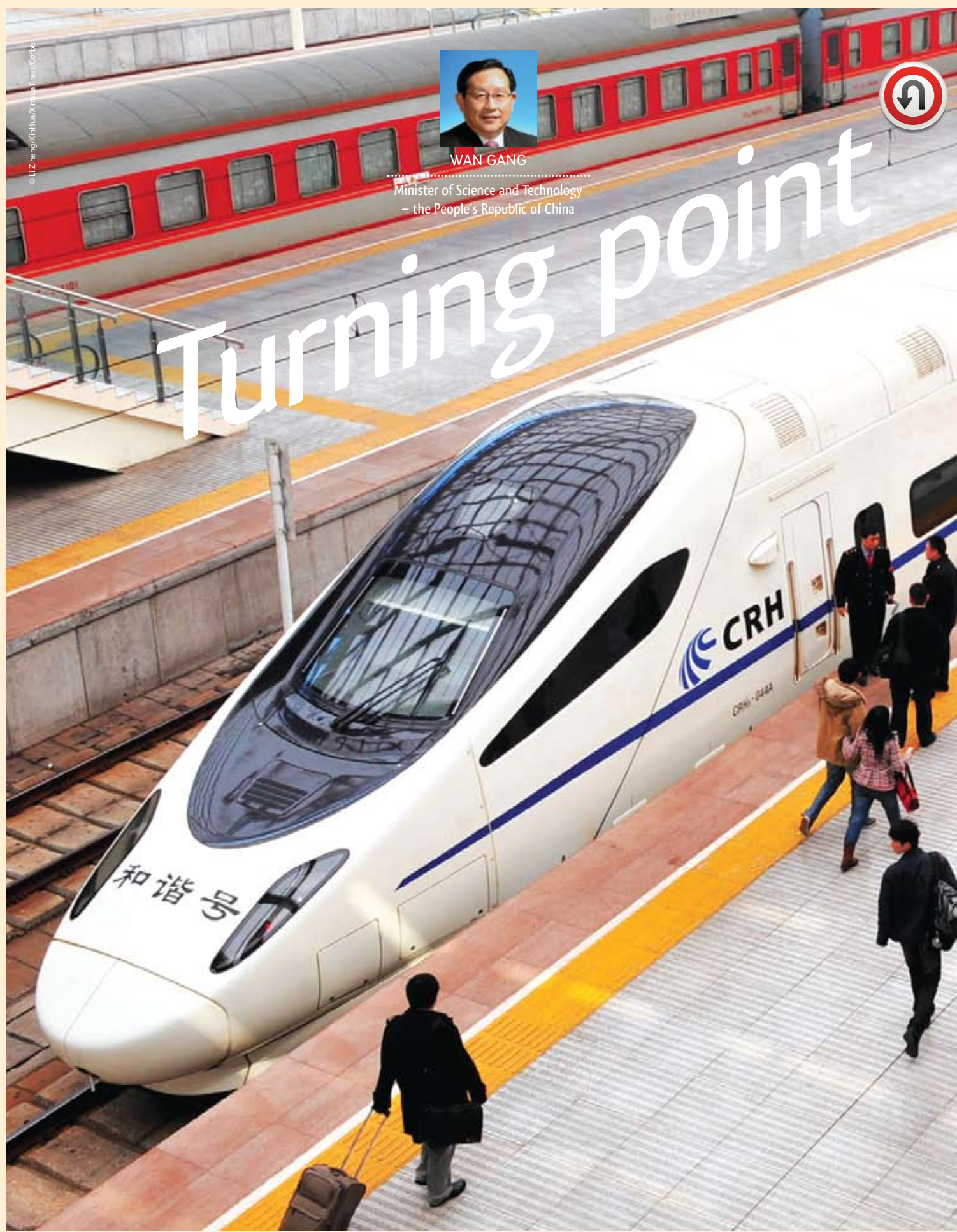


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# Turning point





Basic, as it is, to production and human life, energy is also a major factor influencing atmospheric changes — and humanity must develop and use it in a rational way if it is to live in harmony with nature. If we are successfully to tackle global climate change and meet increasing energy demand, we need to develop clean energy, raise energy efficiency, conserve energy and reduce emissions. Our efforts today will not just make an immediate difference, but shape the future of humankind.

Innovating and disseminating energy-efficient technologies is high on the agenda of the Chinese government, as are developing and using clean energy. China has made vigorous efforts to explore and promote new energy, energy-efficient lighting and clean energy vehicles. Since the beginning of the 21st century, it has systematically initiated a series of major new energy research and development (R&D) projects including on electric vehicles (EVs), light-emitting diode (LED) lighting, wind and solar power, the use of clean coal, and high-temperature gas-cooled reactors.

China's automobile industry has boomed since 2001 when cars began to be acquired by households on a large scale. The Ministry of Science and Technology has launched a special R&D project on EVs to ensure energy security, protect the environment, and stimulate innovation in the auto industry. It focuses on three types of new vehicles — hybrid, battery electric and fuel cell — and plans to develop the key technologies of battery, motor and electronic control systems. Since 2004, new energy vehicles have begun being demonstrated commercially in eight Chinese cities. At the 2008 Beijing Olympic Games, 600 EVs

of different types achieved zero-emission transport in Olympic venues, and low emissions in surrounding areas. Zero-emission vehicles driven by electricity and fuel cells will be demonstrated at the 2010 Shanghai World Expo, and the use of hybrid vehicles will be extended in surrounding regions.

The government's Outline of National Medium and Long-term Program on Scientific and Technological Development (2006–2020) — which aims to further innovation in energy — stresses that: developing solar, wind, nuclear and biomass energy for a diversified Chinese energy mix is of great significance; developing clean coal technology and coal bed methane to reduce pollution is vital; and cutting energy use and emissions — mainly through introducing advanced technologies in construction, transport and industry — is important.

As a result of these endeavours, China's new energy industry has accomplished much. By 2008, it ranked fourth in the world for installed wind power capacity, at 12,170 MW. Its share of the global solar cell market exceeded 30 per cent in 2007 with a production capacity of 2,900 MW and output of 1,088 MW. Efforts to develop and apply biomass energy enabled China to use more than 12 billion cubic metres of biogas a year.

The Government has decided that bolstering scientific and technological advances in new energy and developing the new energy industry are part of China's major measures to combat the world financial crisis and restructure industry. So it has launched demonstration projects in energy conservation and commercializing new energy.



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One — called “1,000+ Green Vehicles in each City” — promotes large-scale commercialization of new energy vehicles in the public transport systems making hybrid, electric and fuel cell buses and taxis available, initially in 13 cities. By 2012, over 60,000 clean buses and taxis are expected to be running in China.

Another project — “10,000+ high efficient Lamps in each City” — aims to introduce LED technology to public lighting systems, beginning with 21 cities. It will equip the country with 6 million functional and decorative LED lamps within three years, reducing energy consumption by more than 60 per cent.

Similarly, the “Golden Sun” project endeavours to increase China’s installed solar photovoltaic capacity by 2,500 MW by 2015, and to build some 50 MW solar thermal power stations by 2020.

The Government also pays great attention to the new developments in energy science and technology (S&T) and has committed to more R&D of technologies related to integrated gasification combined cycle: CO<sub>2</sub> capture, storage and utilization; hydrogen fuel cells; solar thermal power generation; bio-energy, etc.

In an era of globalization, no one country can make socio-economic or S&T progress without extensive international cooperation and exchanges. The fight against global climate change also entails intensified international partnerships. China highly values international collaboration in S&T and, in recent years, has actively taken part in the International Thermonuclear Experimental Reactor Program, Generation IV International Forum, Carbon Sequestration Leadership Forum, International Partnership for the Hydrogen Economy and other international energy initiatives. The Ministry of Science and Technology also initiated the International Science and Technology Cooperation Program on New and Renewable Energy in 2007. China stands willing and ready to pool global S&T resources and carry out wider and deeper international cooperation through joint R&D in cutting-edge domains.

Over the history of industrial development, the major fuel has evolved from coal to oil to natural

gas, going from solid to liquid to gas, following a law of “decreased carbon and increased hydrogen”. Innovations in power equipment follow a technology roadmap of “higher energy efficiency and lower emissions”. Each technological evolution in energy generates tremendous economic returns, transforms industrial structures, and improves people’s lives

We are now at a turning point — moving from the fossil fuel age towards renewable and clean energy. We are also at a juncture — evolving from industrial civilization towards ecological civilization. A new round of S&T innovation in energy is on the way. We need to join hands and work hard. Building on the experience and wisdom of past generations, we should do our best to develop and use all sources of energy. Only when we do so will the present generation live in a cleaner world. Only when we do so will future generations enjoy better prospects and more room for development. Only when we do so will we embrace a new era where humanity lives in perfect harmony with nature.