

The Korean Peninsula Energy Development Organization (KEDO) is a vital part of US policy to promote peace and stability on the Korean peninsula and to stem the global spread of nuclear weapons. Created as a result of the 1994 United States-North Korea Agreed Framework, which offered energy assistance in exchange for an end to the North Korean nuclear weapons program, KEDO has now been operating for over three years. In that time, KEDO has delivered more than one million tons of heavy fuel oil to the Democratic People's Republic of Korea (DPRK) and begun a multi-billion dollar reactor project in that country, both activities required by the Agreed Framework. In the process KEDO has also provided some less visible benefits, which I will outline below.

However, KEDO faces many challenges, both in implementing its projects and in dealing with North Korea. First and foremost, events over the past year have severely challenged the Agreed Framework and threatened KEDO's existence. In summer 1998, the US intelligence community reported that it had discovered what may be an underground nuclear weapons facility in North Korea, a possible violation of the 1994 accord. Then, on August 31, 1998, Pyongyang conducted the first launch of a new long-range rocket, the Taepodong. Although this launch was intended to put a satellite in space, the same system could also be used to deliver weapons of mass destruction. Frequent US-North Korean meetings have prevented collapse of the Agreed Framework through this writing (in January 1999), but there is a growing sense that events on the ground are rapidly outpacing diplomatic efforts to deal with them.

KEDO also confronts other challenges. US domestic political support for the Agreed Framework has never been strong, and has been pushed to the breaking point by developments on the peninsula. The appointment of former Secretary of Defense William Perry to review US policy—mandated by Congress—may help restore some support, but the outcome is by no means certain.

Relations between North and South will affect KEDO's ability to carry out its role, and while South Korean President Kim Dae Jung's "sunshine policy" may stabilize that relationship, it is too soon to tell. The DPRK-Japan relationship, which is critical to KEDO's continuing

work because of Tokyo's billion-dollar contribution to the KEDO reactor project, has never been good, but was set back severely by the recent DPRK rocket test over Japanese territory. KEDO has insufficient funds to carry out its oil deliveries in the near term and its reactor project in the long term. Finally, KEDO's ability to carry out its reactor project will be severely stressed in a few years when the Interna-

tional Atomic Energy Agency (IAEA) will have to certify the North as free of nuclear weapons before key nuclear components for the reactor are delivered.

This viewpoint seeks to make clear KEDO's essentially positive role since it was established in 1995, in order to make the case for preserving KEDO despite the current difficulties confronting the Agreed Framework. I will pay special attention to the future challenges faced by the organization and how it must deal with them if it is to continue its work effectively. This viewpoint will first briefly review the history behind the establishment of this new organization. It will then describe KEDO's useful role in promoting nuclear nonproliferation norms on the peninsula, in encouraging indirect North-South dialogue, in promoting modernization/engagement of the North, and in harmonizing various national policies on an important regional security issue. Finally, the viewpoint outlines the challenges posed by domestic and regional politics, funding shortfalls, and future requirements for implementing international safeguards

**VIEWPOINT:
THE KOREAN PENINSULA
ENERGY DEVELOPMENT
ORGANIZATION:
ACHIEVEMENTS AND
CHALLENGES**

by Joel Wit

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in North Korea, and proposes some ways to address these challenges.

ORIGINS OF KEDO

KEDO was established as a result of the 1994 United States-North Korea Agreed Framework, which ended a crisis over the North's nuclear weapons program. North Korea's nuclear weapons program seems to have begun in the 1960s. While Pyongyang's willingness to join the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1985 helped alleviate international concerns, its continued construction of facilities at the Yongbyon nuclear installation, discrepancies in its declaration to the IAEA of past plutonium production, and its threat to withdraw from the NPT triggered a slow-motion crisis beginning in early 1993. The crisis reached its height in the spring of 1994, when North Korea began to unload spent nuclear fuel from its five megawatt reactor at Yongbyon, possibly in preparation for reprocessing. A trip by former president Jimmy Carter to Pyongyang at this critical moment helped avoid further escalation and paved the way for new bilateral meetings between the United States and North Korea.

As a result of high-level talks held between the United States and North Korea in July 1994, it became clear that the provision of light water reactors (LWRs) was critical to halting the North Korean nuclear weapons program. Such reactors could meet the energy needs claimed by the North while being more proliferation-resistant than the reactors the North had already built or had under construction. Although the United States examined a number of options—including providing the reactors itself—the only possible alternative seemed to be securing the reactors and their financing overseas. Reflecting long-standing concerns in the South about being left out of US talks with the North, the Republic of Korea expressed a clear interest in providing both the reactors (the Korean Standard Nuclear Power Plant, based on a US-designed reactor) and substantial financing for the project. Japan stated that it would also provide financing for the South Korean reactors. By September 23, when high-level talks were to resume, the concept of an international consortium providing South Korean-made and -financed LWRs, and any interim energy source required by the DPRK, was in place. It became a critical feature of the Agreed Framework signed on October 21.

Following the completion of the Agreed Framework, the United States, South Korea, and Japan had to move quickly to establish a new international organization, KEDO, so implementation could begin. In March 1995, the trilateral partners reached agreement on a charter that created a centralized decisionmaking structure based upon an Executive Board of members drawn from these three countries. While efforts to gain international support over the next few years made progress—the most notable achievement was the accession of the European Union to the Executive Board in 1997—that support still fell short of initial expectations. Other countries were unhappy with KEDO's centralized decisionmaking structure, did not want to finance what they viewed as essentially a South Korean commercial enterprise, and considered KEDO an American creation. In any case, the most immediate result was a shortfall in funding KEDO heavy fuel oil deliveries in 1995, a shortfall that has continued to grow up until the present day, threatening the organization's viability.

Building credibility with North Korea was critical for KEDO. Pyongyang was not averse to the idea of an international consortium providing the reactors, but it was not enthusiastic about the South playing a central role in the project. It wanted a strong US role, and it was concerned that once KEDO was created, US interest would rapidly diminish, forcing the North to deal directly with the South on implementation of an agreement with the United States. The United States took steps to reassure the North, particularly a political commitment in the form of a 1994 letter from President Clinton to DPRK leader Kim Jong Il that the United States would provide the reactors and heavy fuel oil if all else failed. But for the eight months following the signing of the Agreed Framework, the North tried to avoid first having to accept the Korean Standard Nuclear Plant, and then explicit recognition of the South's central role in the project. Its effort ultimately failed: in June 1995, the North reached a joint statement with the United States recognizing KEDO's role in providing the reactors. That same day, the KEDO Executive Board declared that it had decided to provide the North with two reactors of the Korean standard plant model and that it was authorizing discussions with the Korean Electric Power Company (KEPCO)—a South Korean firm—in connection with the prime contract. In August, KEDO commenced heavy fuel oil shipments to the North, and KEDO-DPRK talks over the next few months led to a reactor supply agreement, signed in

December 1995. KEDO has continued those efforts since then.

KEDO'S MANY FACES

KEDO performs four important functions: promoting nuclear nonproliferation norms, encouraging buffered South-North dialogue, promoting constructive engagement between Washington and Pyongyang, and coordinating US policies with those of Japan and South Korea.

Promoting Nuclear Nonproliferation Norms

Explicit in the 1994 Agreed Framework and in the KEDO reactor project is the promotion of nuclear nonproliferation norms on the peninsula. The 1994 Agreed Framework promotes both international norms, contained in the NPT, and regional norms, contained in the 1991 South-North Denuclearization Declaration. Under the terms of the Agreed Framework, the North has to become, once again, a full member of the NPT, and submit to international safeguards by the International Atomic Energy Agency. The KEDO reactors will not be completed until the IAEA conducts an examination of the North's nuclear history. The IAEA must ensure the North does not have nuclear weapons or unaccounted-for nuclear material, and that all its facilities are subjected to international safeguards. But the Agreed Framework also bans other facilities and related activities, such as reprocessing or uranium enrichment, that are not prohibited by international agreement. These activities are banned by the 1991 South-North Denuclearization Declaration, which essentially establishes a nuclear-weapon-free zone on the Korean peninsula but has never been implemented.

Under Article II of the 1995 KEDO-DPRK reactor supply contract, the schedule of nonproliferation-related "relevant steps" that the DPRK must perform to receive complete reactors should be integrated with the delivery schedule of the KEDO reactors. Relevant steps, which were first established in the Agreed Framework and are recorded in Annex 3 of the supply contract, include remaining a party to the NPT, implementing the international safeguards agreement at a specified point in the reactor project, and dismantling the DPRK's existing nuclear facilities, including its reprocessing plant. The supply contract includes other nonproliferation provisions specifically related to the two new reactors. Article XIII of the contract states that the DPRK "shall

apply IAEA safeguards to the reactors and nuclear material transferred pursuant to the Agreement, as well as any nuclear material used therein or produced through the use of such items, for the useful life of such reactors and nuclear material." It further states that "the DPRK shall at no time reprocess or increase the enrichment level of any nuclear material transferred pursuant to the Agreement, or any nuclear material used in or produced through the use of any reactor or nuclear material transferred in the LWR project."

In addition, under the terms of the Agreed Framework, North Korea will probably have to conclude a bilateral peaceful nuclear cooperation agreement with the United States in order to secure completion of the KEDO reactors. Such an agreement will be required because key nuclear components for these reactors, covered by international export controls, are likely to be produced by an American company, Combustion Engineering (the Korean standard reactor being supplied to the DPRK is based on an American reactor originally built by Combustion Engineering). A condition for such a bilateral agreement is that the recipient country's nuclear program is under international safeguards imposed by the IAEA.

Since the reactor project is in its earliest stage, none of these provisions has yet come into play. However, KEDO's activities have led to some limited progress in safeguarding the North's program. Under the Agreed Framework, the DPRK was required to resume ad hoc and routine inspections "under the DPRK's safeguards agreement with the IAEA with respect to facilities not subject to the freeze" once the reactor supply contract was signed. While these facilities—for example, medical research labs where small quantities of nuclear material are located—are not critical to the North Korean nuclear program, the United States specifically pushed for this provision as a sign of good faith on the part of the DPRK. Following completion of the supply agreement in December 1995, the DPRK allowed the IAEA to resume periodic inspections of these installations.

Encouraging Indirect South-North Dialogue

An important component of US policy on the peninsula has been to encourage dialogue between the DPRK and the Republic of Korea (ROK). Such contacts could play an important role in lessening tensions on the peninsula and in building peace and stability. Indeed, the United States insisted that the Agreed Framework in-

clude a reference to the need for South-North dialogue and implementation of the 1991 North-South Denuclearization Declaration, which provided for a bilateral inspection regime. North Korea, however, strongly resisted such contacts because of a deep dislike of the previous South Korean government under President Kim Young Sam and its behavior after the death of Kim Il Sung in 1994. That resistance has continued even with the new South Korean government's more accommodating approach to the North, the so-called "sunshine policy." The North's attitude reflects an underlying fear of too much contact with the more prosperous, democratic South.

The United States has viewed KEDO as a mechanism for "buffered" North-South contacts or, according to Choi Young Jin, KEDO's first South Korean deputy executive director, "a camouflaged inter-Korean dialogue."¹ Dialogue between the two is camouflaged because KEDO is an international organization led by the United States and made up of staff from other countries, including Japan and now the European Union, in addition to South Korea. Therefore, while many contacts have taken place involving South and North Koreans, most involve KEDO staff from other countries as well. As Ambassador Stephen Bosworth, then head of KEDO, stated in 1996, "given these are two countries, who at this point, are not able to talk to each other directly, KEDO is a mechanism through which they can begin to have something of a conversation."²

This conversation has taken place through a broad range of contacts since KEDO was established. South Korean staff at KEDO have been intimately involved in contacts with the North, through reactor site survey teams sent to North Korea, negotiations on implementing protocols to the reactor supply contract, preparation of the reactor site following groundbreaking in August 1997, and periodic KEDO-DPRK discussions on heavy fuel oil deliveries to the North. These contacts have taken place at all levels, from the most senior South Korean officials on KEDO's Executive Board to South Korean construction workers now at the Sinpo reactor site working on site preparation. Not only are many South Koreans learning more about the DPRK through these contacts, but a wide variety of North Koreans are having their first sustained exposure to South Koreans. These include government officials from the Ministry of Foreign Affairs, officials from technical agencies such as the General Bureau of Atomic Energy and the Korean Petroleum Trading Agency, scientists who have worked

on the North's nuclear energy program, medical doctors, telecommunications experts, and even representatives of postal services.

South-North contacts will expand and become more direct as the KEDO reactor project gains momentum. Over the next few years, the number of ROK workers at the Sinpo reactor site will grow to 2,000, and they will be working with some 5,000 DPRK employees. Contacts will also intensify between KEDO South Korean personnel, managers from the South Korean prime contractor (the Korean Electric Power Company), and DPRK officials as the pace of work at the site intensifies. The sheer scope of interactions will make it impossible for personnel from other countries, particularly Americans, to be present at all times. Indeed, this trend already became apparent during negotiations leading up to the KEDO reactor groundbreaking in August 1997. As the number of issues to deal with expanded, the scope of direct South-North discussions to resolve differences also expanded. On many occasions, Korean experts from both sides would meet without the presence of officials from other countries. These talks were conducted in a professional, businesslike fashion, and without them the reactor groundbreaking would not have been possible.

Modernization/Engagement of North Korea

Implicit in the 1994 Agreed Framework and its roadmap for normalization of relations between the United States and the DPRK is a US policy of constructive engagement. Rather than continue to contain and isolate the North—an approach that only encourages extremism—the United States opted for an approach that offered hope for resolving differences. Key objectives of constructive engagement are: (1) encouraging systematic change through modernization in the DPRK; and (2) increasing ties between the DPRK, its regional neighbors, and the international community, in the hope that such ties will help ease tensions and build peace on the Korean peninsula. In this context, KEDO's reactor project could form the basis for change in a key sector of the DPRK's economy; will require basic changes in DPRK domestic law; and could have a ripple effect throughout the entire economy. Moreover, as a result of this project, the North will have to strengthen its regional and international ties to ensure the completion and effective operation of the two nuclear reactors.

KEDO's multi-billion dollar reactor project is the first large-scale foreign investment and Western-style con-

struction project in the DPRK. As such, it can provide the DPRK with a model for future construction projects. This is true for all phases of work. For example, the body of documentation represented by the KEDO-DPRK reactor supply contract, the protocols for implementing that contract, and the agreements for implementing those protocols can serve as legal and practical models for arranging future large-scale industrial projects. Groups of North and South Korean experts effectively negotiated a mini-regulatory infrastructure in the DPRK before groundbreaking occurred. Documents cover everything from complex legal concepts such as liability, to communications between the site and the home office, to local requirements for driver's licenses for foreign construction crews.

Particularly striking will be the exposure of DPRK officials and craftsmen to Western know-how, since they will work closely with their South Korean and other counterparts on all phases of the construction project. For example, DPRK officials and workers will gain experience in:

- operating modern construction equipment;
- organizing and running a large-scale construction project using modern management techniques;
- using modern construction techniques including high quality welding, quality control, electronics troubleshooting, and engineering standards shared by the international nuclear power industry; and
- operating and maintaining two modern reactors, which will require extensive training in computer technology and other skills.

These skills and others are applicable not only in non-nuclear components of the energy sector, but in other parts of the economy, such as the chemical industry, as well as in any future large-scale construction projects. In short, over the course of this multi-year project, hundreds if not thousands of DPRK nationals will acquire skills from "foreigners" that, if the DPRK chooses, could be applied to help to promote modernization (and change) in the North. More difficult to gauge but potentially just as important will be the positive effect on a broad range of DPRK nationals who will begin to realize that, contrary to the North's official propaganda, the outside world, including South Korea, has much to offer the DPRK.

Aside from the construction of nuclear reactors, the DPRK will need to create, with the assistance of KEDO, a broader legal and regulatory framework for the project.

This will require the North to institute important changes in its current system, to make it more consistent with prevailing international standards, as well as to strengthen its ties with the outside world. First, the DPRK will have to write (with KEDO and other outside assistance) and enact domestic legislation dealing with the sensitive issue of liability for nuclear accidents. At the very least, that legislation will have to conform with the accepted international norm requiring the DPRK operator to accept absolute liability for any accidents. The North may also choose to sign relevant international nuclear conventions. Second, not only must KEDO train plant operators, there is also a good chance it will help the DPRK establish the necessary independent regulatory authority. That means creating additional domestic legislation and providing training for the regulatory officials and inspectors. All of these steps are required for the DPRK to secure liability insurance from the current worldwide network of nuclear insurance pools.

Other aspects of the reactor project will require the DPRK to strengthen its ties to the outside world and, hopefully, to become a more responsible member of the international community. Under the 1995 KEDO-DPRK reactor supply contract, KEDO is not required to help the North upgrade its electrical power grid to accommodate the new reactors, although the reactors cannot effectively operate without such an upgrade. Rather, it is obligated to help the North seek financing for this part of the reactor project—\$300 to \$700 million—which will require the DPRK to secure funding from international financial institutions or private sources. Neither will be easy, given continuing legal restrictions requiring the United States to oppose loans to the DPRK from international institutions and the North's poor credit standing. The North would seem to prefer securing such a loan from the Asian Development Bank, although it might also be possible to get private funding if it eventually decides to sell electricity generated by the reactors, for example to South Korea. In any case, international financing for the power grid will be another strand tying the DPRK to the outside world and exposing it to the practices of the international financial community.

Finally, as mentioned earlier, in order to conclude reactor construction successfully, North Korea will probably have to reach a bilateral peaceful nuclear cooperation agreement with the United States. Aside from the fact that this agreement will be one more mea-

sure to ensure the North observes international nonproliferation standards, it might also be an important component in normalizing the relationship between the United States and the North.

Harmonization of National Policies

From the very beginning, KEDO has served as an important mechanism to give South Korea and Japan a "seat at the table" in dealing with a critical regional security issue, implementation of the Agreed Framework. The United States, Japan, and South Korea consulted closely throughout the 1993-94 North Korean nuclear crisis and its resolution. But there was some dissatisfaction, particularly in South Korea, about being left out of the negotiations leading to the Agreed Framework and the June 1995 Kuala Lumpur US-North Korean statement on the reactor project. Participation by South Korea and Japan became essential once both had committed themselves to play important roles in the multi-billion dollar reactor project.

But KEDO's role goes beyond merely bringing together different countries to participate in its activities. Within the boundaries set by KEDO's mission, the organization serves as a crucible in which different national approaches are forged together to create one common view. As Ambassador Stephen Bosworth, KEDO's first executive director, stated in 1996:

My task is to take the overlap of interest which exists between the U.S., Japan, and South Korea and expand it. Each country has its own national agenda in the exercise and they are not identical. They are three countries dealing with a question in which they have a great common stake, but over which they have severe differences on how to deal with the DPRK.³

The task of "harmonization" of national policies takes place slowly through consensus-building rather than through majority voting procedures.

This fundamental characteristic of KEDO is best illustrated by the process of reaching protocols to implement the December 1995 reactor supply contract. Initially, the KEDO Secretariat produces a draft protocol, which includes contributions from various national experts on loan to the organization. The draft protocol is then thoroughly considered by the national bureaucracies of Executive Board member countries. The draft continues to undergo revisions until an agreed document is finalized for discussions with North Korea. KEDO

delegations to these negotiations typically include members of the Secretariat as well as national representatives from members of the Executive Board. As discussions with North Korea proceed and KEDO positions evolve, national representatives are very closely involved in the process and governments often must approve new negotiating positions. Finally, Board members approve any finished documents agreed to by KEDO and North Korea.

CHALLENGES FOR THE FUTURE

KEDO has accomplished a great deal since it was established in 1995. Still, the organization faces significant challenges if its success is to continue. Perhaps the greatest overarching challenge is the threat to the future of the Agreed Framework stemming from North Korea's own behavior, highlighted by recent revelations about its suspect nuclear facility and its long-range rocket test on August 31, 1998. What is the North up to? One theory is that Pyongyang never intended to improve relations with the United States or the outside world. It was just buying time. Under this scenario, the 1994 Agreed Framework was just a tactical move to lull the United States. The North extracted whatever economic and food assistance it could, while secretly building nuclear weapons and the missiles to deliver them. Recent revelations about the North's nuclear and missile programs are seen as clear proof that Pyongyang has been "pulling the wool over our eyes."

Others believe that when the North signed the 1994 agreement, it was sincerely interested in improving relations with the United States. But any prudent policymaker in Pyongyang, given almost five decades of hostility, is interested first and foremost in the survival of the North Korean regime, and would have to keep all options open until America's true intentions became clear. That would entail maintaining a nuclear weapons option and building bigger and better missiles that are not prohibited by the Agreed Framework. As Pyongyang became more disappointed with the lack of results from the 1994 agreement, and as hard-line military elements gained greater influence, its tactics have become tougher, and it may be placing greater emphasis on getting ready for the end of engagement.

No one knows for sure what are the North's intentions. However, it is clear that the situation is deteriorating and the United States, in cooperation with Japan and South Korea, must soon take steps to avert a potential

crisis. While a comprehensive prescription for US policy towards the North is beyond the scope of this essay, it is clear that such an approach should include an active diplomatic component that attempts to secure important objectives, such as halting the North's missile program and dealing with concerns about possible nuclear activities, while at the same time offering significant carrots in return. Such an approach, aside from dealing with issues that concern Washington, would also test Pyongyang's true intentions and force it to make some tough choices. Clearly, how such an initiative plays out will have important implications for four specific challenges that KEDO now faces: US domestic politics, inter-Korean relations, funding shortfalls, and safeguards implementation.

Bureaucratic and Domestic Politics

The inability of the United States and its trilateral partners to establish a strong domestic impetus behind KEDO has had a profound affect on the organization. After the conclusion of the Agreed Framework, attention to the dangers of a North Korean nuclear program dissipated. Although for a time the North Korean issue received steady attention and leadership from high-level officials, after 1994 it gradually sank back into national bureaucracies, where key issues often languished for months and bold decisions could not be taken. Moreover, without the proper attention by senior officials, obstacles in dealing with national legislatures became more difficult to surmount, particularly since the Agreed Framework has never been politically popular. Such difficulties may have been unavoidable, but they also pose serious problems since it is a politically, technically, and financially complex arrangement that requires strong action by national governments if it is to proceed properly.

One result of the unwillingness of bureaucracies to take action in a timely manner in the face of potential legislative opposition is KEDO's mounting heavy fuel oil debt. It became apparent in late 1996 that, if borrowing continued to fund oil shipments, KEDO's debt could mount dramatically over the next year to the point when no more deliveries could be funded. All available income would have to pay off the debt. Only bold action would have avoided this mounting problem. Instead, borrowing continued from oil suppliers, resulting in KEDO's current financial difficulties, an inability to make shipments, and a renewal of the North's nuclear threats.

The most recent potential problems facing KEDO are the result of mounting pressures by US domestic political opponents to the Agreed Framework. The Republican majority in Congress has always been skeptical about the agreement, which many view as just short of, if not outright, appeasement. Now, in the wake of recent revelations about the North's missile and nuclear programs, support for improving relations with Pyongyang is at an all-time low. Congress did ultimately approve the FY99 funding request for KEDO oil deliveries and administrative expenses, but it made it contingent on progress in stopping the North's missile program and in inspecting the suspect site. If those two conditions are not met, the president will either have to waive these critical certifications or acquiesce in the Agreed Framework's demise.

Congress and the Executive branch may be on an irreversible collision course, or just playing chicken. While the administration has been put in a difficult position, it is worth noting that Congress has always ultimately been restrained by its fear of doing anything that will increase tensions on the Korean peninsula. Moreover, while congressional rhetoric may be strong, it is likely that Congress would acquiesce in an overall US approach of seeking better relations with the North, provided progress could be secured in dealing with the North's missile program and the concerns about its nuclear program. Therefore, while the situation is difficult, it still may be possible to salvage the Agreed Framework and build some consensus around an approach that would sustain KEDO. Indeed, Congress has created a possible escape route through mandating the appointment of a senior official (former Secretary of Defense William Perry) to conduct a review of US policy.

Whether that review will ultimately succeed in restoring some consensus remains unclear. But if it does recommend continued adherence to the Agreed Framework as part of a policy of engagement, embedded in its recommendations should be adequate funding of KEDO's programs, particularly its oil deliveries, for which the United States bears special responsibility.

Regional Politics

The state of relations between North and South Korea will affect KEDO's ability to carry out its mission, since the ROK plays a central role in providing financing and technology for the reactor project. KEDO's short experience has demonstrated that it can only play an effective

tive role subject to the prevailing political situation on the peninsula. The organization has been most effective when tensions are manageable; it has been unable to function properly when tensions rise. For example, following the September 1996 incursion of a North Korean submarine and some of its crew into the South, tensions between the two Koreas increased dramatically. As the government of Kim Young Sam struggled to round up a handful of North Korean intruders and South Korean public opinion became inflamed, KEDO's activities with the North slowly came to a halt. Those activities resumed only when tensions dissipated in January 1997 with a North Korean "expression of regret" for the incident.

Inter-Korean political realities are unlikely to change quickly even if governments do. The new South Korean government under President Kim Dae Jung is trying to take a steadier approach to the North through its so-called "sunshine policy." While that policy requires government-to-government contacts only on the basis of reciprocity, it allows non-government contacts—for example, South Korean investment in the North or aid provided by South Korean non-governmental organizations—to proceed without any conditions. The sunshine policy has made some progress, most notably a deal between Hyundai and the North to open Mt. Kumgang to tourism. Moreover, private interactions between the North and South have dramatically increased, as has the number of South Korean visitors to the North.

But it is too soon to tell whether this approach will ultimately be successful. The North is still fearful of close contacts with the South. At the very least, it will move slowly in improving relations. At worst, it will try to reap economic benefits while keeping contact at a minimum. Domestic support in South Korea for the sunshine policy seems to be widespread, but also seems to have been undermined by continued North Korean incursions into the South. The current regime has been able to avoid suspending the ROK's work in KEDO, due to both its political management skills and the disarray of opposing political forces. However, further incursions, a deterioration in US-North Korean relations, or an erosion of domestic political support due to unrelated events, such as a further deterioration of the South Korean economic situation, may make it difficult to sustain the sunshine policy. On the other hand, positive developments—such as a broadening of economic interactions, government-to-government contacts, or an improving US-North Ko-

rean relationship—could help build greater positive momentum behind the current approach.

The August 1998 North Korean long-range rocket test over Japan illuminated the possible negative impact of a deteriorating DPRK-Japanese relationship on KEDO. Reacting to that test, the Japanese government suspended its participation in the KEDO reactor project. Japan is slated to play the second-most important role in the reactor project after South Korea. It will provide about \$1 billion in financing, and Japanese companies will participate in building key reactor components. Japan ended this suspension after a few months because of pressure from the United States and South Korea. But with Japan planning to go to its Diet in early 1999 to secure KEDO funding, any further North Korean missile tests or other actions which Tokyo views as a direct threat to its security could have a negative impact on its ability to participate in the reactor project.

Insufficient Funding

According to current estimates, KEDO's projects may cost from \$5 to 6 billion, about \$5 billion for the two reactors and \$600 million for heavy fuel oil deliveries, which will end once the first reactor is completed early in the next century. Anticipating the high cost of KEDO's projects, in 1994 the trilateral partners agreed to various understandings on sharing this financial burden. With regard to reactor costs, the Republic of Korea would assume 70 percent of the cost, Japan would make a significant contribution (which later turned out to be \$1 billion), and the United States would seek a significantly smaller "symbolic contribution" from the Congress. On heavy fuel oil, the United States would take the lead in making a financial contribution and in raising funds from other countries. Japan would contribute some funds to this project.

Unfortunately, these understandings are insufficient to finance KEDO's projects. Even if the trilateral partners meet their previous commitments on reactor funding, there could still be a funding shortfall of hundreds of millions of dollars based on the current cost estimate. There has been insufficient funding for heavy fuel oil from the very beginning of KEDO's activities. Much of the blame can be placed on the United States, which overestimated its ability to raise funds from other countries, underestimated the cost of heavy fuel oil shipments, and contributed too little of its own money to help solve

this problem. But Japan must also share some responsibility. While Japan contributed \$19 million in early 1996 to a collateral fund for oil shipments, it later told its KEDO partners that that money would be withdrawn and refused to provide any additional funds for heavy fuel oil. Consequently, KEDO oil shipments began to grind to a halt in early 1998 because all available and anticipated funds were needed to pay off a debt approaching \$50 million. While new US appropriations during the course of the year and for the next fiscal year have kept the program going, those funds are not sufficient to complete the 1999 shipments nor to pay off KEDO's debts.

The only solution to KEDO's funding problems is to secure more contributions from Executive Board members. KEDO's structure, which gives no decisionmaking role to countries other than Board members, makes it unlikely that non-Board members will provide more funds. Given the already substantial financial burden carried by the Republic of Korea and Japan, the role of the European Union (EU) could be critical in helping to finance the shortfall in reactor funding. The EU currently contributes some \$15 million annually to KEDO, to purchase heavy fuel oil. While this contribution is significant, the EU is capable of providing additional funding that, over the lifetime of the reactor project, could erase the anticipated shortfall. It may be possible to convince the EU to make such a contribution if European companies are given the opportunity for significant participation in the reactor project. KEDO's procurement guidelines already provide for that possibility—a pot of \$1 billion in contracts has been set aside for bidding by all KEDO members, including European companies. Under circumstances where those companies are able to secure large contracts, the EU might be more amenable to increasing its contributions to the organization.

While both Japan and the Republic of Korea would like the United States to contribute more funding to the reactor project, the focus of US efforts should continue to be KEDO's heavy fuel oil program. Since funding from other countries, with the exception of the EU, will remain small, there seems to be no alternative but for the United States to increase its contribution to KEDO dramatically, from the \$30 million appropriated in fiscal year 1998 to about \$50 to 60 million per year. That amount would both gradually wipe out the existing debt and help avoid going into the red with future shipments. This contribution, while smaller than Korean and Japa-

nese funding for the reactor program, is still quite substantial. Over the lifetime of the project, the United States could contribute as much as \$500 to 600 million to KEDO's oil program.

In addition, the United States still faces decisions about funding additional activities under the Agreed Framework. According to that agreement, North Korea's spent nuclear fuel, which contains enough plutonium to build a handful of nuclear weapons, must be shipped to another country for disposal in the future. The DPRK has also pledged to dismantle its existing nuclear facilities, and will probably seek outside assistance to complete this task. The cost of these two activities is unclear, but could easily reach tens if not hundreds of millions of dollars. It would seem appropriate for the United States to carry out these programs, in part because South Korea and Japan are already contributing substantial funds to the reactor project. Moreover, the United States has already spent tens of millions of dollars to safely store the spent fuel rods that will eventually be shipped out of the North. In short, it is quite possible that, over the lifetime of the Agreed Framework, the total US financial commitment could easily approach \$1 billion. Securing such funds from a skeptical Congress will not be easy, so strong leadership from the Executive branch will be necessary.

International Safeguards and the Reactor Project

Under the terms of the Agreed Framework, "when a significant portion of the LWR project is completed but before delivery of key nuclear components, the DPRK will come into full compliance with its safeguards agreement with the IAEA." The North also committed to take "all steps that may be deemed necessary by the IAEA to verify "the accuracy and completeness" of its initial report on all nuclear material in the North. Discrepancies found by the IAEA in that initial report, provided to the Agency in 1992, triggered the crisis that was resolved by the Agreed Framework. Although a pause in construction is not specifically mandated by the Agreed Framework, it is likely that, three to four years before the initial reactor is completed, the practical details of implementing the deal will bring about a pause in construction while the IAEA conducts a thorough examination to identify and place under international safeguards all nuclear material and relevant installations in the DPRK. According to the current timetable for construction of the KEDO reactors, that pause will occur sometime around 2002.

That pause could pose a severe challenge for KEDO, its reactor project, and implementation of the Agreed Framework. Based on past experience—in particular, the dismantling of South Africa’s nuclear weapons program in the early 1990s—an evaluation of the North’s nuclear past by the IAEA may take as long as two years even if the North fully cooperates. However, it is difficult to imagine the North providing as much cooperation as South Africa, which allowed IAEA inspectors to go “anywhere, anytime” to track down information on its nuclear past. Indeed, so far, the North has refused to cooperate with IAEA requests to take positive steps to preserve important historical information. Further, what will happen if the IAEA’s examination uncovers evidence that the North did not fully disclose information about its nuclear past in its initial 1992 declaration? Will the North be able to admit its “mistake,” disclose the location of any additional nuclear material, and place it under safeguards? Finally, even in the case of South Africa, questions such as how much enriched uranium it produced continued to linger even after the IAEA completed its examination. Presumably, such uncertainties will continue with regard to the North’s nuclear past even after the IAEA has done its job there as well.

A pause in reactor construction of a few years at a time when the work force has reached its peak and work is rapidly progressing would force KEDO to halt construction at the site, withdraw work crews from the North, and slow down or stop work on building reactor equipment. While it may be possible to devise a plan to work around some of these difficulties, the bottom line is that such a pause may cost KEDO millions of additional dollars to complete the project. Moreover, it is worth noting that not only KEDO’s reactor project could be placed in jeopardy. The shipment abroad of the spent fuel currently in the North will begin only when the major nuclear components for the first reactor are delivered. Final dismantlement of North Korea’s nuclear program will begin only when the first nuclear reactor is completed. Difficulties in completing that reactor will result in delaying these vital steps.

Weathering what could be an extremely difficult situation will require careful preparation to minimize the additional costs and disruption as much as possible. To a large degree, minimizing disruption and maximizing cooperation will depend on the prevailing political situation on the peninsula. The more positive the relationships between North Korea, the United States, and South

Korea, the more likely that this process of examining the nuclear past will be cooperative and not too disruptive. However, if political relationships have not improved, this process may be more adversarial than cooperative. Aside from making it extremely difficult to complete this process even within a few years, it may also be hard to accept any lingering doubts that are almost certain to remain after the IAEA has done its job. Moreover, an adversarial process could trigger threats and counterthreats that might undermine continuation of the reactor project.

A number of specific steps can be taken to help prepare for the impending IAEA examination. First, for the IAEA to conduct a thorough, expeditious examination of the North when the time comes, the United States must ensure that Pyongyang preserves important historical information. Preservation of such information is not explicitly mentioned in the Agreed Framework, but it is implicit in the agreement’s requirement to eventually conduct a historical examination. Since the North has insisted, with some justification, on an implicit linkage between reactor construction and preservation of information, the United States should seek to make that linkage explicit. Such an approach would require phased preservation of historical information that could be keyed to different milestones in the KEDO reactor project. When a specific milestone is reached, the North would take the necessary steps to preserve some specific information. Such an arrangement might need to be codified in negotiations between KEDO and the North on the reactor delivery schedule, or in a separate arrangement between the United States and Pyongyang.

Second, serious consideration should be given to acceleration of the KEDO reactor project. The project is already a few years behind meeting the target date of 2003 established in the Agreed Framework, and that has broader implications for establishing North Korea’s non-nuclear weapons status. The United States, in cooperation with other KEDO Executive Board members, should seriously consider whether it is possible to speed up the project. Such a step would serve US interests, since it would speed up preservation of historical information as well as denuclearization and could be used as a potential bargaining chip in talks with the North. It would also be attractive to Pyongyang, which is increasingly concerned with the slow pace of the project. Given the shorter timetables for similar reactor projects in other countries, and even accounting for the difficulties of

doing business in the North, it may be possible to cut a year or more off the current schedule.

Third, the United States should begin negotiation of a peaceful nuclear cooperation agreement with Pyongyang as soon as possible. Such an agreement will be necessary for KEDO to complete the reactor project, since the major components will be either based on US technology provided to the South Koreans or built in the United States. It may have some political symbolism as the first legally-binding agreement between the United States and North Korea. Such an agreement would also be another avenue for reinforcing the requirement that the North allow the IAEA to conduct a thorough examination of its nuclear efforts, since the agreement cannot enter into force until the Agency gives the Pyongyang a clean bill of health.

Finally, the United States should consider moving towards a more cooperative overall relationship with the North on nuclear issues. Such contacts should, of course, be limited initially, but they could widen if relations improve. One possible vehicle for cooperation would be regular consultations between the US Department of Energy and the DPRK's General Bureau of Atomic Energy. Initially, these consultations could focus on maintaining the nuclear spent fuel jointly stored in the DPRK, but they might broaden to include US concerns about preserving historical information, requirements for a peaceful nuclear cooperation agreement, environmental cleanup of the Yongbyon nuclear site, and training DPRK inspectors charged with implementing arms limitation agreements.

CONCLUSION

KEDO is vital to US efforts to promote peace and stability on the Korean peninsula and to stem the global spread of nuclear weapons. Since it was established in 1995 as a result of the United States-North Korea Agreed Framework, aside from helping implement key components of that agreement, KEDO has served four important functions. First, it has helped promote nuclear nonproliferation norms in North Korea through provisions embedded in both the Agreed Framework and KEDO's nuclear reactor project. Second, KEDO has proven to be an important, albeit limited, channel for buffered North-South contacts as the result of the need for cooperation in building the two multi-billion dollar reactors. Third, the KEDO reactor project serves as a potential catalyst for economic modernization in North

Korea, as well as an important component in encouraging stronger ties between Pyongyang and the international community. Finally, KEDO serves as an important alliance management tool in which US, Japanese, South Korean, and European approaches to an important regional security issue are forged together.

Nevertheless, KEDO's future is threatened by the downturn in US-North Korean relations that has called into question implementation of the Agreed Framework. Reversing this downward spiral is essential, but even if that happens, the organization will have to cope with other problems. Domestic support for KEDO, particularly in the United States, has never been strong. That may change if a policy review by former Secretary of Defense William Perry comes up with an approach that addresses congressional concerns and leads to adequate US funding of KEDO projects. KEDO has also been buffeted by regional politics, particularly the ups and downs of North-South relations. President Kim's "sunshine policy" offers the best hope in years of a more stable relationship, but much will depend on future North Korean behavior and other developments that may strengthen or weaken President Kim's ability to sustain this approach. In addition, KEDO's projects are not fully funded. Therefore, its Executive Board members, particularly the European Union and the United States, should provide the necessary funding for implementing its reactor program and oil deliveries. Finally, KEDO is approaching a critical and potentially stressful juncture in its efforts in 2002, when the IAEA will have to declare the North free of nuclear weapons before the reactor project can proceed. The United States, in cooperation with KEDO and North Korea, should begin taking steps now to prepare for that examination. Even if the Korean Peninsula Energy Development Organization has not solved all the problems posed by North Korea's nuclear and missile activities, it has provided substantial benefits that merit a concerted effort to preserve and strengthen the KEDO arrangement.

1. Choi Young-Jin, "KEDO and the Korean Peninsula," paper prepared for meeting on the Future of the Agreed Framework, American Enterprise Institute, March 1998.

2. Remarks by Amb. Stephen Bosworth, KEDO Executive Director, before the Henry L. Stimson Center Nuclear Roundtable, May 31, 1996.

3. *Ibid.*