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Energy Cooperation in NE Asia

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Energy Cooperation in NE Asia

Introduction

Efforts to enhance energy security and therefore economic security in North East Asia have been gaining ground in the last few years. World energy demand is anticipated to increase 53% by 2030, increasing pressure on countries to ensure their energy security.¹ In NE Asia, many regional energy projects that could aid energy security are under discussion, but few have reached the implementation stage. If implemented, the projects would increase the economics of energy supply in the region and improve the reliability of energy supply. Projects such as grid interconnections could better ensure backup energy supplies are available in an emergency. Joint projects will distribute the costs among a larger group of investors, and some efficiency in project implementation by completing a pipeline from Russia, through Japan, and to North or South Korea instead of doing this project in a piecemeal fashion as it each country is convinced to invest. But regional and national politics are getting in the way of such cooperation. Creating a nongovernmental framework for NE Asian energy cooperation might prove to be the catalyst needed to spur regional efforts to implement these projects. The framework could provide a more objective economic and financial analysis of projects so the advantage of the project's conduct would be clarified for all possible stakeholders at once. A council might consist of two parts: a project evaluation team of energy experts from the region, potential financiers, and possibly private sector investors, and a governing board of regionally influential people.

The regional nature of the energy projects under discussion means they could be extended to North Korea. Such energy cooperation in NE Asia could provide an additional mechanism to help spur North Korea's agreement in the Six Party Talks. International efforts to entice North Korea into giving up its nuclear weapons have focused on energy, but have not proven to be successful to date. One possible reason is that the offers were standalone projects in North Korea. No other country was involved or affected if the project did not go forward. If an energy project also benefited neighboring countries, North Korea might gain confidence that the energy project would be completed, increasing its motivation to cooperate more effectively.

Thus energy cooperation in NE Asia could enhance regional security in two ways – by improving energy reliability and security for each country, and by providing some measure of additional assurance that North Korea would cooperate in the Six Party Talks due to shared regional benefit from energy projects.

Increased Energy Security Risk

Energy security is an issue for every country in NE Asia for a variety of reasons, ranging from lack of domestic energy resources to lack of financial and/or technological

¹ Itoh, Shoichi, "Prospects and Limits in Eastern Russia's Energy Potential: Implications for Northeast Asian Regional Cooperation," Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006.

capability to tap one's own energy resources. The timing is propitious for regional energy cooperation to help remedy energy security needs from Russia to South Korea. For example, the consumer countries of China, Japan and South Korea would benefit from closer or merely additional energy supply from Russia. Russia's energy security derives from its ability to develop its considerable energy resources for both domestic use and sale on the international market. Russia could benefit from these consumer countries investing in east Siberia and the Russian Far East to help it explore and produce what may be 75% of its energy resources.² This external investment may be vital in the very near term as there is some evidence that Russia has not invested sufficiently in its energy sector (1/3 of the re-investment done by other countries)³ and may soon risk defaulting on its energy supply contracts.

Another energy security risk is the potential for North Korea to implode from economic collapse, an underlying concern of the Six Party Talks. Action to advance the Six Party Talks to help stabilize North Korea may now be critical to regional and international security, especially with the increased risk that nuclear weapons could fall into unpredictable hands if North Korea collapsed. All participants in the talks agree that if North Korea could access more energy, its economic viability would improve and regional concerns regarding North Korean collapse would ease.

Meeting this regional security concern could also encourage regional and international players to consider joint steps to pressure the North Korean regime to curtail and destroy its nuclear weapons program. Clearly, the game has changed since 2003. North Korea has had time and access to its nuclear materials and facilities to separate enough plutonium from its spent fuel to build at least a couple of nuclear weapons. The stakes for success in the Six Party Talks are much higher. But DPRK has also enhanced its bargaining power, so a win-win deal is needed. Would North Korea accept a deal inducing it to give up its nuclear weapons, the source of its increased regional power and leverage against the U.S.? Does such a deal exist? As in the February 13, 2007 Six Party Talks deal, some upfront benefit must be offered to North Korea, in this case unfreezing its assets and heavy fuel oil, to create the win-win balance needed to keep North Korea cooperating.

National Energy Profiles in NE Asia

In November 2006, a workshop was held in Seoul, South Korea to discuss the idea of energy cooperation among the NE Asia states, Russia and the United States; essentially five of the parties in the Six Party Talks, excluding North Korea. At this workshop, participants discussed the idea of energy cooperation in NE Asia, the regional advantages and advantages to each country, the likelihood of a project getting started and what a good starting project might be, and the value of creating a nongovernmental mechanism to promote energy cooperation and stimulate action in the region. The papers presented

² Simoniya, Nodari Alexandrovich, "Energy Cooperation as a Main Link to the Efforts to Bring Stability and Peace in the Korean Peninsula and the Asia Pacific", Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006.

³ Itoh, *ibid.*

at this workshop will provide the foundation for the next part of my paper as the participants were energy experts from their countries and certainly know more than me about their energy situations and energy needs.

China

China is the key consumer in the region and second only to the United States in energy consumption. China's population had reached 1,307,560,000 by the end of 2005 with 57% living in rural areas.⁴ Its GDP has been growing rapidly, some say by 10% a year from 1990-2005.⁵ In 2005, China's domestic energy supplies met 92.3% of the total energy demand, of which 68% was met with coal. The breakdown in the remaining energy resource used was oil at 21%, primary electricity 7.2 % and natural gas 2.9%. This means that China only needed to import approximately 8% of its energy needs, but this situation is changing, especially with China's desire to promote better environmental energy use and conservation.

Conservation appears to be China's top energy priority for understandable reasons. China has high energy intensity due to growth in both the heavy and chemical industries. Moreover, without conservation, environmental concerns arising from coal use will only increase. China's energy strategy, passed in June 2004, has seven priorities in addition to conservation. These include: ensuring that energy development is rationally distributed geographically in China so that the needs of all areas are addressed, relying on scientific and technological advances and innovation, fully tapping domestic energy resources and overseas resources and markets, but to the degree possible the plan is to focus on domestic supply. The plan notes that China should actively participate in energy cooperation. However, China's efforts have been more focused on "petro-nationalism" thus far, gaining sufficient supplies on a bilateral basis to meet its needs on time rather than engaging in regional cooperation. The strategy attaches great importance to energy security, and "petro-nationalism" can meet this need. In the long run, it is not clear that this energy security strategy can meet China's needs as well as a strategy focused on regional cooperation could, as China is likely paying a higher price for energy supplies on the petro-nationalist basis than it would under regional cooperation. The energy strategy does note energy supply should be diversified, oil reserves should be constructed and energy emergency warning and rapid response mechanisms should be improved.⁶

Following logically from its priorities, China's interest in energy cooperation in NE Asia appears to be focused first on energy efficiency, conservation and clean coal technology according to our workshop participants.⁷ The specific energy technologies of interest cover several renewable energy sources in addition to clean coal and hydrogen energy technology. China noted Japan and the United States as possible markets for these

⁴ Gao, Shixian, "China's Energy: Present Situation and Policies," Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006., p.39

⁵ Ibid.

⁶ Ibid.

⁷ Xia, Liping, "Projects for Energy Cooperation in Northeast Asia: Chinese Perspectives," Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006.

technologies. Certainly China could benefit from energy conservation which could reduce its skyrocketing energy needs and energy prices. However, for environmental reasons alone, it will be important for China to develop some alternatives to fossil fuels, especially coal. That being said, the amount of coal available in China is large and for energy security reasons, it will remain an important energy resource. The continued use of coal will require that China adopt cleaner coal technologies to help ensure public health in China and in the region.

China will be a key player in regional energy cooperation because it has great needs which could be met more economically if met through cooperation. One such project is the possibility for joint development by Japan and China of the East China Sea. Progress was made in this respect in 2004, but negotiations continue today.⁸ If an agreement can be reached, joint development of the oil resources could improve the economics for both countries. In fact, one Chinese participant in our workshop suggested that a mechanism of coordination be created between oil producers and consumers in NE Asia. Noting that four of the five countries present were consumers and Russia was a large producer; he noted that this raised considerable opportunity for regional cooperation.⁹ The workshop also noted, however, that cooperation might not be possible without resolving nationalistic tendencies among the current governments and, for some projects, the North Korea nuclear issue. It was suggested that multilateral negotiations could result in win-win deals especially for China, Japan and the U.S. as a result of their growing economic interdependence. In fact, he expressed the view that multilateral cooperation on energy should (and the workshop concluded “could”) be done on the basis of mutual benefit, common security and cooperative security.¹⁰

Japan

For Japan, energy security has long been a part of its national security because of its lack of domestic energy resources and the important contribution of energy security to economic growth and security. In the post WWII environment, Japan had to rebuild its economy from scratch. The relationship of economic growth and energy supply security was central to the rebuild because Japan has so little of its own energy resources. This remains true today and in 2005, Japan supplied only a little more than 17% of its own energy needs. It is therefore focused on securing an open and transparent energy market and a safe import route from the Middle East.¹¹ A Japanese expert in our workshop also noted the growing economic interdependence between China and Japan; China became Japan’s largest trading partner in 2004. Further, Japanese firms are investing in China and therefore wish to see a stable energy situation in China.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Kobayashi, Yoshikaza “Toward Further Consolidation of Regional Energy Security: A Japanese Perspective,” Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006.

Thus, although the Middle East energy producers have been reliable and stable suppliers for Japan, Japan sees value in supply diversification through Russian energy resources and thus has an eye on progress towards energy cooperation in the region. Japan also suggested that energy cooperation can be important as a means to reduce green house gas emissions. It is estimated that China will become the largest CO₂ emitter by 2010 surpassing the U.S. This fact is motivating Japan to place a high priority on regional energy cooperation, on energy conservation, clean coal and renewables for all countries because of China's heavy reliance on coal (68%). Japan is looking to the Clean Development Mechanism as a means for China and Japan to cooperate.

Because Japan is such a large energy importer it is worried about increasing signs of energy nationalism with the turn of the new century, and the use of a mercantilist approach to energy resource procurement. Russia, Venezuela, Ecuador and Bolivia are all headed in this direction. Mercantilism is being seen in Chinese, South Korean and Indian practices as they act to procure overseas upstream assets. The rising Chinese and South Korean energy demand is reducing Japan's bargaining power in energy markets and is inducing anxiety in Japan over future oil supplies. Japan sees that multilateral cooperation could mask some of this growing nationalism and facilitate energy security regionally because the regional players could negotiate with suppliers giving them more bargaining power. The concept of a hub and spoke form of cooperation was identified as inefficient in the context of the multilateral cooperation needed. The Japanese government has recently completed a new energy strategy which highlights the importance of regional cooperation, especially in energy efficiency. Therefore the idea of multilateral cooperation through a new mechanism is in keeping with the new Japanese government policy if the political and diplomatic environment allow it.

South Korea

South Korea is very dependent on energy imports; in 2005 it imported 96.4% of its energy.¹² It ranks tenth in the world in energy demand, 4th in oil imports and 2nd in coal and Liquefied Natural Gas (LNG) imports. Its energy use in 2005 consisted of 44.3% oil, 3.9% coal, 16% nuclear and 13.1% LNG which represents a trend towards less use of oil and increased use of nuclear and gas. Over 70% of this energy was used for transportation and industrial purposes. Its energy demand is anticipated to increase by 33% by 2020 with LNG, nuclear and renewables meeting approximately 10% more of energy demand. Its energy strategy is focused on four policies: sustainable development, use of energy markets, technology improvement, and multilateral cooperation. South Korea believes that by cooperation, growing oil stocks and enforcing the market, energy prices will remain better. South Korea has a significant overseas development program for oil which is currently focused on downstream investment, especially in refineries. The government is now encouraging investment in upstream business.

¹² Ryu, Ji-Chul, "Challenges and Strategies for Energy Security on the Korean Peninsula," Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006.

South Korea sees the opportunities resulting from NE Asian energy cooperation as significant. They have been exploring several different project areas from oil pipeline, refineries and stockpiling to cross border gas pipelines and electricity networks involving East Siberia and the Russian Far East. It has the most to gain from regional cooperation and interconnections because of its geographic location, especially if North Korea can be brought into the projects. Nonetheless, South Korea, as with China and Japan, believes that energy cooperation with North Korea should not begin until North Korea agrees to dismantle its nuclear weapons programs, decouples energy issues from politics, gains access to the international financial organizations such as the IMF, World Bank and Asian Development Bank, and agrees to consult closely with countries of region on an integrated energy system.

Russia

Russia is the major energy producer of the region and yet it too has energy security concerns. These stem primarily from the need to expand its regional relations beyond the West and into the Asia Pacific region. President Putin has made this one of his goals for Russia's two eastern regions, East Siberia and the Far East, which contain 60% of the land mass of Russia and a small population relative to western Russia, but contribute 13% of Russia's GDP.¹³ A Russian participant in our workshop estimated that the Russian Far East (RFE) contains 75% of Russian energy resources.¹⁴ But with such a small population, less than 2 million, the region suffers from "demographic insecurity" because the population is slowly leaving, hindering the region's socio-economic progress.¹⁵ The value of developing East Siberian and RFE gas and oil is clear to Moscow, and President Putin has begun to promote it, but with the clear understanding that he will also control it.¹⁶ President Putin and his Energy Minister indicated that Russia anticipated it would triple its energy supplies to NE Asia by 2020.¹⁷ President Putin has been making visits to the NE Asia region. In March 2006, he visited China and announced that Russia would supply 80 billion cubic meters of natural gas annually via pipelines from West and East Siberia. A new project was announced, the so-called Altai pipeline, which would bring 30-40 billion cubic meters of gas annually to China from western Siberia. One workshop participant noted that this did not address an earlier project agreed to by Chinese and Russian companies from the Kovytko filed in the Irkutsk oblast. The difficulties surrounding the initiation of this project apparently point to some of the reasons why Russian-NE Asian cooperation on energy has been slower than it might be.

The possibility exists to escalate cooperation. The RFE resources are poorly explored; and while there may not be large oil deposits, there is gas for export and huge amounts of coal as well as hydroelectric power, where it is estimated that RFE could provide 640

¹³ Senderov, Sergey Mikhailovich, "Energy Security of Northeast Asian Countries through Energy Cooperation," Energy, Regional Security and the Korean Peninsula: Towards a Northeast Asian Energy Forum workshop, November 2006.

¹⁴ Simoniya, Op.Cit.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Simoniya, Op.cit.

billion kilowatts, of which only 135 billion have been developed. Asia is the most important market for these energy resources especially as it moves toward becoming perhaps the most important center of the world economy. It is in Russia's interest to help ensure a stable energy market for Asia and for Asia to rely more on Russian supplies, which create diversity of supply beyond the Middle East. Russian supplies can also contribute to cleaner energy in NE Asia with development of its hydroelectric potential and its high quality gas, as opposed to low quality coal in the NE Asia region.

Russia's Eastern Region could benefit from investment in energy development in the region from Eastern Asian firms. Such investment has been slow to date, and several tens of billions of US dollars of investment in oil and gas sectors are needed just to maintain the existing production levels into the future. Implementation of energy projects in Eastern Russia can also mitigate the social tensions by creating jobs and increasing employment, especially for skilled workers.¹⁸ Yet Russia itself is delaying such investment because it has not created the needed investment plans to attract investors. Russian oil companies on average spend only one-third of the resources that foreign companies do on investment in exploration and exploratory drilling¹⁹, hence the need for the large investment dollars mentioned above. Further limiting investment in Russia however, is a new May 2005 Putin policy limiting investment in Russian companies linked with national security and large oil and gas reserves, a category into which approximately 30 oil fields and 40 gas fields fall. In these cases, the Russian investors must have 50%+1 of the shares. As the world's largest producer of gas and second largest of oil, this and the lack of action on improvements to the business investment environment in Russia, especially high shipping tariffs, export taxes, and the underdeveloped rail infrastructure for exporting, have hurt its chances to get the needed investment and technology to develop its eastern energy resources.²⁰

What Energy Projects Might Make Sense?

A number of regional energy projects have been detailed in many fora, but few have been started, much less completed. Many of these projects should be considered because of their contribution to the improved reliability and economy of regional energy supplies. For example, the Kovykta Russian gas pipeline to China and the joint Japanese and Chinese investment and development of energy resources in the East China Sea. Implementation of these and other projects are primarily in limbo due to stalemate, or have not been initiated simply due to geopolitics on one side or the other. Russia's recent actions to employ energy as a diplomatic weapon in Eastern Europe do not encourage NE Asians to invest there. In fact there is some concern that Russia's offer to China to build the Altai Pipeline was because Moscow sought to dangle the "China card" before both Europe and United States, who had criticized Russia after its suspension of gas supplies to Ukraine at the beginning of 2006.²¹

¹⁸ Senderov, Op.Cit.

¹⁹ Itoh, Op. Cit.

²⁰ Ibid.

²¹ Ibid.

But Japan and China also find reasons such as Koizumi's visit to the Yasukuni Shrine as a basis for not initiating or halting energy cooperation. Many concerns among the consumer countries are dated and irrelevant in an era where new security risks are prevalent. The consumers could find improved leverage both regionally and in negotiations with Russia by working together. Energy projects rarely profit only one side in the truest sense of that word. Both sides gain in economic security if the deal is well-structured. The buyer has an improved economic situation from more reliable energy supplies and the seller has the profits from the energy sales.

There are many other reasons to cooperate. First and foremost may be environmental impact reduction. NE Asia energy needs are still met primarily by coal. This is especially true in China, and the Koreas. Coal is a main source of the environmental pollution. A strategic dialogue with a cooperative focus is needed to ensure that clean coal technology development and sharing commences as quickly as possible and/or substitutes are found to reduce coal use. Second, NE Asia is the largest LNG importer in the world. Its bargaining power is enhanced if the countries negotiate together with suppliers rather than bilaterally. China and Japan have been successfully split by Russia over the effort to be the outlet of a large new Russian oil pipeline. However, there is evidence that if they partnered in negotiations with Russia, all three could find satisfactory solutions. Russia does not hold all the cards when it comes to oil sales into NE Asia. Japan, for example, has sufficient refining facilities to be able to depend largely on lesser quality, and hence cheaper Middle Eastern oil.²² Additionally, Japanese energy demand is anticipated to peak in 2014-2026, more or less coinciding with the period of time in Russia when investment is needed in energy development to keep up with contracts. Japan has less incentive to invest in this case unless the price is right as it can continue to depend on current suppliers.²³ Russia's offer of the Altai pipeline project to China also raises some doubts as to Russia's credibility as a reliable supplier because the amount of gas Russia proposes to supply exceeds Russia's maximum export capacity to Asia by 2-3 times.²⁴ Russia has also driven China out of active involvement in the finance and infrastructure development in the Russian energy sector which does not bode well for cooperation. Russia may find it needs to bend its positions to achieve winning arrangements for itself and its eventual partners in regional energy projects.

First Investments

So what might be useful first investments under a cooperative framework? Based on the idea that win-win deals are needed for the consumer and producer sides, there are three suggestions. First is cooperation on energy efficiency projects in China especially. The possibility to reduce energy demand in China will improve China's economic future, reduce environmental impacts, leave additional resources for other countries, and provide markets for energy efficiency technology and equipment from Japan, the U.S., and South Korea. Russia could also benefit from improved energy efficiency and thus all parties in

²² Ibid.

²³ Ibid.

²⁴ Ibid.

the cooperative framework could benefit. Another advantage of this project would be that the technology is here, it does not require long term infrastructure development or large capital investments. Thus, this type of cooperative project could provide positive results fairly quickly.

Second, as mentioned earlier, energy needs in the region are met in major part by coal which is relatively abundant everywhere except in Japan. Yet, the environmental consequences of use of coal, especially in China and Russia, are sometimes devastating. A clear area for regional collaboration is clean coal technology, both the existing state-of-the-art technology and the next generation. The sooner clean coal technologies are implemented in NE Asia, the better for public health and the environment. There are some available mechanisms which could help to fund such work. An important funding route may be the Clean Development Mechanism under the Kyoto Protocol. Japan as noted above would like to seek such financial support for work in China. There is also an Asian Development Bank loan program on energy conservation which might be useful as a first step as it will provide investment funds for energy efficiency and gas mitigation investments.²⁵

Third, there are some grid interconnection investments which could prove beneficial and increase energy security by providing links to send electricity where needed on an urgent basis among the connected countries. There has been some talk of a NE Asia shared grid like that of Europe. There are some distinct advantages in emergency situations and also in opening up new markets for specific power producers. Of particular interest here could be the ability to ensure base load power facilities, such as reactors, are fully used to capacity. The electricity could be distributed where needed on a load following basis.

Another energy project that could be a win-win is the East Siberia-Pacific Ocean oil pipeline or ESPO project. This is a much larger project and one that may be underway at least in part. But the project needs to be further developed on the basis of economic and financial feasibility rather than geopolitics. Then, it would be advantageous to all involved. This is an area of Russia, East Siberia, which needs investment such as this project would provide, and the proximity to China and Japan could make the pipeline length reasonable and economic. Pipeline paths have been debated for years and most recently a pipeline path has been elucidated which could service both China and Japan enabling Russia to get investment from both. This might be especially important to nail down now as Japan's energy demand is expected to peak in the 2014-2026 timeframe, and this investment must be in place so it can be selected as part of the energy mix, otherwise Japan may turn to the Middle East to meet its peak demand and thereafter depend on the Middle East only as its demand begins to drop and Japan need not invest in new resources for some time. Currently, the pipeline appears most likely to end in China, but the project is held up apparently because Russia wants for the oil for domestic purposes.²⁶

²⁵ <http://www.adb.org/Projects/project.asp?id=40620>

²⁶ Itoh, Op.Cit.

One factor to consider in regional energy projects is the possibility that a connection could be made through or into North Korea at some point when North Korea is cooperating in the Six Party Talks. The North Korean adder to the energy cooperation equation will no doubt bring further complexities. However, most of the workshop participants felt that cooperation with the DPRK on energy was important, but the timing had to be tied to progress in the Six Party Talks. In fact, one participant noted that the failure of KEDO raised serious questions as to whether North Korea could cooperate effectively.²⁷ Nonetheless, the idea of cooperating with North Korea as an energy project partner has been discussed in other fora, which may provide important support to the Six Party Talks. A 2004 summit between Russia and South Korea resulted in agreement on preparatory measures to promote trilateral projects with North Korean participation.²⁸ In addition, one of the South Korean participants in the workshop noted that the Kovytk pipeline to ROK, which is currently planned to bypass the DPRK, may need to be re-evaluated if North Korea becomes cooperative.²⁹

Some regional projects could be chosen for cooperation with the specific purpose of helping the Six Party Talks. If carefully prepared, these could begin with implementation outside of North Korea, but make clear that when completed they would provide key energy resources and/or revenues to improve North Korea's energy supplies. North Korea's immediate needs are for increased energy (oil, gas, coal or electricity) supplies and enhanced electrical distribution.

One such project is South Korea's offer to provide 2 GW of electricity to North Korea through the Six Party talks as part of the incentive package for North Korea's denuclearization. To enable direct power delivery, this project will need to provide for improvements in North Korea's grid infrastructure, so the South Korean electricity can get to North Korea. There may be infrastructure work in South Korea to do that can also facilitate the grid connection to the North. If works begin in the South, it could provide the North with more confidence that the project will materialize. Other possibilities for energy cooperation include developing the Sakhalin pipelines projects to transport gas or oil from Russia to South Korea. The most economic solution for extending the pipelines into South Korea would require passing through North Korea. This could provide an additional opportunity of revenue from transit fees as well as gas or oil supplies to North Korea. The revenues could enable North Korea to pay for the oil or gas.

Another idea is for Russia or China to invest in a nuclear power plant, strategically located near its border with North Korea which could be connected to the DPRK depending on the outcome of the Six Party talks. The Asian Development Bank has been working with China on a grid development project in Liaoning province, which could lay the foundation for an electrical link into North Korea. Therefore, this location might be ideal for a reactor project.

Projects ideas are summarized in Table 1.

²⁷ Kobayashi, Op. Cit.

²⁸ Simoniya, Op. Cit.

²⁹ Ryu, Op. Cit.

NE Asia Energy Cooperation Council

Recognizing that regional energy projects can be complex technically, that funds needed for these projects are considerable, and especially if a project might later involve the DPRK, the projects can be unpredictable in time and cost, it could be valuable have a venue to discuss project ideas. The staff of an energy cooperation council could be used to determine which projects make most economic sense and how best to implement these projects at a practical level. Then the council could meet at a more political level to determine what projects would be recommended to governments for finance and implementation. Such a council would be in addition to and supportive of the ongoing research by the existing energy research entities in the region and could be staffed by these entities in part or in whole and/or adopt projects being identified by these entities.

In November 2006, the workshop participants were asked to explore this Council concept and concluded that a new energy cooperation council was an idea worth bringing to a larger audience. Workshop participants agreed to go back to their countries to discuss the idea of such a new organization with energy and government experts and report back to the workshop organizers, with a view to conducting a follow-on workshop if the answers received from others, especially in governments, were positive.

What Might Council Look Like?

What would the Council look like? It could be composed of two levels: a 5-10 member governing board of more politically influential representatives. Each country in the council would provide one to two political or civic leaders, ideally an ex-Energy minister or other such knowledgeable person. The staff of the Council might include:

- 1-person public information program
 - Combat political opposition
 - Gather public support for projects
- 1-2 energy efficiency experts
 - Covering demand-side management, efficiency and conservation
- 6-7 experts in different types of energy
 - Oil, gas, coal, nuclear, electricity, grid management
- 1-2 experienced bankers
 - Prepare projects with banks
- 1 professional mediator
 - Help in resolving disputes in project development, and
- 3 secretarial staff.

The Council would essentially act as a broker to facilitate the development of economic energy projects in Northeast Asia. The Council would make arguments on the basis of economics and practical financial arrangements that would explain why geopolitical obstacles should be subordinated or even overlooked so that viable energy projects for the region could move forward. Agreement on the Council structure will require

multilateral consultation to ensure it is acceptable. It operations will need to be transparent so that no country feels the Council is advocating to one country's advantage. The Council would hold workshops to identify potentially viable energy projects. The workshop participants would include energy research experts, energy industry, financiers, local government entities and NGOs. Council staff could conduct individual research to identify the energy projects and/or accept ideas from workshop participants. The Council staff would then research and develop credible information on the economic and financial viability of these projects. The Council staff would need to cooperate closely with financiers and especially private industry to define these attributes of viable projects. The Council staff would then present its analyses of the projects for final review and approval by the governing board. When the Board approves a project, it would then hold discussions with governments and/or other influential actors to capture their interest.

Payoffs between projects

A small advisory group to the Council, meeting perhaps semi-annually at first with the Council staff, might also be useful in the beginning of operations to take a step back and look at the progress of the Council in preparing projects that are adopted by governments and help troubleshoot what might be done to get the Council on track if need be. The advisory group might include five people who have a broad view of the work of the Council, but are not directly involved in the work of the Council.

Project descriptions selected for discussion by the governing board would need to include:

- Regional advantages for each country participant
- Time frame for implementation
- Financing best "guesstimate", identification of possible sources of finance, or entities who might finance and how much such entities might contribute
- Private industry partners to implement the project.

The Way Forward

As mentioned earlier, the next workshop is being considered for the fall of 2007, most likely in Seoul, South Korea again. Participants would be invited and include a broader representation of the energy experts from the five countries' energy NGOs; multilateral bank representatives, such as from the Asian Development Bank, the World Bank and possibly others; private sector and government observers. The goal of this workshop is to determine if there is the will to create such a council. If so, what would be its staffing requirements? Should it have a Governing Board? Where should it be located? How would it be funded? And where should the first project focus be?

I look forward to your comments on the Council idea as we move forward in preparing the workshop.

TABLE 1

Country	Project	Type/Scope	Country Stakeholders	Financing Entity	Notes	Source
Japan	Energy Cooperation Initiative Program (under this program)	Energy conservation training	15 nations in Asia and Oceania	Government of Japan	Gov't of Japan will accept 1,500 (500 in field of biomass technology) engineers over next 5 years from East Asian countries as trainees in energy conservation, Japan plans to share its energy conservation technologies with E Asian nations	http://www.yomiuri.co.jp/dy/business/20070114TDY02010.htm
Regional	Establish renewable energy, energy efficiency and greenhouse gas mitigation investment funds	Energy conservation	Regional	Asia Development Bank		http://www.adb.org/Projects/project.asp?id=40620
Japan	\$2b in funding for energy saving projects in member nations	Clean energy initiative	Regional	Japan government		http://www.hindu.com/2007/01/17/stories/2007011707001200.htm
Regional	Establish an independent and dedicated regional Policy Development Fund for energy efficiency	Energy efficiency funding	East Asia	Japanese Central Research Institute of Electric Power Industry	This is not a project, but the main recommendation of a project to investigate ways to improve energy efficiency cooperation in East Asia	http://www.fni.no/news/061206.html
China	FutureGen	Clean energy production	U.S. , China and India	Government and industry world-wide	India and China accepted U.S. invitation to join in FutureGen project	http://www.cleanairnet.org/caiasia/1412/article-70469.html
Russia	Taishet-Nakhoda pipeline	Oil Pipeline	Russia, China, Asia Pacific	Russia	Pipeline will go to China, then Russia's Pacific coast	http://english.peopledaily.com.cn/200509/08/eng20050908_207413.html . And Linn and Tiomkin "Economic Integration of Eurasia"

Country	Project	Type/Scope	Country Stakeholders	Financing Entity	Notes	Source
Regional	Asia-Pacific Partnership	Multiple clean energy	Australia, China, India, Japan, ROK, US	Governments and private industry	Public-private initiative to meet goals for energy security, air pollution reduction and climate change in ways that promote sustainable economic growth and reduce poverty. Over 100 clean energy projects	http://tokyo.usembassy.gov/e/p/tp-20061101-10.html
China	Astasu-Xinjiang pipeline	O&G	China, Kazakhstan	Beijing (\$800M)	China & Kazakhstan signed a \$700 million contract in 2004 for pipeline	<u>Economic Integration of Eurasia: Opportunities and Challenges of Global Significance</u> , June 2005.
Russia	Electricity export of hydro power; build electric transmission lines	Hydro Power	Russia, North Korea, South Korea	Russian, South Korean governments	Russia plans to export surplus electricity to Northeast Asian countries from Zeiskaya and Bureiskaya hydroelectric power plant. Electric transmission line from Vladivostok to Chongjin needs to be constructed, can then be extended to S. Korea.	"Triangular Energy Cooperation in Northeast Asia: Russia-South Korea-North Korea", Yongchool Ha and Beom-Shik Shin
Northeast Asia	Grand Circular pipeline	O&G	Russia, China, North Korea, South Korea, Japan		Develop a greater circular pipeline network in Northeast Asia with two sub-circular pipelines. Currently just an idea.	"Triangular Energy Cooperation in Northeast Asia: Russia-South Korea-North Korea", Yongchool Ha and Beom-Shik Shin
Regional	The Northeast Asia Regional Grid Project	Electricity Grid	China, Russia, ROK, DPRK, Japan			Organized by Nautilus Institute (initiated in 2001) Source: Nautilus
Regional	Northeast Asian Gas Pipeline Projects: Pipeline from Kovykta Field near Irkutsk to NE China and Korea	Oil & Gas To build pipelines among the NE Asian countries to carry gas from Russia to ROK and China.	Russia, China, ROK	BP, Russia Petroleum Ltd., CNPC, and KOGAS (Korea Gas Corporation) and the governments of the three countries		Source: IEA

Country	Project	Type/Scope	Country Stakeholders	Financing Entity	Notes	Source
	(est. \$12B)					
Regional	NE Asian Gas Pipeline Projects: Sakhalin 1 and Sakhalin 2	Oil & Gas				Source: IEA, Russian experts
Regional	NE Asian Electricity Network	Electricity Grid: to interconnect electricity grid across borders, in particular among China, DPRK, ROK, Russia	China, Russia, DPRK, and ROK			Source: IEA
Regional	Cross-Border Oil Pipeline in NE Asia: 1. Sakhalin export terminal and pipelines with capacity of 240-300kb/day 2. Building oil pipelines from Angarsk (east Siberia) to Daqing in China and Nakhodka in Japan	O&G: to build cross-border oil pipelines to supply oil from Russia to the rest of the NE region	Russia, Japan, China, Korea, DPRK (?)			Source: IEA

Country	Project	Type/Scope	Country Stakeholders	Financing Entity	Notes	Source
China	Shen-Da Power and Transmission Grid Rehabilitation (Liaoning province in the NE of China, borders DPRK)	Electricity grid improvements	China	Asia Development Bank (ADB) loan	While the project is focused on grid development in China's NE provinces, it lays the foundation for extending it potentially to DPRK.	Source: ADB
China	Ping-Hu O&G development project (East China Sea)	O&G resources development	China	Asia Development Bank (ADB) loan	First cross-border crude pipeline in China	Source: ADB
China	Sino-Kazakhstan crude pipeline	O&G	China, Kazakhstan	China, Kazakhstan	The first phase was completed in late 2005, operational 2006. Source: ADB	Source: ADB
China	East Siberia Pacific Ocean oil pipeline	O&G to conduct feasibility study to extend the Siberia-Pacific Coast oil pipeline to China	China, Russia	CNPC, Transneft		Source: People's Daily Online, March 22, 2006.
China	Two gas pipelines	O&G to build gas pipelines to deliver gas from West Siberia and Russia's Far East to China	China, Russia	CNPC, Gazprom	Estimated cost=\$10Bn.	Source: People's Daily Online, March 22, 2006
China	Currently, China has four units under construction , but it expects to build up to 40 reactors by 2020.	Nuclear	China		China's nuclear power plants are intended for internal consumption	

Country	Project	Type/Scope	Country Stakeholders	Financing Entity	Notes	Source
ROK	Russia's Rosneft and Korea National Oil Corp (KNOC) signed a \$250 million agreement to explore Kamchatka and Sakhalin Island oil reserves in the Far East.	O&G				
Japan	Sakhalin-2 project	O&G	UK/Netherlands, Japan, and Russia indirectly	Japan's Mitsui has 25% stake and Mitsubishi has 20% stake. It is possible that Gazprom to buy a 25% stake in the project.	Sakhalin 2 is the only major energy project in Russia currently without any Russian involvement.	
Russia (Far East)	Sakhalin 1 project	O&G Natural gas resources and pipeline development	Russia and NE Asian countries	International consortium comprising of companies from Russia, Japan, India and US.	www.Sakhalin1.com	
Russia (Far East)	Sakhalin-2 project	O&G Offshore natural gas and oil resources development	Japan, the UK/Netherlands and Russia indirectly	Partners: Japan, UK/Netherlands (Shell)	Sakhalin 2 is the only major energy project in Russia currently without any Russian involvement	

PNWCGS Mission

Our mission is to address the full range of global security issues by probing the impact of economic, social, institutional and environmental conditions that affect regional stability and global security. We emphasize non-proliferation due to its consequence for global security.



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