Win-Win: China’s ability to play an active and constructive role in the Northeast Asia Energy and Environmental Sector

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Win-Win: China’s ability to play an active and constructive role in the Northeast Asia Energy and Environmental Sector

China has long been the DPRK’s energy lifeline. Even during the Cold War, China provided a

substantial fraction of the DPRK's crude oil via a pipeline across the Yalu River. Since the withdrawal of Russian-DPRK energy supply in the early nineties, China's role became even more important. Typically, this relationship is portrayed in the West as a means whereby China sustains the DPRK as a geo-strategic asset with respect to the United States, the ROK, and Japan. South Koreans have a particular concern that Chinese investment in all kinds of infrastructure and extraction of the DPRK's raw materials, including coal, at high prices, is a reinforcing rod in the expansion of China's de facto economic dominance over the DPRK to the point that Korean national unification and sovereignty is at stake in the long run.

However, there is a more complicated and positive side to this form of Chinese-DPRK dependence. This is the way that China's energy assistance to the DPRK can lay the foundations for regional energy and environmental cooperation, as well as steer the DPRK itself slowly and incrementally to more sustainable energy practices. In this regard, done in collaboration with the ROK and the United States, China' energy relationships with the DPRK could become part of the solution to "hard" strategic problems such as the DPRK's nuclear weapons proliferation, rather than deepening the strategic challenge to the United States and its allies posed by the DPRK.

By leveraging its relationship as North Korea's key energy supplier and trade partner to address environmental and other largely apolitical issues in the North, China has many opportunities to better its own environmental quality and that of North Korea, while also contributing to the energy and economic development of both nations. China has a number of "win-win" opportunities in its relationship with its neighbor across the Yalu River. Benefits in China taking on such a role would also accrue, given thoughtful management and engagement, to South Korea and the United States. China thereby can demonstrate an active and constructive role as well as create more jobs in China through enhanced trades utilizing natural and human resources in North Korea, trades in which China, as the North's primary trading partner, have a great deal of control.

North Korea wins out from such expanded energy cooperation not only by obtaining reliable fuel, but also by demonstrating that it is able to cooperate on key energy issues, as well as conserve and restore a sustainable local environment. South Korea's wins from such Chinese-led cooperation from reduced tensions and more opportunities to engage in positive rewards for the DPRK under a "trustpolitik" framework, as well as in accruing more soft power as a responsible middle power. The United States gains from encouraging Chinese overtures toward North Korea by demonstrating that it welcomes China into the world order as a partner and leader in addressing key problems and does not seek to contain China. Environmental problems including climate change –which have the power to challenge rulers in every country—could be among the issues addressed, albeit in limited ways at first, by Chinese engagement activities with North Korea. China can set such benefits in motion by tailoring policies, investments and educational exchanges with North Korea to include and address environmental and other sustainability issues of mutual interest.

Benefits to China of Engagement with North Korea

Presidents Obama and Xi agreed in June 2013 to cooperate on climate change, and specifically, on the reduction of use and emissions of hydrofluorocarbon (HFC) compounds. Building on this and other evidence of its aspirations to be a global leader on key environmental issues, China has the opportunity to take an active and constructive role by leveraging the exchanges it already conducts with North Korea and tailoring them in such a way to bolster its "New Great Power Relationship" with the United States and the other nations of Northeast Asia. The shared watery border between China and North Korea is filled with effluents from uncontrolled landfills, agricultural runoff, and industrial pollutants. As an example of the latter, the Sinuiju Chemical and Fiber Complex, located across the Yalu from the Chinese city of Dandong, has reportedly at times released some 100,000

tons daily of liquid effluent containing lignite coal dust, sodium, zinc, and other pollutants. China has an interest in remediating water pollution in the river they share with North Korea, as well as in helping North Koreans to improve production processes at facilities in border towns, both to reduce future pollutant emissions and to create an economic investment opportunity for Chinese firms.

Benefits to North Korea

In many ways, North Korea's environmental degradation is both an outcome and a symptom of its difficult economic circumstances. North Korea benefits from exchanges with China on environmental topics both economically, as trade with China is a key source of hard currency (and, effectively, important barter goods such as crude oil and oil products) but also, by showing involvement in environmental issues of regional importance, by bolstering its profile in the international community. Through exchanges designed to improve environmental performance in the DPRK, China and North Korea become more energy-efficient and less dependent on biomass, thus ameliorating some of the environmental degradation of forest resources plaguing both sides of their border. Through such exchanges, North Korea has the opportunity to forward the development of a trained corps of technocrats with the skills necessary to grow and sustain a modern economy. China has been active in facilitating such "study tours" in recent years (see Table 1) but this role can be expanded to facilitate international opportunities to train DPRK enterprise managers as well as policy makers and planners in energy and environmental concerns.

Table 1: DPRK-China Energy and Environmental Management Exchanges, 2012-2013

January 13, 2012	Korea Sungri Economic Group Visits Fujian Coal Industry & Electric Power Company
February 5, 2012	DPRK Study Group Visits PRC Coal Chemical Industry Group in Shanxi Province
February 6, 2012	International Building Energy Conservation Technical Study Group Led by Jang Yong-il, DPRK State S&T Commission Renewable Energy Department Director, Visits Harbin Company Research and Development Center
March 19, 2012	China University of Petroleum and DPRK Petroleum Development Corporation Sign Supplementary Agreement on Cooperation, Exchange
April 19-23, 2012	The Sino-DPRK work meeting on Yalu River and Tumen River hydrology is held in Beijing and attended by Gao Bo, director of International Cooperation and Science, Technology Department under Ministry of Water Resources, and the DPRK HMB delegation led by Yu Pong-chol.

April 21, 2012	A DPRK Hydro-Meteorological Bureau (HMB) delegation led by Deputy Director Yu Pong-chol conducts inspection and exchange with PRC officials at Beijing Municipal General Station of Hydrology
April 24, 2012	A delegation of Electric Power Department of DPRK State Academy of Sciences led by Director Kim Kang-il visits Forevoo Windpower Technology Co.
May 8-9, 2012	Officials of ministries, national institutions and scientific research institutions and experts in wind energy of the DPRK and China participate in 2012 Pyongyang International Workshop on Wind Energy Technology
June 5, 2012	Raso'n City Sungri Refinery study group led by Hwang Yong-nam, director of the DPRK Nason Economic Cooperation Bureau, visits and inspects Xinda Petroleum Group's Nongan Petrochemical Company in Nongan County and meets with County Head Wang Haiying
June 12, 2012	A delegation of a study class for DPRK officials from the committee for joint development of the DPRK's "two economic zones" visits Dalian Headquarters of the Second Northeast Electric Power Engineering Company
June 25-July 5, 2012	The Liaoning Provincial Hydrologic and Water Resources Survey Bureau and the DPRK Amnok [Yalu] River Hydrologic Investigation and Reporting Station carry out a 10-day joint hydrologic survey in the lower reaches of Yalu River.
August 24-30, 2012	A 10-member delegation of the DPRK Ministry of Land and Environmental Protection led by Pyon Jong-gyun and Jo Songryong visits the Institute of Water and Soil Conservation of Chinese Academy of Sciences [CAS] and the Ministry of Water Resources on 24 August; visits the Xifeng Yellow River Water Conservation Improvement and Supervision Bureau 26-27 August; visits CAS Ansai Comprehensive Water and Soil Conservation Experiment Station on 28 August; and visits the Upper and Middle Yellow River Bureau on 30 August.

August 29, 2012	A DPRK delegation led by Vice Minister of Electric Power Industry Kim Yong-chol, president of the DPRK side of the board of director of DPRK-China Hydroelectric Power Company, leaves for China to take part in the ceremony for completion of facilities for preventing flood damage of Supung Power Station
November 9, 2012	A group from the DPRK Ministry of Land and Environmental Protection visits Liaoning Forest Tree Seeds Quality Supervision and Inspection Center.
November 12-20, 2012	Accompanied by Chengdu Tianli Chemical Engineering S&T Company's technicians, a nine-member delegation from the DPRK Namhu'ng Chemical Fertilizer Decarbonization Renovation Project Group visits Kailin Group’s synthetic ammonia company in Guiyang, Guizhou Province.A DPRK delegation headed by Vice Minister of Electric Power Kim Yong-chol visits China on 12 November to attend the 64th meeting of the Board of Directors of Korea-China Hydroelectric Power Company; visits the Jingmen 1,000-Kilovolt Ultra-High Voltage Substation and the three gorges project 15-16 November
December 7, 2012	A five-member DPRK coal mining fact-finding delegation visits the Lubanshan Northern Mine of the Chuannan Coal Industry Company in Junlian County of Sichuan Province in the company of Cui Junwei, director of the International Department of the Sichuan Provincial Association of Science and Technology.

December 6-10, 2012	A DPRK five-member coal mining study group led by Kim Chin-kuk, chairman of South Pyongan Province Committee of the General Federation of Science and Technology of Korea, visits Sichuan Province on 6 December to conduct technical exchanges with Sichuan coal mining enterprises and coal mining machine manufacturers. Accompanied by Cui Junwei, international department director of the Sichuan Province Association for Science and Technology, the delegation visited Chuannan Coal Industry Company's Lubanshan North Mine in Yunlian County, Sichuan Province, for a visit and technical exchange on 7 December; visits Lubanshan South Mine on 8 December; visits Neijiang Fenghuang Coal Mining Machinery Company on 9 December; and visits Sichuan Huarongshan Longtan Coal Power Company on 10 December
December 27, 2012	A six-member delegation headed by Pak Chol, vice president of the DPRK Puksong Corporation, visits the Fujian Energy Group Company
February 5, 2013	A DPRK Rason City Economic Cooperation Bureau delegation led by its Director Hwang Yong-nam visits the Yaotian Gas Group in Yanbian, Jilin Province to discuss the 2013 Rason coalbed methane extraction project invested by the Yaotian Group.

A recent example of this burgeoning cooperation is the commencement of planning and construction of a new, second joint hydropower plant on the Yalu River. That project stands in stark contrast to initially promising projects, such as a proposed bridge across the Yalu to handle increased road and rail traffic which was indefinitely placed on hold.[1] First announced in 2010[2] in a Sino-DPRK agreement on equal development of Yalu river resources, the Chinese side will build the Wangjianglou Power Station (WPS) on the border river, while the DPRK side will build the Changchon Power Station (CPS). The DPRK side has formally started construction on CPS, with construction materials and power station equipment supplied by WPS Engineering and Construction Bureau of China's Northeast Grid, and exported by Yunfeng Power Generating Plant's Industrial Corporation's Water Resources and Hydropower Construction Company in the form of trade. The DPRK side has requested the Chinese side to open up a corridor for building the border river CPS so as to mass transport construction materials and equipment supplied by the Chinese side.

In order to support CPS construction, the Ji'an City Export-Import Inspection and Quarantine Bureau has set up an ad hoc group to offer their services by establishing a liaison mechanism with WPS and CPS Project Command Center and to promptly understand the progress and arrangements for project construction.[3] According to the Bureau, they have provided counseling and materials on the inspection and quarantine laws, decrees, and policies, and to register Yunfeng Power Plant

Industrial Corporation's Water Resources and Hydropower Construction Company as an enterprise for self-reporting inspection and quarantine. Together with the relevant departments, they have studied and formulated the "Operating Procedures (Tentative) for Inspection and Quarantine of Export Equipment and Materials Used for Yalu River Changchon Border River Power Station Project," conducted place-of-origin inspection, and ensured the quality and safety of the construction materials and equipment to ensure the smooth progress of the power plant.

In line with these study tours and this project, other areas in which the DPRK can benefit from exchanges with China (and eventually, if not so immediately, other nations), include the upgrading of electrical and other energy infrastructure, as well as roads, sewage treatment, communications, and a host of other areas. Although North Korea's energy supplies overall grew only slowly, if at all, as they grapple with the isolation of international sanctions, if and when those sanctions are eased, their energy demand is likely to increase rapidly, and North Koreans with skills and experience dealing with technical issues in collaboration with outside groups will be in high demand. Although news from North Korea in recent years has indicated that a number of small to medium-sized hydropower projects are in the works, North Korean energy infrastructure will continue to need improvements, especially to support the growth that is planned in Special Economic Zones, including a recently announced deal to refine Mongolian crude oil at its refinery in the Rason area.

Benefits to South Korea of Engaging with North Korea

The more secure North Korea feels in its sovereignty, the less threat it feels, the more likely it is to engage in activities supportive of "Trust-politik" efforts. To the extent that South Korea takes the lead in dealing with North Korea, particularly on less-political issues of mutual concern such as those in the energy and environmental realm, it exercises regional leadership and increases its "soft power" internationally. In addition, efforts to aid North Korea now will pay dividends for South Korea in the future. For example, at some point in the future, if the Korean Peninsula is re-unified (either in a de-facto manner as an economic union, or with full integration of the Koreas), South Korea will be obliged to rebuild practically from the ground up the North's power sector. To the extent that electricity generation, transmission and distribution infrastructure issues can be addressed, even in small, local areas, before reunification, the effort of grid reconstruction can be reduced, and the knowledge gained in collaborative efforts in rebuilding energy infrastructure in small areas will make the larger rebuilding effort easier.

The U.S. Should Let Regional Players Take the Lead

As China takes an active and constructive role by helping to stabilize this sometimes volatile region, the U.S. can demonstrate that it is once again welcoming China into the World Order – not trying to contain Chinese ambitions. By letting South Korea take the lead on engagement with North Korea, the U.S. also relieves some strains on the U.S.-Korea relationship. U.S policy toward North Korea almost always defaults to Cold War and nuclear deterrence –which predictably leads to increased tensions - so letting South Korea take the lead also has the effect of de facto experimenting with a new foreign policy that first "does no harm."

China-North Korea energy trade

North Korea depends more on China than any other country to meet its energy requirements. China is essentially North Korea's only supplier of oil (via a pipeline across the border), and a major supplier of oil products such as diesel and gasoline. China's coal imports from North Korea, at nearly 12 million tons and 1.2 billion dollars in 2012, according to the UN "Comtrade" database, provides a huge part of North Korea's total export earnings. It may be possible for China to tailor its

energy, and energy-using infrastructure—exports to North Korea in a way that contributes to more efficient energy use, for example, setting up local markets for liquefied petroleum gas to encourage North Koreans to reduce the use of biomass for cooking and thereby slow degradation of forest and soil resources, or deploying renewable energy systems when it makes investments in mines and other business ventures. Doing so would help North Korea gain additional experience with such technologies, and smooth the eventual deployment of more efficient, environmentally-friendly energy use nationwide.

Modalities to effect these changes

China already conducts numerous education exchanges with North Korea in many fields. Tailoring future exchanges in four fields to include third parties or international agencies can help address problems in several crucial North Korean economic and environmental fields simultaneously: agriculture, water, mining, and forestry. In the agriculture field, efforts should focus on agricultural sustainability and ensuring North Korea can feed itself. In terms of water, efforts should focus on wastewater treatment facilities and reducing the level of pollution of inland and international waters by sewage and industrial wastes, as well as improving sanitation and thus human health. North Korea's rapid industrialization, however, degraded lands, soils, and riverine systems. In concert with its substantial and increasing activities in the North Korean mining sector, for example, China could offer education and engagement efforts that focus on remediating or at least stabilizing past mining sites and industrial waste dumps. The forests of the Korean Peninsula suffered heavy losses during colonization and the Korean War. Education on reforestation and afforestation would literally plant seeds for future growth.

Conclusion

China occupies a unique position geographically and commercially in its relations with North Korea. With minor adjustments and proper management, China can use this relationship to improve its relationship with the United States and South Korea, and can create build its capacity to provide technical assistance and training to the DPRK in energy and ecological rehabilitation and remediation. Since North Korea's economic condition and environmental condition are intimately related, as China improves North Korea's environmental conditions, it also increases economic opportunity in China in general, and in China's Northeastern Provinces in particular, while creating a framework to address some of the DPRK's enduring ecological problems.[4]

References and Further Reading

von Hippel, D.F., and P. Hayes (2009), "DPRK Energy Sector Development Priorities: Options and Preferences", in the Special Section on Asian Energy Security of Energy Policy, Volume 39, Issue 11, November 2011, Pages 6781-6789 available as http://dx.doi.org/10.1016/j.enpol.2009.11.068.

David F. von Hippel, Peter Hayes, James H. Williams, Chris Greacen, Mick Sagrillo, and Timothy Savage (2001), Rural Energy Survey in Unhari Village, The Democratic People's Republic of Korea (DPRK): Methods, Results, and Implications, dated May 20, 2001, and available as http://oldsite.nautilus.org/archives/pub/ftp/napsnet/special_reports/unhari_survey1.pdf.

Michael Kohn and Yuriy Humber (2013), "Mongolia Taps North Korea Oil Potential to Ease Russian Grip", Bloomberg Business Week, dated 2013-6-18, available as http://www.businessweek.com/news/2013-06-17/mongolia-taps-north-korean-oil-potential-to-ease-rus

sia-reliance.

Robert Winstanley-Chesters, “Treasured Swords: Environment under the Byungjin Line”, dated 3 June 2013 and available as: http://sinonk.com/2013/06/03/treasured-swords-environment-under-the-byungjin-line-part-1/

The White House, Office of the Press Secretary, “United States and China Agree to Work Together on Phase Down of HFCs”, dated 8 June, 2013 and available as: http://www.whitehouse.gov/the-press-office/2013/06/08/united-states-and-china-agree-work-together-phase-down-hfcs

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[1] Seong Yeon-cheol, “Report: China-North Korea bridge opening postponed indefinitely” The Hankyoreh, November 1, 2014 at: http://english.hani.co.kr/arti/english_edition/e_northkorea/662478.html

[2]North Korea Economy Watch, “DPRK-PRC plan two more Yalu River dams,” April 1, 2010, at: http://www.nkeconwatch.com/2010/04/04/dprk-prc-plan-two-more-yalu-river-dams/

[3] At: http://www.jilinja.gov.cn

[4] P. Hayes, “Unbearable legacies: The Politics of Environmental Degradation in North Korea,” *Global Asia,* Volume 4, Number 2 Summer 2009, pp. 33-39, at: http://www.globalasia.org/Issue/ArticleDetail/371/unbearable-legacies-the-politics-of-environmental-degradation-in-north-korea.html; and Peter Hayes, “Enduring Legacies: Economic Dimensions of Restoring North Korea’s Environment”, The Nautilus Institute for Security and Sustainability, dated 18 October 1994 and available as: https://nautilus.org/staff-publications/enduring-legacies-economic-dimensions-of-restoring-north-koreas-environment/#axzz2hKqJJbIp

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