China's Energy Options: national, regional and global consequences

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This "Evaluation of China's Energy Options" (ECEO) is a very important and informative analysis of China's energy-supply challenges. The ECEO was prepared for and with the support of the China Sustainable Energy Program (http://www.efchina.org/). The Program links American and Chinese experts and is aimed at assisting "in China's transition to a sustainable energy future by promoting energy efficiency and renewable energy." The ECEO was itself written by an international group of experts on energy issues. They seek to augment the Chinese Development Research Centre's 2004 "National Energy Strategy and Policy 2020" (NESP), an assessment of China's current and future energy needs and how to satisfy them. The ECEO is thus a treasure trove of data and concise analyses of the structure of China's energy demand and supply as well as the relevant institutions and organizations.

But the importance of the issues addressed in the ECEO extends far beyond China. The backdrop of the analysis is the increasingly desperate global search for energy supplies. Not only do all nations confront the end of the era of cheap and plentiful oil and natural gas; it is also essential to conserve energy at a time when soaring consumption fuels global warming. Though that daunting context is not part of the ECEO, it is clear that if a rapidly developing China chooses the same energy options and consumption patterns that the rich countries have - even the relatively energy-efficient Japanese and Europeans - then world greenhouse gas and energy (especially oil) supply problems will be multiplied. What this report does tell us in this regard is that even this is in fact an optimistic scenario.

Consider what we learn from the ECEO. Over 1980 to 2000, China quadrupled its GDP but only doubled its energy usage. Still, China relies on coal for over 2/3 of its energy needs. It also went from being self-sufficient in oil to being a net importer in 1993. It now imports about 40% of the oil it uses, and that figure is projected to increase to about 70% by 2020.

China's NESP analysis projects, over the 20 years from 2000 to 2020, that the country will again quadruple its GDP while only doubling its energy

consumption. The ECEO confronts this optimistic outlook head on with the facts. Current data indicate that China's energy use threatens to outpace GDP growth over the period projected in the NESP. Indeed, in the wake of the 1997 Asian Currency Crisis, China's annual increase in energy consumption skyrocketed from a nadir of about -4% to a blistering rate of over 15% in 2004. As figure 1 in the ECEO shows, this 15% rate of growth is about double the highest rate of growth in energy consumption achieved over 1980 to 2000. And China is just at the beginning of the curve of private automobile ownership that promises to further increase oil consumption. It is no wonder, then, that China's, and international, attention is so keenly focused on energy security. China's immediate challenge is to grow its economy while also bringing down this extraordinary rate of increase in energy use as well as shifting away from coal and other dirty fuels towards cleaner alternatives. Its greater and long-term challenge is to avert the environmental disaster that looms as a result of its breakneck growth, one that is not limited to China but extended globally through such mechanisms as global warming.

The ECEO seeks to build on the NESP by sketching a structure of incentives so that energy demand can be brought under control and concerns over security of supply be at least balanced with an equivalent zeal for efficiency. The ECEO finds that what is lacking are 1) market prices and other incentives (such as taxes and subsidies) to encourage efficiency and 2) a central agency empowered to develop and deploy these mechanisms relatively free of interference from vested interests. To borrow a little from the language of public administration, energy efficiency has many of the characteristics of a public good. In particular, encouraging energy efficiency is in the collective interest. And failure to regulate it promises mega problems not only for China, but for the world. The authors recognize that individual actors will do little to enhance this national and global interest so long as they are not compelled to, whether by price or policing factors that place the costs of environmental destruction on enterprises.

The ECEO therefore stresses repeatedly and persuasively that China requires a strong Ministry of Energy to bring together the many dimensions of energy acquisition and use and implement a robust regime of controls. In coordination with local governments, the new ministry could also establish institutions to ensure timely and credible data on energy supply, consumption and prices. Through suggesting these mechanisms as well as a new structure for financing research and implementation, the ECEO fleshes out the vision outlined in the NESP.

All the same, there is more than one rich irony seated at the back of this set of recommendations. In this era when decentralization, deregulation and privatization are the patellar reflex of politics in China and globally, it is instructive to learn that it was China's much-maligned central planning mechanisms that helped deep growth in energy use well below GDP growth. Moreover, it is also interesting to discover that it was the decentralization of power over energy decisions to state-owned firms that afforded more access points for

vested interests to block efforts at enhancing efficiency. The critical lesson is not the elimination of the market, but that energy issues require a robust and autonomous public sector if societal, and global, interests are to be protected.

A further irony is in reading what is essentially an American report, prepared by the Lawrence Berkeley National Laboratory, with funding from the Packard and Shell Oil Foundations and the Pentagon, that is telling the Chinese what they need to do to control energy consumption. America consumes over a quarter of the world's oil, most of it wasted in vehicular transportation with prices one-third to one-fifth or lower than those in much of the world. Yet there is not a word in the ECEO about why the US Department of Energy has failed to rein in this profligacy. As we all know, gasoline taxes are far too low in the United States while far more efficient rail transit and shipping remain marginal operations. By contrast, China is in the midst of installing over 12,000 kilometers of high-speed rail networks and strengthening urban public transport. This and similar such systems promise far greater energy efficiency in transport than one finds in the United States. While the ECEO sensibly recommends mass transit, including buses for low-cost intra-city transit, it might have included a comparative treatment of the manifest failures of America's market-oriented approach to achieving energy efficiency and conservation, and warned of the consequences that China will face as a result of the race to automobilization presently underway in that nation.

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