China’s soaring demand for energy has complicated its foreign relations on many fronts. China’s growing oil imports have sparked criticism that this demand puts upward pressure on world oil prices. Investments by China’s national oil companies have vexed governments trying to isolate regimes such as Iran, Sudan and Myanmar. China’s growing energy-related interests abroad have raised concerns that Beijing will build a powerful navy that could challenge the United States for control of the seas. And China, continuing to rely heavily on coal, has become the world’s top emitter of greenhouse gases. As the December 2009 Copenhagen conference revealed, this last development may pose the most difficult challenge of all.

While Chinese leaders seem increasingly self-assured on the world stage, Beijing has watched the growth of China’s energy needs with considerable concern. Indeed, the past decade has seen a surge of interest in the problem of energy security in China, with a growing number of government officials, military officers, think-tank experts and academics publicly pontificating on the subject. Traditionally, Chinese commentators have been preoccupied with the country’s mounting oil imports and the external dependence these imports imply. This focus reflects a wariness of international energy markets and institutions, which are seen as heavily influenced by the United States. But alternative perspectives have become more noticeable in

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China’s domestic energy-security debate in the past five years. While external dependence remains a concern, some Chinese analysts now take a more sanguine view of the challenge it presents, and have openly criticised many of Beijing’s more mercantilist policies, urging a more positive approach to international markets and institutions. At the same time, as the weaknesses of China’s domestic energy system have become more apparent, an increasing number of analysts have argued that their country’s biggest energy-security challenge lies not in growing imports, but in internal disarray. In this view, China should worry less about external dependence and more about reforming its domestic energy sector, making it more reliable, more efficient and less polluting.

The evolution of China’s thinking about energy security presents an opportunity for the outside world, and in particular the United States and its allies, as they respond to China’s rise. To appreciate the nature of this opportunity, a more thorough understanding of China’s deliberations about external dependence and domestic energy challenges is needed.

**Rethinking external dependence**

In the early years of the twenty-first century, most commentators on energy security in China had a traditional view of what ‘energy security’ means. Commentary tended to be state-centric, focused on energy supply more than demand, infused with the belief that insecurity arises from external dependence, and fixated on oil in particular. This preoccupation with oil was no accident. While coal meets more than two-thirds of China’s total energy consumption, the country has abundant reserves with which to meet this demand. In contrast, China became a net oil importer in 1993, and within a decade it was importing more than a third of its supply. At the same time, renewed tension with the United States over Taiwan from the mid-1990s highlighted the possibility of conflict with a state that seemed well positioned to exploit China’s growing reliance on oil imports.

Worries about external dependence remain prevalent, as Beijing has come to rely more and more on imported energy. China now imports more than 50% of its oil, and if present trends continue, that figure may reach 80% by 2030. Most of these imports are likely to come from Africa and the
Middle East, crossing the Indian Ocean and passing through the narrow Malacca Strait. China has also recently begun importing natural gas, and imports are projected to comprise nearly 50% of the country’s gas supply by 2030. China is even becoming a net importer of coal, though the country’s extensive domestic supplies will limit external dependence. This growing reliance on imported energy has increased concern about vulnerability to supply disruptions and price spikes, whether due to piracy, terrorism, embargoes or the machinations of other powers. Oil remains the primary worry, and there is particular concern that the United States, possibly in concert with India or Japan, could exploit China’s heavy reliance on the Malacca Strait to cut off oil supplies in a crisis.

China’s efforts to address the challenge posed by its growing energy imports have sparked a lively domestic debate that is playing out in several distinct arenas. For example, the Chinese government has attracted considerable attention for supporting the overseas expansion of its national oil companies. While the companies themselves are primarily motivated by commercial considerations, Beijing’s support for what is known as their ‘going out’ reflects a belief that oil produced by Chinese companies abroad is a more secure source than that purchased on international markets. This view was never universally shared, however, and it has come under attack from a growing number of more market-friendly Chinese analysts in recent years. In fact, some analysts have charged that the national oil companies’ overseas investments actually undermine China’s national interests in some cases. One caustic analysis predicted that the relentless pursuit of equity stakes in foreign oil fields would inevitably lead to ‘increasingly intense competition, increasingly scarce opportunities, and increasingly great risks’.

Others have charged that China’s foreign policy has sometimes been hijacked by the national oil companies, whose investments overseas have pulled the Chinese government closer to states that are international pariahs. The National Development and Reform Commission, which oversees China’s energy sector, showed sensitivity on this point when it excluded Sudan from a list of countries in which Chinese oil companies were encouraged to invest in 2007. Yet in a sign of just how
much difficulty Beijing has controlling its own oil companies, the China National Petroleum Corporation acquired new assets in Sudan anyway.\textsuperscript{16}

Despite the controversy surrounding China’s overseas energy investments, Chinese leaders remain committed to intervening in commercial energy deals abroad. In a series of ‘loans for oil’ deals concluded in 2009, for example, China used its financial clout to facilitate long-term supply agreements and new investments in a number of oil-producing states outside the Middle East. The deals with Russia and Kazakhstan are noteworthy because they promise to reduce China’s reliance on seaborne oil imports while deepening its cooperation with overland suppliers.\textsuperscript{17} China will rely heavily on pipelines in both cases, and China has also concluded an agreement with Myanmar to build oil and gas pipelines from the Burmese coast to China’s Yunnan province.\textsuperscript{18} While the China–Myanmar oil pipeline will not transport locally produced oil, it will allow some of China’s imports from the Middle East and Africa to bypass the Malacca Strait. If the pipelines from Russia, Kazakhstan and Myanmar are all completed and operate at full capacity, they would carry 1.1 million barrels of oil per day, about 14\% of China’s projected imports in 2015.\textsuperscript{19}

Aside from increasing the diversity of suppliers and supply routes, however, the extent to which these pipelines will enhance China’s energy security is a matter of dispute. Some Chinese energy analysts doubt that pipelines are a more secure means of transporting oil than tankers, and some argue that pipelines are actually less secure since they are immobile and comparatively easy to disrupt.\textsuperscript{20} It has also been noted that pipelines imply a long-term supply relationship and that Russia’s reliability as an energy supplier remains open to question.\textsuperscript{21} In fact, Chinese analysts expect that Beijing and Moscow will continue to wrangle over the specifics of their agreement, which was reached only after Russia came under pressure from the global economic crisis.\textsuperscript{22} Finally, the pipelines currently under construction will meet only a relatively modest fraction of China’s import needs.\textsuperscript{23} It is thus unclear how reassuring overland supplies will be for China as its oil imports continue to grow.

China’s engagement with international energy institutions is also a subject of debate. Beijing participates in a variety of forums that deal with energy
issues at global and regional levels, though not always as a full member or signatory. Most significantly, China has taken part in various activities organised by the International Energy Agency (IEA) in recent years as a ‘major dialogue partner’. Although IEA membership has traditionally been limited to OECD countries, in 2008 the United States expressed support for China to join the organisation as a non-OECD member, and IEA Executive Director Nobuo Tanaka has actively sought to bring China into the organisation more fully.²⁴ To date, however, China has not sought to join. Energy analysts at state-run think tanks in Beijing report continuing misgivings about joining the organisation, since full membership would require China to become more transparent in the energy sphere and to give up some autonomy in the management of its strategic petroleum reserve.²⁵ China has recently completed filling the first phase of the reserve, which holds roughly 100m barrels of crude (about one month of net imports at current consumption rates), and the government eventually plans to build a national system that can meet 90 days of net import demand.²⁶ Despite these reservations, however, some Chinese analysts argue that joining the IEA would amplify Beijing’s voice on international energy issues, while also reassuring other states about China’s impact on energy markets and institutions as it rises.²⁷ It thus remains possible that China’s position will become more cooperative in the future.

Finally, China is debating what kind of presence it needs on the high seas to ensure access to energy supplies and to protect its other maritime interests. It is well known that China is actively considering building several aircraft carriers and associated ships by 2020, with much public support for the move.²⁸ Yet it remains unclear just how large a navy China will seek to acquire, and more specifically, what kinds of carriers it might build and what kinds of missions they would undertake.²⁹ The acquisition of several medium-sized, conventionally powered carriers would improve China’s leverage in its territorial disputes in the East and South China seas, helping it gain control over natural and energy resources in these areas. Some Chinese naval and energy analysts, however, see the need for naval forces that can range much more widely and that can compete with the United States for sea control.³⁰ In fact, officers of the People’s Liberation Army Navy (PLAN)
now cite China’s rising energy imports to call for greater investments in capabilities for ‘Far Sea Defense’ (yuanhai fangwei) and to assert their service’s centrality in defending the country. Yao Wenhuai, the PLAN deputy political commissar, has argued that China’s growing dependence on sea-borne energy imports means that the navy has a ‘special status and utility’ within China’s armed forces:

Maritime transport and strategic passageways for energy resources have already become lifelines for the development of the national economy and society. Particularly for oil and other key strategic supplies, our dependence on sea transport is very great, and ensuring the security of strategic seaways is extremely important. We must fully recognise the actual requirements of protecting our country’s developmental interests at sea, fully recognise the security threats our country faces at sea, and fully recognise the special status and utility of our navy in preparing for military conflict.31

In keeping with this view, Yao argues that it is time for China’s army to receive a lower proportion of defence spending, and for the navy to ‘bear the brunt’ of the burden of national defence.

Yet there is also opposition to such a far-reaching naval build-up. Not surprisingly, there is considerable resistance to the idea of building aircraft carriers among Chinese army and submarine commanders, who believe the navy should focus on access denial rather than sea control.32 More broadly, Chu Shulong of Qinghua University, one of China’s pre-eminent experts on US–China relations, has criticised the notion that China can or should try to match US military power, whether to protect the sea lines of communication through which energy shipments flow or for other reasons. In his view, such a goal would be unrealistic, unnecessary and provocative.33 Taking a less direct approach, Zhao Hongtu, deputy director of the Institute of World Economics Studies at the China Institutes of Contemporary International Relations, has argued at length that the threat of an oil blockade by the United States is overblown.34 Zhao notes that such a blockade would only be likely to occur in wartime, that the United States would not be able to
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insulate itself from the disruption of the world oil market (and the world economy) that would result, and that it would be impossible to blockade the Malacca Strait effectively without cutting off oil to Japan and South Korea as well. Zhao thus sees an American-led blockade of China as unlikely.35

The idea of an ambitious naval build-up has also raised questions to which China does not yet have answers. Beijing’s recent deployment of warships to conduct anti-piracy operations in the Gulf of Aden, for example, has stirred debate among Chinese military analysts over the kind of overseas support infrastructure the PLAN would need to sustain operations in the Indian Ocean, as well as how such infrastructure can be reconciled with China’s long-standing opposition to foreign military bases.36 Chinese security analysts have also suggested that a comprehensive effort to secure China’s foreign oil supplies would not merely entail securing the sea lines of communication, but also developing the ability to intervene in oil-producing states themselves, a capability that China is far from possessing at present.37 Finally, there is no clear consensus as to how China should approach Washington and its allies as it expands and modernises the PLAN, with some writers noting opportunities for collaboration in patrol of sea lines of communication and others emphasising wariness and competition.38

**The challenge within**

Even as China debates how to manage its increasing dependence on energy imports, some officials and analysts are taking a less traditional view of the energy-security challenge. In particular, they contend that worries about external dependence have obscured a more important source of national energy insecurity: China’s unreliable, inefficient and heavily polluting energy system. In 2003, Chen Xinhua, a former programme manager for China at the IEA, helped pioneer this point of view, pointing out that ‘energy security does not only include oil supply’ and arguing that China’s energy-security efforts ‘must attach importance to internal factors’.39 In recent years, this critique has become more widespread. In 2007, for example, Zhao Hongtu of the China Institutes of Contemporary International Relations emphasised the challenge of cleaning up China’s energy sector:
As for quickly developing countries, compared with the problem of ensuring adequate supply, the environmental challenges that come from energy consumption are much more difficult to solve, and the domestic and international pressure they generate is much greater, and they deserve greater attention.\textsuperscript{40}

In 2008, Zha Daojiong, a prominent energy-security specialist at Beijing University, extended this argument, publicly chastising his colleagues for worrying too much about ‘wars, blockades, and embargoes’. Instead, Zha argued, more attention should be paid to the many ‘domestic, non-war/non-adversarial challenges’ that China faces in the energy sphere.\textsuperscript{41} That same year, Zhu Chengzhang, who served in China’s Ministry of Energy until it was disbanded in 1993, argued that ‘electric power security is the most important energy security problem’ for China.\textsuperscript{42} Zhu proceeded to call for a variety of administrative and market reforms to make electricity generation more reliable and environmentally sustainable. To be sure, these writers are not completely unworried by China’s growing reliance on imported oil – there is some concern in this regard, particularly since price spikes have the potential to undermine China’s economic growth.\textsuperscript{43} They are more concerned, however, with broadening the focus beyond oil supplies and directing more attention to China’s internal challenges.

The emergence of this domestically oriented view of Beijing’s energy-security challenge is not hard to understand, given how apparent China’s domestic problems have become over the past ten years. In the first half of this decade, a boom in heavy industry caused the energy intensity (the amount of energy consumed per unit of GDP) of the Chinese economy to rise for the first time in the reform era.\textsuperscript{44} The booming demand for electricity that ensued led to crippling power shortages across China in 2004, with shortfalls in 24 of the country’s 31 provinces.\textsuperscript{45} In early 2008 and 2010, power shortages again plagued southern and central China. The immediate cause of these latter failures was severe winter weather, which disrupted
coal deliveries to power plants. But the shortfalls also reflected artificially low, state-set electricity prices, which give power generators an incentive to keep their on-site coal inventories small.46 Finally, the massive expansion of China’s energy system in recent years, coupled with its heavy reliance on coal, has exacerbated the toll that economic development is taking on China’s environment and people. In 2007, for example, the World Bank estimated that outdoor air pollution in China was causing between 350,000 and 400,000 premature deaths each year, more than Chinese historians estimate their country suffered in the Korean War. Sensitive to the outrage such figures could produce, the Chinese government insisted that the World Bank not publish the figures, citing threats to ‘social stability’.47

China’s booming energy demand has also helped make it the world’s most prolific emitter of greenhouse gases in recent years. Generally speaking, this development, and the threat of climate change more generally, has not been a driving force behind new thinking about energy security in China. While Chinese government reports have made the case that climate change is under way and that it is already damaging China’s economy, most Chinese analysts see power supply and local pollution as more pressing problems.48 But even before the Copenhagen conference a clear sense was emerging that climate change is altering the international context in which China operates. Many analysts worry that other countries will impose ‘carbon tariffs’ on Chinese exports if Beijing is seen as insufficiently cooperative on the climate-change issue, a concern that came to the fore after the US House of Representatives passed legislation authorising such tariffs in mid-2009.49 More broadly, many Chinese officials and analysts are focused on the idea that countries are now competing to develop and produce low-carbon technologies, and there is a determination to see China succeed in this race.50 In short, while fighting climate change is not the top priority for most Chinese analysts, the emergence of climate change as a high-profile international issue is reinforcing the sense that China must modernise, and even revolutionise, its domestic energy system if it is to prosper.

While China’s top leaders remain concerned about external dependence, it is also clear that their conception of energy security has broadened considerably in recent years. At a central economic work conference in late
2003, President Hu Jintao reportedly expressed concern about the security of China’s oil imports, reflecting a traditional conception of China’s energy-security challenge.\textsuperscript{51} By 2006, however, Hu was talking about energy security in broader terms. Speaking at the G8 Summit in St Petersburg, Hu proposed a ‘new energy security concept’.\textsuperscript{52} While Hu’s ‘new concept’ called for greater international cooperation to increase oil and gas supplies, he also stressed the need to control domestic demand and for ‘sustainable development of human society’. Hu has continued to tout his new energy-security concept at subsequent international meetings, and other Chinese leaders, including Premier Wen Jiabao, have echoed his call for a ‘resource-conserving and environmentally friendly society’.\textsuperscript{53}

While this rhetoric may sound like self-serving propaganda, it is not merely cheap talk. Hu and Wen have set demanding targets over the past several years in an effort to control China’s energy demand and modernise its system. In late 2005, the leadership set an ambitious goal of reducing the energy intensity of China’s economy by 20\% between 2006 and 2010, which was then incorporated into the government’s 11th five-year plan. After a slow start, China has made considerable progress toward this target, thanks to new regulations and investments that have targeted the most energy-intensive segments of the economy.\textsuperscript{54} In 2007, the leadership set a further goal of generating 15\% of China’s energy from renewable sources by 2020, and it has pursued this target through mandates on power companies, investments in the power grid and subsidies for consumers. As a result, China is expected to exceed its renewable-energy goal, and it has emerged as the world’s leading producer of solar panels and wind turbines.\textsuperscript{55}

China has also begun to set targets for its greenhouse-gas emissions. In the run-up to the Copenhagen conference in 2009, the government announced a voluntary goal of reducing the intensity of China’s carbon-dioxide emissions (that is, emissions per unit of GDP) by 40–45\% between 2005 and 2020.\textsuperscript{56} Critics have charged that this pledge merely extends China’s current efforts to reduce the energy intensity of its economy out to 2020.\textsuperscript{57} But while China could probably accomplish more than it has promised, more important is the fact that its stated goal will require substantial new programmes
to increase energy efficiency in enterprises, buildings and transportation, all of which are likely to be incorporated into the next two five-year plans. In fact, Hu Jintao was subsequently compelled to reaffirm the target before the politburo in an effort to stifle complaints that it was too demanding. Although China’s intensity goal will allow its absolute emissions to increase as its economy does, albeit more slowly, models of climate-change mitigation typically do not assume reductions in China’s absolute emissions until after 2020. In short, China’s pledge is significant, and for the time being sufficient. Indeed, more worrying than China’s emissions pledge was its clumsy and uncooperative diplomacy at Copenhagen, where it resisted efforts to set emissions targets for 2050 and refused to support a call for a binding global treaty in the coming year. China will probably be less maladroit in the future, but it will likely continue to resist external constraints on its development.

Ultimately, China will have to rely on more than a series of national targets to address its internal energy-security challenges. Indeed, despite the progress that has been made in recent years, Beijing has been too slow to take on some of the more fundamental challenges in energy reform. Most importantly, the central government’s ability to govern the energy sector remains too weak. While there was talk in 2008 of re-establishing a Ministry of Energy, a move that would have begun to redress this problem, China’s leaders have instead created two inadequate entities: the National Energy Commission and the National Energy Administration. The former is tasked with overall policy guidance and coordination, while the latter provides the manpower and expertise for day-to-day work. In truth, neither possesses the personnel to adequately monitor China’s energy sector and ensure that central policies are implemented. China’s leaders have also been slow to liberalise downstream prices for oil and gas, as well as electricity rates, though it has developed a more flexible approach to setting oil prices. Notwithstanding these obstacles, however, it is clear that Beijing’s thinking about energy security has widened considerably over the past decade, and that external dependence is no longer the sole concern. Given the scale of the domestic challenges that remain, it is unlikely that this change will be reversed any time soon.
Engaging China on energy security

China’s changing thinking about energy security represents an opportunity for the outside world, and in particular, for the United States and its allies as they respond to China’s rise. While the ability of foreign governments and organisations to influence Beijing’s approach to energy issues has its limits, the unsettled nature of China’s domestic debate means that there are real opportunities to shape how it evolves in the future. Two broad objectives ought to be kept in mind in this regard.

The first entails shaping China’s approach to external dependence. Beijing remains uncomfortable with international energy markets and institutions, and it would prefer not to rely so heavily on other countries to secure the sea lines of communication on which it depends. These anxieties, in turn, serve to increase support for policies and proposals that arouse ire in foreign capitals. China’s support for energy investments in pariah states, its wariness of deeper cooperation with the IEA, and its interest in nationalistic naval development plans are all strengthened by Beijing’s distrust of the international energy order. Washington and its partners thus have a strong interest in reducing China’s anxieties about external dependence and increasing its comfort with the existing system.

Some progress has recently been made in this regard. China’s participation in anti-piracy operations in the Gulf of Aden, for example, has led to unprecedented interaction and cooperation between the PLAN and other navies, including that of the United States. Yet much work remains to be done, and not just in the military arena. One recent analysis has highlighted the difficulties of bringing China more formally into the IEA, noting that some existing members fear that their influence within the organisation would be diluted as a result. In this view, it would be more profitable to focus on the development of a new institution, which would be more open to China and which would focus on particularly pressing problems, such as the development of shared standards for overseas energy investments. Nonetheless, downplaying the IEA in favour of a new institution would
be premature. The biggest obstacle to deeper multilateral cooperation with China on energy issues lies not in the fears of IEA members, but in Beijing’s own hesitation. And China is likely to be wary of a new energy institution that aims to regulate how it invests abroad, not only because Beijing will fear that it is designed to constrain China but also because Beijing’s control over the national oil companies’ foreign operations is imperfect. In contrast, it is clear that China’s views regarding deeper cooperation with the IEA are in flux, and as international interlocutors continue to stress the benefits of greater transparency and cooperative stockpile management, it is possible that China will become more interested in joining the organisation in the future. Indeed, it is worth noting that current National Energy Administration chief Zhang Guobao, who has been particularly wary of increasing transparency in keeping with IEA norms, is now of retirement age and will likely be replaced in the next few years. Washington should thus continue to support Chinese membership in the IEA to make clear that Beijing is welcome, and it should encourage its allies to voice such support as well.

Secondly, even as the United States and other powers try to shape Beijing’s approach to external dependence, they should also find ways to support those calling for greater attention to China’s internal challenges. This will be difficult to do. While China’s leaders are clearly concerned about the domestic energy challenges they face, there is no organisation within the Chinese political system that can effectively champion reform. The National Energy Commission/Administration combination is a poor substitute for an actual Ministry of Energy, and the Ministry of Environmental Protection remains a relatively weak player. Foreign governments should encourage Beijing to develop the National Energy Administration into a full Ministry of Energy with sufficient staff and the authority to liberalise downstream prices in the energy sector. For its part, the Ministry of Environmental Protection needs the authority and resources to enforce central environmental regulations when local authorities fail to do so. Foreign encouragement to strengthen these institutions must be given carefully, of course, to avoid provoking a domestic backlash. For that reason, foreign governments should not present these efforts as demands that are being made upon China, but rather as
offers to help China’s leaders accomplish what they say they want to do: make China a ‘resource-conserving and environmentally friendly society’. The US Environmental Protection Agency, for example, recently concluded a Memorandum of Cooperation with China’s National Development and Reform Commission to boost the latter’s capability to monitor greenhouse-gas emissions. Similar agreements might be concluded between foreign energy ministries and the National Energy Administration, raising its profile and enhancing its ability to formulate and monitor the implementation of central energy policies.

International efforts to promote energy and environmental reform in China will have limited success, however, unless the rest of the world sets a better example. The United States, in particular, must become a more credible advocate of demand management and pollution control. The Obama administration’s decision to push health-care reform over energy legislation in 2009, even as the Copenhagen conference approached, sent an unfortunate signal to Beijing about the president’s priorities. As of May 2010, new energy legislation was being discussed in the US Senate, offering the administration another opportunity to burnish its green credentials. Yet even if such legislation becomes law, the United States will still have much work left to do. American fuel-economy standards are significantly weaker than China’s and are likely to remain so for some time, notwithstanding recent improvements. More broadly, the medium-term greenhouse-gas emissions target that Washington has proposed (a 17% cut between 2005 and 2020) is less ambitious than those of other industrialised countries. While this is a concession to domestic political realities, Washington must begin setting the stage for more ambitious actions after 2020 to take a leadership role on this issue.

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The outside world must strive to keep abreast of China’s changing thinking about energy security. China’s energy-security debate is now broader and more sophisticated than ever before, and it will undoubtedly continue to evolve in the future. Whether the specific issue is security of sea lines of
communication, IEA membership or climate change, outsiders will better understand Chinese behaviour if they are up to date on China’s evolving thinking about what energy security is and how it can be achieved. And while opportunities to shape China’s debate are not unlimited, keeping up with its domestic deliberations is essential if other countries wish to influence Beijing’s approach to energy challenges.

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Notes

4 Renmin Ribao electronic database.
8 World Energy Outlook 2009, pp. 81, 84.
9 Ibid., pp. 366, 429.
10 Ibid., pp. 90–91.
12 On the motivations behind the national oil companies’ overseas


20 Author’s interviews with energy specialists at state-run think tanks, Beijing, March 2009. For a public and fairly pessimistic analysis of pipeline security, see Zhao Hongtu, ‘Maliujia Kunju yu Zhongguo Nengyuan Anquan Zai Sikao [Rethinking the Malacca Dilemma and China’s Energy Security]’, Xiandai Guoji Guanxi [Contemporary International Relations], no. 6, 2007, pp. 40–41.

21 Ibid., p. 41.

China currently has much greater latitude to meet its demand for natural-gas imports through pipeline deliveries, given its lesser import dependence in gas and the recent opening of the Turkmenistan–China pipeline. See Stephen Blank, ‘The Strategic Implications of the Turkmenistan–China Pipeline Project’, *China Brief*, vol. 10, no. 3, 4 February 2010, p. 11.


Authors interviews with energy specialists at state-run think tanks, Beijing, March 2009.

Note that IEA requires its members to have national and commercial reserves sufficient to meet at least 90 days of net import demand. While visiting Beijing in July of this year, IEA head Tanaka stated that China’s current petroleum reserves, including commercial stocks, were sufficient to meet 86 days of net imports. Chinese officials promptly disputed this claim, saying it was much too high, and Tanaka later noted that the data were ‘unverifiable’. See ‘Chinese Official Denies 86 Days Oil Reserve Claim by IEA’, *Asia Pulse*, 6 July 2009; and ‘IEA to Pursue China, India, and Russia Ties’, *Platts Oilgram News*, 9 September 2009.


For more discussion of the possibilities in this regard, see Nan Li and Christopher Weuve, ‘China’s Aircraft Carrier Ambitions: An Update’, *Naval War College Review*, vol. 63, no. 1, Winter 2010, pp. 13–32.


Ross, ‘China’s Naval Nationalism’, p. 75.

Zhao Hongtu, ‘Maliujia Kunju yu Zhongguo Nengyuan Anquan Zai Sikao [Rethinking the Malacca Dilemma and China’s Energy Security]’, Xiandai Guoji Guanxi [Contemporary International Relations], no. 6, 2007, pp. 36–8. The China Institutes of Contemporary International Relations produces reports for China’s top leadership and plays a role in the Chinese government similar to that played by the CIA’s Directorate of Intelligence in the United States.

Notably, a recent study by scholars at the US Naval War College concurs with many of Zhao’s points. See Gabriel B. Collins and William S. Murray, ‘No Oil for the Lamps of China?’ in Collins et al., China’s Energy Strategy, 387–407.


Author’s interview with security specialist at state-run think tank, Beijing, March 2009.

For an overview of the diversity of views in this regard, see Erickson and Goldstein, ‘Gunboats for China’s New “Grand Canals”?’; pp. 64–6.


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This is not to suggest that there is no concern about climate change in China, merely that other energy-related problems are usually seen as more immediate priorities. There are, to be sure, some Chinese analysts who argue that mitigating climate change should be a high priority for Beijing. See, for example, Hu Angang and Guan Qingyou, ‘Zhongguo Yingdai Quanqiu Bianhua de Si Da Kexingxing [Four Big and Feasible Things China Should Do to Combat Global Climate Change]’, Qinghua Daxue Xuebao [Qinghua University Academic Journal], no. 6, 2008, pp. 120–32. For Chinese government assessments of the impact of climate change on China, see Information Office of the State Council of the People’s Republic of China, ‘White Paper: China’s Policies and Actions on Climate Change’, October 2008, Section II, http://www.gov.cn/english/2008-10/29/content_1134544.htm; and PRC National Development and Reform Commission, ‘China’s National Climate Change Program’, June 2007, pp. 16–19, http://www.ccchina.gov.cn/WebSite/CCChina/UpFile/File188.pdf.


56 China also reiterated its 15% renewable energy target, as well as previously announced targets for increasing forest cover and forest volume. The text of the announcement is available on the website of China’s State Council at http://www.gov.cn/ldhd/2009-11/26/content_1474016.htm.


62 On the pronounced weakness of China’s energy-governance system, see Erica Downs, The Brookings Foreign

On downstream oil prices, see ‘China Explains Details of New Oil Pricing Mechanism’, and ‘Analysis: China’s Product Oil Pricing Mechanism Needs to be More Sensitive to Markets’, Xinhua Economic News Service, 10 May 2009 and 12 March 2010, respectively. Note that China was expected to unveil price reforms for natural gas earlier this year, but as of this writing had not done so. See ‘China Delays Gas Price Reform on Dispute over Pricing Measures’, Xinhua Economic News Service, 18 March 2010.


