Nobumasa Akiyama and Kenta Horio

Can Japan Remain Committed to Nonproliferation?

The nuclear nonproliferation regime is a great example of the success of post-war liberal internationalism: despite a spread of potential technological capabilities, only nine countries possess nuclear weapons. The nonproliferation regime has somewhat facilitated international cooperation on the peaceful use of nuclear energy by reducing threats and the risk of proliferation. It has also contributed to the security of states as well as regions by preventing the possession of nuclear weapons of neighboring countries. Under such a relatively stable environment, the post-war liberal international order has assisted the emergence of new powers, such as Japan and Germany, but also provided ground for the rise of a potential strategic rivalry, seen with China.

But now this liberal international order, in particular the nuclear order, is under challenge. While the norm of nonproliferation and the legitimacy of the nuclear Non-Proliferation Treaty (NPT) have each gained universal support, adherence to the Treaty is not automatic. This simple fact becomes more complicated as the nonproliferation regime faces rather prolonged, unresolved North Korean and Iranian proliferation challenges. If these proliferation problems remain unsolved, and states like Iran and North Korea enjoy the status of being nuclear-armed states, other states might be disincentivized from adhering to the nonproliferation regime.

Furthermore, the United States—a major partner whose extended nuclear deterrence and vast technological, industrial, and financial superiority have helped shape the international nonproliferation regime—is facing "strategic

Nobumasa Akiyama is a professor of International Politics at the School of International and Public Policy, Hitotsubashi University. Kenta Horio is a Ph.D. candidate at the Department of Nuclear Engineering and Management, the University of Tokyo.

The Washington Quarterly • 36:2 pp. 151–165
http://dx.doi.org/10.1080/0163660X.2013.791090

insolvency," what author Michael Mazarr describes as a crisis in managing the gap between the U.S strategic objectives and its capability to manage international systems.[1] Since emerging powers such as China, India, and Brazil are rising, the loss of military, economic, and technological superiority would affect psychological superiority, which might discourage other states from endorsing or associating themselves with U.S.-led global institutions like the nuclear nonproliferation regime.

U.S. President Barack Obama's April 2009 speech in Prague, known now as the Prague Agenda, is largely considered a pledge for an ideal world free of nuclear weapons. The President, while acknowledging a U.S. moral obligation to lead the world in realizing this goal, also emphasized the need for robust nuclear security and nonproliferation, which would require more stringent enforcement. He said, "Rules must be binding. Violations must be punished." At the same time, the President expressed his support for the peaceful development of nuclear energy: "no approach will succeed if it's based on the denial of rights [of peaceful use of nuclear energy] to nations that play by the rules." One suggestion Obama made was the creation of a multilateral nuclear fuel bank. It would ensure access to nuclear power without increasing proliferation risks, while accepting that it is virtually impossible to impose mandatory participation in such a mechanism.[2]

Attempts to revitalize the Prague Agenda face two fundamental questions.

If President Obama would like to revitalize the Prague Agenda, he faces two fundamental questions. The first concerns policy instruments and frameworks—how can emerging nuclear-energy states be steered away from nuclear weapons technologies, particularly sensitive enrichment and reprocessing, while also ensuring their right to the peaceful use of nuclear energy? The second is about enforcing the resultant policies and frameworks: who should take this responsibility and bear the costs of policy implementation? Under U.S. predominance, the answer to this second question was obvious, but ongoing structural changes in the international nuclear order and growing fears of U.S. strategic insolvency makes it more relevant.

This question is also relevant to Japan. Japan maintains a special position in the current international nuclear order as the only non-nuclear weapons state (NNWS) that possesses full-scale fuel cycle technology, as the only victim of the deliberate use of nuclear weapons on citizens, and as a U.S. ally under its extended deterrence. Overall, Japan has been the greatest beneficiary of the current international nuclear order and a major status quo power which finds it

critical to protect and to strengthen the existing nuclear nonproliferation regime.

The disastrous March 2011 accident of the Fukushima Daiichi Nuclear Power Station further pushed Japan to reconsider not only its nuclear safety practices and regulatory schemes, but how to address international nuclear security and nonproliferation challenges. Failure to address these issues could cause a nuclear catastrophe. Facing U.S. strategic insolvency in the nuclear nonproliferation regime, Tokyo may now be in a position to take a much greater leadership role in revitalizing and enforcing contemporary nonproliferation.

Can Japan provide a role model for other non-nuclear weapons states?

Norms and Power: What Shape the Regime?

Some argue that today's post-unipolar world can be governed through network-centric cooperation among governments and non-governmental entities. Princeton professor G. John Ikenberry contends that while U.S. power has relatively declined throughout the postwar period, the governance of international order has been transforming from a hegemonic, hierarchical order to a more liberal, flat international order.[3] Under this new order, maintaining and protecting global public goods, such as compliance and enforcement mechanisms of the nonproliferation regime, will become a joint project including not only existing major players such as the United States, Europe, and Japan, but also emerging countries such as China and India. Having a single superpower, such as the United States, providing public goods is no longer sustainable.

The current compliance mechanism of the nuclear nonproliferation regime could be understood as a three-layered structure. The first and foundational layer consists of the NPT and the safeguards of the International Atomic Energy Agency (IAEA). The NPT stipulates basic norms and rules, and IAEA safeguards provide the basic and minimum guarantee of compliance by states. However, as seen in cases of Iran's and North Korea's nuclear programs, the IAEA cannot enforce these measures sufficiently to assuage security fears of member states. This gradually erodes the credibility of the treaty and the agency.

That is why this formal part of the regime needs support from the second and third layers: the second layer consists of policies implemented through bilateral or multilateral frameworks among like-minded countries such as the Nuclear Suppliers Group (NSG), the Proliferation Security Initiative (PSI), and UN Security Council Resolution 1540 (UNSCR1540). These policy frameworks

regulate and prevent illicit trade or transfer of sensitive materials and technology, either by state or non-state actors.

The third layer involves political and economic incentives to induce compliance. This could provide more effective incentives for compliance and disincentives for dissociation from the regime. For example, extended deterrence of the United States allows allied states to focus on civilian use of nuclear energy by reducing threats of nuclear attacks from potential nuclear-armed adversaries. In cases of noncompliance, nuclear states providing technology and materials may terminate their cooperation and withdraw from recipient states. In another scenario, though arguable, the case of Iraq demonstrated that the pursuit of WMD could trigger action by other states to replace the government concerned.

Historically, the United States has been an architect of the international nuclear order and has played a leading role in the process of building and maintaining it by providing new policy ideas and launching initiatives. Recently, its emphasis has been how to strengthen enforcement and compliance. U.S. policy ideas include Proliferation Security Initiatives (PSI), Nuclear Security Summits, a G8 Global Partnership, and a multilateral fuel bank. The so-called 123 Agreement, taken from Section 123 of the U.S. Atomic Energy Act of 1954, is the most important tool: it establishes the need for a cooperative agreement between the United States and other nations as a prerequisite for any nuclear deals.

Embedded within the nuclear nonproliferation regime is a great dilemma.

This measure could have been effective if the United States had been exclusively capable of providing incentives and enforcing consequences for non-compliance. However, in 123 Agreement negotiations with various countries, Washington faces resistance from potential partners who see tension between the inalienable right to pursue (peaceful) nuclear energy and the norm of nonproliferation. Even with close friends such as Saudi Arabia and South Korea, agreements do not come easy. Since the U.S. proposal with Saudi Arabia, for example, posed too many restrictions on the type of nuclear development allowed, Riyadh seeks an India-type, country-specific agreement—such an agreement allows India to reprocess U.S.-originated spent nuclear fuel, rather than the standard agreement that the United States has, for example, with the UAE. Indeed, in its process of consolidation, the nuclear nonproliferation regime has embedded a great dilemma: how can the peaceful use of nuclear energy be promoted while strengthening nonproliferation and nuclear security?

Another nonproliferation initiative the United States has advocated is a multilateral fuel cycle control mechanism. This arrangement provides an incentive (the assurance of fuel supply) in exchange for a state voluntarily relinquishing national nuclear fuel cycle technology.[4] By assuring the nuclear fuel supply in case fuel delivery is interrupted, this mechanism tries to provide states with an incentive to give up the national fuel cycle. Some Non-Aligned Movement (NAM) countries, however, express grave concerns with this concept as it could potentially close the chance of acquiring nuclear fuel cycles in the future and allow the United States to interfere with a state's domestic energy policy.

The relative decline of U.S. influence, however, has consequences for its ability to form new policy initiatives such as these and for shaping the behavior of individual countries. If the United States cannot maintain sufficient power to leverage other countries' behavior toward compliance, enforcing rules, and providing incentives, both on security and economic fronts, it would lose its ability to shape the international order and nonproliferation could suffer.

Structural Changes in Nuclear Markets

The power center of the world's nuclear energy politics is shifting in three ways. First, new demand is coming from emerging countries, rather than conventional powers. Second, the demand side may gain more leverage vis-à-vis the supply side. Third, emerging countries are also rising as new supplier countries.

The power center of the world's nuclear energy politics are shifting in three ways.

After the Fukushima accident in March 2011, European countries such as Germany, Italy, and Switzerland chose to give up nuclear energy. Some developing countries that had been planning to introduce nuclear energy are also conducting reviews of their nuclear energy policy. But the accident did not dramatically impact global demand for nuclear energy. Many countries in Asia, Africa, and the Middle East still intend to introduce nuclear energy programs. One IAEA report estimates that nuclear electricity-generating capacity in the Middle East and South Asia will increase by ten times from 2010 to 2030. In the same period, Far East capacity will increase by three times.[5] More specifically, the World Nuclear Association (WNA) projects that China by 2030 will increase its capacity of nuclear power to anywhere from 40 to 100 GW (currently China has 13 GW capacity and operates anywhere from 35 to 100 reactors). India will increase to anywhere from 10 to 25 GW (currently operating at 4 GW with anywhere from 20 to 70 reactors).[6] Further nuclear power capacity is also anticipated in Russia

and South Korea who have already generated nuclear power on a large scale and have won a number of contracts to supply nuclear reactors, as seen in the Russia–Vietnam or Korea–UAE deals. The UAE and Vietnam, along with other emerging countries, may start generating nuclear power themselves within the next ten years.

These trends raise a few questions. First, can the status quo powers maintain sufficient leverage to get these emerging powers to accept stringent and sometimes costly nonproliferation rules and norms? Second, if the relative decline of status quo powers is inevitable, are these emerging countries willing to cooperate in maintaining the nonproliferation order by sharing the burden? Third, if answers to these first questions are negative, what happens to the international nonproliferation regime?

More than half a century ago, in his power transition theory, A.F.K. Organski suggested that unless the United States, a dominant status quo power, showed flexibility in allowing China, a challenger state, to play "a dominant role at least in the Far East," a war would occur.[7] Although a major armed conflict is not likely between the United States and China, rising tensions between the two superpowers in various dimensions might limit the U.S. ability to shape international relations. How to incorporate the rise of China into global governance is the most critical question the contemporary world faces now.

China and other emerging countries have three faces. First, they are the greatest beneficiaries of the existing liberal international order. Second, they (particularly China) could be seen as potential contenders to challenge U.S. predominance in that order as they develop military, economic, and technological capabilities. But the collapse of U.S. predominance, if it brings international disorder, would do great damage to their further development, which relies on a stable international political and economic environment. Third, emerging countries maintain the manifesto of the developing country, emphasizing a strong orientation toward a non-interference principle. For example, contrary to the image of a rising superpower, China is preoccupied with meeting domestic political, social, and economic demands which sometimes distort China's relationship with other countries. To what extent can emerging countries contribute to global governance in a more robust nonproliferation regime then?

In China's case, its mixed record of compliance with export control norms makes this answer difficult. In July 2009, two months after the UN Security Council upgraded its sanctions against North Korea, 70 kilograms of vanadium was found in a China–North Korea border city, according to an official of the Dalian Customs Office.[8] Vanadium is used for strengthening steel, which could be used to produce missiles or possibly nuclear reactors. One could interpret this event to mean that Chinese proliferation is continuing. After all, China has

provided reactors to Pakistan, is planning to provide more, and has agreed to provide a research reactor to the Sudan by 2020.[9] On the other hand, the disclosure of the incident by the Chinese authority could indicate China's willingness to abide by the existing international export control mechanism.

In another proliferation case, however, China was reluctant to demonstrate accountability. A UN special committee report mentioned an allegation that a Chinese company, allegedly associated with one of the People's Liberation Army branches, sold four 21-meter vehicles—capable of transporting and launching ballistic missiles—to North Korea.[10] China (along with Russia) has also sought to water down UN sanctions against North Korea and Iran, and has maintained economic ties with those countries.

> The world cannot rely on constant commitment by China to strengthen nonproliferation.

Such ambivalence in nonproliferation performance indicates that the world cannot rely on constant commitment by China to strengthen the nonproliferation mechanism. At the same time, its participation in the mechanism is almost the prerequisite for success in a strong nonproliferation regime.

Rising democracies like India have also been ambivalent about fully supporting U.S. leadership to advance these objectives, particularly when it requires coercive diplomacy, economic sanctions, and the use of force. Although strategic partnership with India has become a common, popular strategy among national security experts, as far as nonproliferation issues are concerned, India did not fully endorse U.S. policy toward Iran. It kept importing oil from Iran and exporting refined gasoline, despite the U.S. request to stop, which has undermined economic sanction efforts.[11]

In May 2010, Turkey and Brazil tried to take their own initiative to solve Iran's nuclear crisis. These countries have actively developed their diplomatic strategy to avoid relying on a single power, while maintaining omnidirectional economic and strategic ties. Analyst Ian Bremmer has characterized them as "pivot states" based on their diplomatic strategic behavior, which could even determine the fate of international system.[12]

Turkey and Brazil made a deal with Iran, swapping 1200 kilograms of Iran's low-enriched uranium with 120 kilograms of 20-percent-enriched uranium in exchange for a research reactor. The deal was not approved by the EU3 + 3 and did not yield a solution. However, it did underscore the reality that the conventional powers (like the EU3 + 3) have thus far been unable to broker a solution. If an alternative framework, such as a deal among Turkey, Brazil, and

Rising democracies like India have also been ambivalent.

Iran, could prove more effective, it would be a blow to the existing global institutions led by the United States and other conventional powers.

With the rise of emerging states as major players in international nuclear politics, exercising influence through bilateral cooperation with target states may also lose its leverage to induce those states' behavior. Depending on the conditions for cooperative nuclear deals, stakeholders may have other, better options than to choose the United States as a partner. For example, Russia is currently the largest supplier in the international nuclear fuel market. Moscow has enacted legislation that allows it to take back spent fuel and then provide it to other countries as a "resource." Other countries can then reprocess this spent fuel to extract plutonium. Compared with the United States, whose domestic law prohibits it to accept spent fuel from other countries, Russia can be considered superior to the United States in possessing more incentives and wider policy options in the international nuclear business. Russia also is flexible in packaging nuclear deals with other incentives. For example, Russia's 2010 deal with Vietnam was reportedly accompanied with military sales, including submarines.[13] If other countries like China and India enter into the nuclear business and offer similar, looser conditions for nuclear nonproliferation, safety, and security, the United States and Japan (who also have stricter conditions) might have further difficulty in winning contracts.

A fundamental question for the medium term is to what extent emerging countries such as China and India will compromise their national interests, as well as their own value system, for the sake of reinforcing nonproliferation norms. It is uncertain if they are willing to spare these national costs, as well as their orientation to prioritize their national interests under the Westphalian view of the world, in order to provide public goods and maintain the international nonproliferation order.

Structural trends in economics, politics, and military affairs are undermining the degree of American predominance and the sustainability of the existing paradigm of U.S. influence. In order to maintain effective control of proliferation risks, the United States and like-minded countries have to design and introduce a new incentive and disincentive mechanism, though which the United States can manage its potential decline in the market while preserving its influence in the current nonproliferation regime. Despite the challenges described above, such a new nonproliferation mechanism needs to work with a wider range of states including allies, partners, and even not-so-like-minded states.

Japan as an Ambivalent Player

How do such structural changes in the nuclear nonproliferation regime and international nuclear market affect Japan's role in them? When the Prague Agenda was presented, Japan enthusiastically welcomed it. The speech coincided with the birth of a new government in the Democratic Party of Japan, in power for the first time since 1955 (except for a brief period in 1993). In fact, the pursuit of a nuclear-free world has become a major foreign policy agenda of the new government, partly because nuclear disarmament was Foreign Minister Katsuya Okada's lifetime agenda.

The overall relationship between Japan and the United States in the last four years, however, has not been easy. Outstanding issues caused drift, like the relocation of a U.S. Marine base in Futenma, Okinawa, and the Trans-Pacific Partnership (TPP). But as far as nuclear issues are concerned, mutual understanding has deepened, including maintaining extended deterrence even while the role of nuclear weapons has diminished in U.S. national security strategy.[14] It has also raised the level of coordination in nuclear nonproliferation as well as research and development in nuclear security technology.

In its bilateral nuclear cooperation agreements, Japan emphasizes the Additional Protocol to the IAEA Comprehensive Safeguards Agreement as a precondition for concluding agreements. The Additional Protocol strengthens and expands IAEA safeguards for verifying that non-nuclear weapons states adhere to the NPT and pursue only peaceful nuclear technology. With the exception of a treaty with India and a disagreement with Brazil, all Japanese bilateral agreements resulted in a pledge by partners to ratify the Additional Protocol. (Both India and Brazil refuse Japan's request for ratification of the Additional Protocol, as India seeks a special status similar to the U.S.–India agreement, and Brazil publicly declared not to endorse the Additional Protocol because it insists that safeguards in the Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) should be recognized as AP-equivalent.) In multilateral forums, Japan has also strongly advocated the idea of universalization of the Additional Protocol and making the verification standard. This harmonizes closely with the U.S. 123 Agreement.

As mentioned above, however, some states strongly resist the Additional Protocol, 123 Agreements, or anything that could hinder future nuclear development. In such cases, the inability of Japan and the United States to maintain their technological advantage and a substantial share in the nuclear reactor market will limit their ability to shape international norms and rules. Therefore, a principle of Japan's nuclear diplomacy to support the Prague Agenda is to standardize the international nuclear business and nonproliferation export criteria.

The United States and Japan have had some differences, like economic sanctions against Iran. Since approximately 10 percent of Japanese imported oil came from Iran, Tokyo was cautious in enforcing a strong oil embargo. But Japan came around quickly, and soon joined the United States and other Western countries in imposing these sanctions.[15]

Other differences concern plutonium stockpiles and nuclear fuel cycle policy. The gap between the two countries over these issues first became clear in the late 1970s when the United States under the Carter administration began imposing roadblocks to Japanese (and European) fuel cycle policies by pressing Japan to stop the Tokai Reprocessing Plant. Although the United States hoped to establish an international consensus that fuel cycles should not use so-called "sensitive" technologies, facilities, and materials, a strong international coalition (including Japan) countered this. Japan, who experienced the first oil crisis, sought more autonomy in energy policy and believed in the inalienable rights of the peaceful use of nuclear energy; restricting fuel cycle technology was unacceptable. Eventually, the International Fuel Cycle Evaluation (INFCE) panel decided that any country could have access to the technology as long as they complied with nonproliferation rules.

The 1988 renewal of the U.S.–Japan Nuclear Cooperation Agreement of 1968 demonstrated a consolidated U.S. attitude in favor of Japan's fuel cycle program. The Japanese government successfully negotiated with the U.S. government to receive "programmatic consent" (general/comprehensive support) for utilization of fissile materials and nuclear technology transferred from the United States, without case-by-case approval for each operation.[16] It was a consolidation of Japan's special position in the nuclear nonproliferation regime as the only non-nuclear weapons state that had a full-scale nuclear fuel cycle program.

With this rather unusual history of bilateral negotiation, the question for the last generation has been whether Japan could provide a role model for other non-nuclear weapons states to comply with the nonproliferation regime (if Japan's special status is considered as a reward for full compliance with nonproliferation norms and rules), or whether it was an exception to it, due to its uniqueness. This question has become much more relevant with the "nuclear renaissance" of the mid-2000s, and become even more complicated after the Fukushima nuclear accident.

While claiming that Japan's strong commitment to nuclear nonproliferation (such as strict compliance with IAEA safeguards) was an endorsement for possession of nuclear fuel cycle technology, Japan itself has been advocating a "criteria-based approach" which accepts the right of every country to pursue nuclear activities, including fuel cycles, as long as they comply with peaceful-use requirements. This shows that Japan wants to promote itself as a model.

Indeed, Japan makes an ideal model: it emerged from the enmity of World War II, made a successful recovery and achieved remarkable economic growth, and has negotiated extended deterrence guarantees with the United States. Although Japan has the technological potential to fabricate nuclear weapons, it determined not to develop them and successive governments have clearly stated no aspirations to be a nuclear-armed state in its three non-nuclear principles since 1968.[17] Furthermore, Japan has been a dedicated member of various export control regimes such as the Missile Technology Control Regime, NSG, and PSI.[18]

Japan's contribution to the legitimacy of the existing regime is not small. But after the Fukushima nuclear accident, the viability of a "Japan model" is also under challenge. Certainly, Japan's plutonium stockpile is a great concern as the shrinkage of the global nuclear energy sector, combined with questionable economic rationale, overshadows the *raison d'etre* of the fuel cycle program utilizing plutonium recovered from spent nuclear fuel as fuel for a light-water reactor. It would also pose a risk of nuclear terrorism and potential proliferation, theoretically. Ironically, Japan needs to cooperate with the United States and the world in finding a way to overcome the deadlock between the inalienable right to nuclear technology and the effectiveness of the nonproliferation regime, which Japan believes it has overcome by strictly complying with the IAEA safeguards.

Questions also arise about the type of "Japan model." Tokyo could hypothetically offer to be a new type of nonproliferation model by simply foregoing its fuel cycle program, but there is no guarantee that countries like Iran would give up its own enrichment *because of* Japan's decision. In fact, it is highly unlikely others would follow. States make decisions based on their own cost-benefit calculations and domestic political dynamics.

For decades, the handling of spent fuel has been a common global problem, particularly in Asia. Instead of simply abandoning its program (and arguably any potential leadership role) and dissociating itself from the conundrum of maintaining safe storage and the disposition of plutonium stockpiles, Japan should commit itself to globally discussing and implementing solutions for this challenge, playing a responsible role in the global society. The solution for this problem in the short term will be reduced to identifying and deciding the location of final disposal sites and securing interim storage capacity in each nuclear power country. In the medium- and long-term, it may require more innovative international policy frameworks and the development of new technology at regional and global levels, which would require much broader and closer international cooperation under a shared vision. Whatever the choice of its domestic nuclear energy policy, Japan must remain committed to playing a leading international role to insure nonproliferation and nuclear security.

Toward a More Globalized Japan

To pursue both more stringent nuclear nonproliferation and non-discriminatory access to the peaceful use of nuclear energy—without undermining each of these—is one of the toughest challenges in the Prague Agenda. Since it is unrealistic to change the existing norm structure by legally prohibiting access to sensitive fuel cycle technology, nations must instead seek to ensure and strengthen the credibility of enforcement, in case of violations, and enhance the attractiveness of incentives for compliance. By demonstrating its ability to maintain a nuclear fuel cycle, yet comply with these evolving safeguards and remain a nonnuclear weapons state, Japan can be uniquely positioned to be a role model for emerging powers.

Structural changes in the international nuclear order are taking place. The United States and the U.S-led nuclear nonproliferation regime face challenges in the widening gap between their strategic objectives and the credibility to realize such objectives in the face of emerging states such as China and India as major players in international nuclear energy markets, and Brazil and Turkey, who along with China and India behave as "pivotal states." Relationships with these states are especially critical since they take ambivalent attitudes toward the values and norms which the United States promotes for nuclear nonproliferation.

Faced with the great uncertainty of the extent to which these countries share the existing regime's values and its nonproliferation priority, Japan needs to be aware of its responsibility for the international community. First, Japan, having experienced complex nuclear disasters, must share its findings and lessons learned. This would include standards of decommissioning, decontamination standards, and community health care.

Second, Japanese nuclear policy needs to consider its plutonium balance. So far, Japan has accumulated a substantial amount of separated plutonium both at home and abroad (in the United Kingdom and France).[19] Indeed, there is mounting pressure from both domestic and global civil society against resuming the operation of fuel cycle facilities such as the *Rokkasho* reprocessing plant and *Monju*, a proto-type fast breeder reactor. Global demand is also increasing for Japan to be more accountable for either the use or disposal of the stockpile of separated plutonium, as Japan's plutonium utilization program (use of mixed oxide fuel, usually containing plutonium, in existing light-water reactors) was halted after Fukushima, and the revision of the nuclear fuel cycle program has not been completed yet. One idea to meet these demands is to stop the operation of *Rokkasho* and *Monju*, and put already separated plutonium in dry cask storage.[20] To help achieve a nuclear risk-free world, Japan should cooperate with the United Kingdom, France, and other countries with similar concerns over the

disposition of plutonium, in particular in Asia. Discussing and examining concrete alternatives such as the use of mixed oxide fuels, long-term storage, R&D, and utilizing fast reactors could offer a starting point.

Third, under such constraints and dilemmas (highlighted by the Fukushima accident), the solution of a multilateral fuel cycle control mechanism—such as a multilateral R&D program on nuclear fuel cycle technologies or multilateral ownership and management of nuclear fuel cycle services, while enhancing mutual transparency among regional states—is becoming more realistic for Japan than previously. Unilateral approaches cannot fully secure international accountability or find a realistic solution. Putting this problem in a global context and increasing the involvement of international elements in Japan's internal affairs should offer the right direction for a solution.

There is a growing expectation in the nuclear policy community that a multilateral approach to fuel cycle control could save *Rokkasho* and *Monju* from being scrapped. Certainly, if the *Rokkasho* reprocessing facility could function as a regional center for spent fuel management, in which regional nuclear energy countries would be willing to participate in exchange for foregoing their national fuel cycle programs, it would greatly enhance a primary goal of nonproliferation. But if this kind of politically-driven justification could become a major factor to decide the destiny of Japan's fuel cycle program, it would result in disastrous consequences both on domestic nuclear politics as well as in the international credibility of Japan's nonproliferation posture. Without accountability and transparency in the use or disposal of plutonium stockpile, the Japanese fuel cycle program may lose domestic and international legitimacy.

If Japan were simply to forego its nuclear fuel cycle program, it would not help strengthen Japan's role in strengthening the international nuclear nonproliferation order along the line of the Prague Agenda. Japan's nuclear energy and nonproliferation policy, as well as its technological and industrial capability, have already been embedded into the international nuclear order. Japan's withdrawal might create a vacuum in the order that someone else might fill. Furthermore, if the United States loses Japan's complimentary nonproliferation contributions—such as its full commitment to export controls both at home and abroad, R&D in safeguard techniques in fuel cycle facilities, and support for new policy initiatives—it will reduce its ability to fully influence other countries' behavior.

In any scenario, Japan's role will be critical to carrying out the Prague Agenda. Tokyo can serve as a role model for emerging powers that it is possible to be a sovereign state with a nuclear fuel cycle *and* comply with increasingly stringent safeguards to insure nuclear security and the public good of global nuclear nonproliferation.

Notes

1. Michael J. Mazarr, "The Risks of Ignoring Strategic Insolvency," *The Washington Quarterly* 35, no. 4, (2012): 7–22, csis.org/files/publication/twq12FallMazarr.pdf.
2. The White House, Office of the Press Secretary, "Remarks by President Barack Obama," speech at Hradcany Square, Prague, Czech Republic, April 5, 2009, http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered.
3. G. John Ikenberry, "Liberal Internationalism 3.0: America and the Dilemmas of Liberal World Order," *Perspectives on Politics* 7, no. 1, (March 2009): 71–87.
4. *Multilateral Approaches to the Nuclear Fuel Cycle: Expert Group Report Submitted to the Director General of the International Atomic Energy Agency*, (IAEA: February 22, 2005), INFCIRC/640.
5. "International Status and Prospectus for Nuclear Power 2012," IAEA, report by the Inspector General, GOV/INF/2012/12-GC(56)/INF/6, (August 15, 2012).
6. World Nuclear Association, "WNA Nuclear Century Outlook," http://www.world-nuclear.org/outlook/clean_energy_need.html. also, http://www.world-nuclear.org/info/Facts-and-Figures/World-Nuclear-Power-Reactors-and-Uranium-Requirements/#.UUl7mhOAbng.
7. A.K.F. Organski, *World Politics*, (New York: Alfred A. Knopf, 1958): 334–336.
8. U.S. Consulate Shenyang, "Dandong Vanadium Seizure Part of "Continuing Enforcement Effort," Wiki Leaks Cable 09SHENYANG134, (July 2009), http://wikileaks.org/cable/2009/07/09SHENYANG134.html.
9. For the detailed analysis of China–Pakistan nuclear relationship from an Indian perspective, see Siddharth Ramana, *China–Pakistan Nuclear Alliance: An Analysis*, (New Delhi: Institute for Peace and Conflict Studies, 2011); "Sudan Signs Agreement With China For New Nuclear Research Reactor," *Research Views*, December 23, 2012, http://www.researchviews.com/energy/power/powergenerationequipment/NewsReport.aspx?ArticleID=578503&sector=power%20 generation%20equipment.
10. "Document confirms Chinese firm sold missile transport vehicles to N. Korea," *The Asahi Shimbun*, June 13, 2012, http://ajw.asahi.com/article/asia/korean_peninsula/AJ201206130003.
11. India recorded No.1 importer position of Iran oil in January 2012.
    Rick Gladstone, "India Explores Economic Opportunities in Iran, Denting Western Sanctions Plan," *New York Times*, February 9, 2012, http://www.nytimes.com/2012/02/10/world/middleeast/india-sees-economic-opportunities-in-iran.html?_r=0.
12. For more detail on the concept of "pivot state," refer to Ian Bremmer, *Every Nation for Itself: Winners and Losers in a G-Zero World*, (New York: Portfolio Penguins, 2012).
13. AFP, "Russia gets Vietnam's first nuclear power deal," *Asia One News*, February 9, 2010, http://www.asiaone.com/News/AsiaOne + News/World/Story/A1Story20100209-197685.html.
14. Security policy communities of the United States and Japan had very close consultation in the process of drafting the U.S. Nuclear Posture Review 2010.
15. Sheila A. Smith, "Japan's Dilemma over Iran Sanctions," *The Atlantic*, February 1, 2012, http://www.theatlantic.com/international/archive/2012/02/japans-dilemma-over-iran-sanctions/252337/.
16. For the detail of the process of negotiation, refer Tetsuya Endo, *Nichibei genshiryoku kyoryoku Kyotei (1988) no seiritsu keii to kongo no mondaiten* [Process of negotiation for

1988 U.S.–Japan Nuclear Cooperation Agreement and issues for the future; in Japanese], (Tokyo: JIIA, 2010).

17. A resolution to declare these principles was adopted by the Diet in 1968.
18. For Japan's disarmament and nonproliferation policy, refer to Disarmament, Nonproliferation and Science Department, Ministry of Foreign Affairs of Japan, "Disarmament and Nonproliferation Policy of Japan 2011," March 2011, http://www.mofa.go.jp/policy/un/disarmament/policy/pdfs/pamph1103.pdf.
19. Nine tons at home (of which approximately 6 tons are fissile plutonium), and 35 tons in the UK and France. Nuclear Policy Division, Cabinet Office, *Wagakuni no plutonium kanri joukyo* [Plutonium stockpiles of Japan; in Japanese], September 1, 2012, http://www.aec.go.jp/jicst/NC/iinkai/teirei/siryo2012/siryo39/siryo2.pdf.
20. Frank N. Von Hippel and Masafumi Takubo, "Japan's Nuclear Mistake," *New York Times*, November 28, 2012, http://www.nytimes.com/2012/11/29/opinion/japans-nuclear-mistake.html?_r=0.