

**Atoms for the Sustainable Future:
Recommendations on Nuclear Energy in the 21st Century**

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Japan Institute of International Affairs
Taskforce on Atoms for the Sustainable Future

I. Growing Hope for Nuclear Energy and Deepening Concerns over Nuclear Threats

Nuclear energy has two facets. When it is used for peaceful purposes such as power generation, medical services, agriculture and industry, it can make a contribution to the betterment of the quality of life. However, it also could be used for military or criminal purposes. Thus, there are both great opportunities and great risks.

Nuclear energy can ease energy security competition. As economies grow, energy demands also increase. For example, in Asia where there are rising energy-consuming countries such as China and India, it is predicted that meeting the demand for energy will become a serious challenge not only to each country but to the region as a whole. In other regions such as Africa and Middle East, plans and express of interest in nuclear energy has been increasing. The expectation that nuclear energy will fill the gap between energy demand and supply has become very high.

Nuclear energy is also expected to contribute to global efforts to cope with the global warming problem as its carbon dioxide emissions are much smaller than fossil fuel sources. Comparing among major energy sources including non-fossil fuels, nuclear power is one of the most effective energy sources to reduce CO₂ emissions.

Given the energy security and environmental challenges that we face, we believe that promoting nuclear energy globally would provide an effective way to cope with these challenges. To this end, international cooperation should be deepened and expanded.

While we expect nuclear energy to play an increasing role that will better our lives, nuclear energy also poses serious security challenges.

The world has had to live for more than sixty years with the serious threat of nuclear devastation, a threat that is the result of the huge number of nuclear weapons that could destroy the earth several times over. While this danger continues, we also face rising nuclear proliferation threats caused by the diversion of peaceful nuclear programs to military use, or withdrawal from international non-proliferation treaties and agreements, nuclear terrorism and thefts or illicit trade of nuclear materials by non-state actors.

It is our hope that all nuclear threats will be reduced and eventually eliminated. All human beings should remember that the total elimination of nuclear weapons is the goal of every civilization. All nations must share a common goal regarding nuclear disarmament and make every effort to achieve it, while the legitimate security concerns of every nation must be addressed in the course of achieving this goal.

We also recognize that no other actor, either state or non-state, should be allowed to possess nuclear weapons and weaponization capabilities. Neither should any state and non-state actor assist others' proliferation activities. As the use of nuclear energy spreads, risks and threats that arise from such activities would also rise. In particular, recent challenges such as cases of North Korea and Iran present great risks of proliferation, illustrating insufficiency in international mechanisms to oversee and prevent exploitation of peaceful nuclear activities for military purposes.

One could divert peaceful nuclear facilities into military ones without detection, if safeguards are not properly functioned for such facilities. One could use peaceful nuclear program to accumulate materials and capabilities for military purposes, hiding such intentions, before it would withdraw from the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the International Atomic Energy Agency (IAEA) and other international non-proliferation obligations. Or, one might use peaceful nuclear program to cover clandestine nuclear activities.

Therefore, our great challenge is to establish universal principles for the promotion of nuclear energy to contribute to sustainable growth of the global economy, solution of global warming problems, and meeting energy security needs, in well balance with furthering efforts to pursue the reduction of risks posed by threats of nuclear proliferation, nuclear terrorism, and existing nuclear weapons. We also need to be reminded that concerns over safety of nuclear activities have become further important for maintaining credibility and sustainability of nuclear energy activities. The peaceful use of nuclear energy should not be exploited to acquire nuclear weapons capabilities.

Nuclear terrorism is now perceived as one of the gravest security threats in nuclear-related activities as it is an event with high intensity consequence. While the probability of such event is not so high, once it happens, it would cause a serious damage on society in its economy,

social life, and security order. The security of nuclear materials and facilities must become a priority.

It is extremely important for the international community to make a long-term, sustained commitment to a ‘balanced’ approach to the peaceful use of nuclear energy in a world that is safer from nuclear risks. And we believe that various international fora including G8 Summit meetings should provide platforms for discussing ways to cooperate toward this common goal.

Therefore, we recommend the international community to urgently address the following issues.

II. Toward a More Balanced Approach to Promoting Peaceful Use of Nuclear Energy with Strengthening Global Nuclear Non-Proliferation

We reaffirm that each nation has the “inalienable right” to enjoy the benefits of the peaceful use of nuclear energy in conformity with the provisions of non-proliferation and safeguards obligations in the NPT and the IAEA Statute. This ‘inalienable’ right should not permit the acquisition of sensitive nuclear materials and technology without transparent and plausible plans for strictly peaceful programs.

Since nuclear energy promotes energy security and better protects the environment, we recognize the importance of international cooperation in promoting the peaceful use of nuclear energy. At the same time, it is important that all nations be aware of the risks related to the introduction of nuclear power.

Recommendation 1: Establish the “Three S” as universal guiding principles for safe and secure development of nuclear energy activities

Due to dual nature and necessity of risk management of nuclear energy, states that intend to introduce peaceful nuclear activities must take into account; a) Safety of their facilities and operation; b) Security of facilities and materials; and c) non-proliferation (or Safeguards). (“Three S”: Safety, Security, and Safeguards) There is a new international environment for nuclear activities in which the threat of terrorism is rising, and the needs for nuclear energy have been increasing in developing countries. Therefore, demand is increasing for wider and clear awareness of

the indispensability of “Three S” for the introduction and operation of nuclear power and for the harmonization and , where necessary, strengthening of the rules and regulations governing the “Three S” in an integrated manner, so that the world can enjoy the benefits of nuclear energy while minimizing the nuclear risks. With such integrated, where necessary strengthened and streamlined framework of the “Three S”, prerequisite for the introducing and operating nuclear energy activities will become clearer, and the transparency and sustainability of international cooperation and technology transfer for the peaceful use of nuclear energy will be enhanced.

The G8 should endorse the “Three S” for strengthening nuclear security, nuclear safety and non-proliferation rules and guidelines, and appropriate international fora such as the IAEA could discuss and decide details. It would also be useful to invite nuclear industry into discussion on “Three S” as they have expertise, and are, in many cases, primarily responsible for building and operating nuclear facilities.

It is not our desire to discriminate between ‘haves’ and ‘have-nots’ by setting up this framework. Rather, we propose that the international community (in particular G8 countries) should provide necessary assistance (both technically and financially) to states which have nuclear power plants, or have plans to introduce nuclear power programs to meet requirements of “Three S”. For safe and peaceful promotion, mechanisms for international cooperation should be established in the areas of technical assistance such as human resource development as well as sharing best practice in safety, security and non-proliferation activities.

Recommendation 2: Provide appropriate international financial assistance schemes to nuclear energy programs and projects in developing countries

Capital procurement would be a key to expand nuclear energy worldwide. Nuclear power generation needs a large initial capital investment and requires a long-term payback period. Developing countries need to attract international capital for their nuclear programs. Therefore, the international community should offer innovative financial mechanisms, with which private and public investment for the construction of nuclear reactors would be facilitated, as the IAEA General Conference requested to the Director General of the IAEA (cf. GC(50)/res/13, September 2006 and GC(51)/res/14, September 2007). Other existing financial mechanisms such as World

Bank loans and OECD guidelines for export credit, which currently discriminate against nuclear projects, should be made available for nuclear power projects.

It may also be worth examining the linking of financial support through mechanisms mentioned above with the fulfillment of “Three S” guidelines since it would contribute to enhancing safety and security of nuclear activities, and non-proliferation.

Recommendation 3: Address nuclear energy as an effective tool for coping with global warming and make appropriate schemes to incorporate nuclear energy into such efforts.

Currently, there is no incentive or mechanism to facilitate the utilization of nuclear energy for environmental purposes while nuclear energy is quite effective in terms of reducing CO₂ emission. Such discrimination against nuclear energy might undermine international efforts to cope with global warming. We urge the international community to acknowledge that nuclear energy would be an effective way to contribute to containing the increase of CO₂ emissions. Relevant mechanisms should be available for nuclear energy projects. In particular, we back the creation of a policy mechanism to systematically incorporate the promotion of nuclear energy in the efforts to tackle global warming in the new round of negotiations.

Recommendation 4: Address safety and liability properly both in the domestic regulatory framework and in international cooperation

We recognize that nuclear safety and liability are important issues when introducing nuclear energy program. Confidence in the safety of nuclear power operation is an indispensable basis for promoting nuclear energy. Obtaining such confidence should be put a high priority by government and industry in introducing nuclear power plants.

Lack of a nuclear liability scheme could also be a serious obstacle for states which would provide cooperation and assistance in peaceful nuclear activities. All states should establish liability legislation and a mechanism for compensation related to nuclear accidents, which would be in conformity to internationally established norms and principles for nuclear liability.

The international community should provide cooperation with states which would like to introduce nuclear energy, in establishing a regulatory framework and administrative capacities in properly addressing safety and liability.

Recommendation 5: Universalize the Additional Protocol and enhance the export control regime

(1) Pursue universalization of the Additional Protocol

We believe that universalization of the Additional Protocol (AP) to IAEA safeguards agreements is one of the most important and effective ways to check nuclear proliferation. We recognize that it would be difficult to make the AP obligatory now. However, in the spirit of cooperation, and given the shared interests in reducing nuclear threats, the international community must create a more effective way to utilize the AP in multilateral and bilateral ways, for the objective of non-proliferation.

(2) Make adherence to Additional Protocol a condition for nuclear trade

Strengthening export control measures is essential for preventing proliferation. We strongly encourage the NSG to adopt adherence to the AP as an additional condition for supplying nuclear related materials and technology in the NSG guidelines. If it is difficult, G8 countries may voluntarily declare that concluding the AP will be a condition for the supply of nuclear materials and technology.

While we are aware of concerns over its unconditional extension, a moratorium by the G8 regarding the transfer of sensitive technology and materials to additional states should be extended until a proper guideline or mechanism to regulate nuclear trade is established. In the meantime, we encourage the G8 and NSG to continue to discuss this issue.

Recommendation 6: Explore ways to utilize Assurance of Fuel Supply and Multilateral Approaches to nuclear fuel cycle for promoting non-proliferation and sharing nuclear energy opportunities.

(1) Reliable assurance of supply as key to effective multilateral mechanisms

Assurance of fuel supply for non-nuclear fuel cycle states (or multilateral approaches to nuclear fuel cycle) has significance in shaping and embedding robust non-proliferation norms and habits in the international community. The introduction of such mechanisms would contribute to non-proliferation.

Given Article IV of the NPT, it would be impossible to force all states to join a fuel supply mechanism. But it is important to discuss assurance of supply and multilateral approaches as it would contribute to strengthening international non-proliferation norms. Reliable fuel supply assurance mechanisms are a realistic option to keep nations from developing their own enrichment and reprocessing capabilities.

(2) Multilateral mechanisms should not create new nuclear ‘haves’ and ‘have-nots’

International interdependence is already a fact in the area of nuclear fuel supply, and it will be increasingly important as most ‘national’ fuel cycle programs have international elements. Therefore, for some countries -- such as those with small scale nuclear programs -- it would be more efficient to rely on an international mechanism as a backup to fuel procurement through market mechanisms. Multilateral approaches may provide an alternative measure for states to procure nuclear fuels. Furthermore, international interdependence would help ensure that ‘national’ programs would not divert into military purposes as interdependence could function as a mutual oversight mechanism.

We are aware of concerns about these mechanisms. First, such multilateral fuel cycle arrangements should not distort existing, relatively well-functioning market mechanisms for fuel procurement. Second, consumer states would be concerned over whether they could become a producers’ cartel for nuclear energy, which would extend control over not only the fuel market, but also consumer states’ sovereignty over nuclear programs. There is also concern that such mechanisms could fix the status of supplier states (or ‘nuclear haves’) and consumer states (or ‘nuclear have-nots’) – in other words, they could create another form of discrimination in the international nuclear order. Therefore, it is necessary for such a mechanism to be flexible enough to accept various types of contribution by member states, depending on what they can provide to the mechanism. Such mechanisms must be inclusionary rather than exclusionary. Third, Focusing on enrichment service in the multilateral approaches or assurances of supply is not sufficient in coping with the risk of fuel supply disruption. Envisioning such mechanisms should also pay attention to other functions in the front end process, such as mining, conversion, and fuel fabrication.

Recommendation 7: Address concerns over the backend of fuel cycle

We should also look at the entire nuclear fuel cycle, from mining to spent fuel management. Most countries with civilian nuclear reactors face problems related to management of spent fuel. To make international assurance of supply credible and attractive, we need to address the management of the backend of the fuel cycle. Providing viable spent fuel management options would further increase the reliability of international mechanisms for managing the nuclear fuel cycle.

We also should be reminded that effective management of backend of fuel cycle is important in the context of both non-proliferation as well as nuclear security, and utilization of resources. Measures should be taken for increasing transparency on stockpile of recovered uranium and plutonium. The stockpiles of plutonium should be maintained at appropriate size, and they must be properly protected. For the sake of utilizing them as resources, we may pursue efficient use of recovered uranium and plutonium, such as burning at reactors. It would also contribute the reduction of the stockpiles of such materials.

Recommendation 8: Strengthen enforcement and implementation mechanisms for non-proliferation**(1) Strengthen supplementary measures**

Policy measures such as UNSCR1540 and the Proliferation Security Initiative (PSI) are important elements of the international non-proliferation regime. They can play a role in filling gaps that are not covered by other conventional non-proliferation mechanisms such as export controls and IAEA safeguards.

(2) Make conditionalities for withdrawal from NPT

The exploitation of the provision for withdrawal in the NPT (Article X) is a great concern, especially after North Korea's declaration of withdrawal. Exploitation of Article X could undermine the effectiveness of NPT norms. Conditionality for withdrawal from NPT may be properly addressed at the NPT Review Conference.

(3) Strengthen the linkage between IAEA and UN Security Council for enforcement

Enforcement against cases of non-compliance is necessary to maintain the credibility and reliability of the international non-proliferation regime. In this sense, the linkage

of the IAEA and the UN Security Council, which is prescribed in the IAEA Statute, should be reinforced in a way that strengthens the capacity for enforcing non-proliferation rules. The international community's demonstration that it is united and will not tolerate non-compliance with IAEA safeguards agreements through the adoption of resolutions at the UN Security Council, and imposing sanctions by resolutions would strengthen non-proliferation, and deter potential proliferators.

(4) Proper combination among dialogue through ad hoc forum, incentives, and enforcement is important

In the meantime, addressing region-specific or issue-specific security concerns in multilateral fora other than the UN or IAEA can provide effective ways to reduce nuclear threats, and supplement efforts through the UN or IAEA. For example, for imminent proliferation problems such as North Korea and Iran, multilateral negotiation frameworks like the Six-Party Talks and EU3 plus 3, respectively, can play a significant role to secure channels for dialogue with countries concerned and find solutions. The proper combination and balance among dialogue, incentives, and credible enforcement with possibility of sanctions should be utilized for resolving existing proliferation problems.

Recommendation 9: Deepen and widen international collaboration in developing proliferation-resistant technology and sophisticated safeguards and verification technology

A proper combination of political, institutional and technological measures would strengthen capabilities to cope with nuclear proliferation problems. In this sense, the development of proliferation-resistant technology is one promising approach to strengthening non-proliferation efforts. The international community should be further engaged in developing more proliferation-resistant fuel cycle and nuclear reactor technologies and more effective safeguards technologies, through international collaborations such as INPRO, GIF and GNEP. The technological approach to nuclear non-proliferation is important as it might create new ways to pursue nuclear energy while promoting non-proliferation. The technological approach and international cooperation to spur innovative research and development for safer and secure nuclear technologies could be effective approaches as they could supplement other non-proliferation measures.

III. Reducing Nuclear Threats

In order to make the world safer from nuclear threats, all types of security threats derived from nuclear activities should be equally addressed. While a balanced approach for promoting peaceful use of nuclear energy with strengthening safety, security and safeguards intends to strengthen non-proliferation and suppress nuclear terrorism, reducing existing nuclear weapons is another important element in the pursuit of a world free from nuclear threats, enjoying benefits of nuclear energy.

We recognize that the ‘grand bargain’ among the three pillars of the NPT -- non-proliferation, peaceful use of nuclear energy, and nuclear disarmament – continues to be a vital part of the international non-proliferation regime, and each component should be addressed. In particular, it should be reminded that political commitment by nuclear-weapon states of further efforts of nuclear disarmament, which was reassured repeatedly at the 1995 NPT Review and Extension Conference and the 2000 Review Conference, must be faithfully pursued. In order to further widen and strengthen global non-proliferation campaign, disarmament efforts by all nuclear armed states are indispensable. In this context, we need to revisit the importance of addressing and adopting measures for nuclear disarmament.

Recommendation 10: Reemphasize nuclear disarmament and reaffirm the total elimination of nuclear weapons as an important goal for human civilization

We believe that all nuclear-weapon states, whether *de facto* or *de jure*, share a heavy responsibility in reducing nuclear threats from the world. They all should commit to further efforts toward nuclear disarmament, and take concrete steps toward total elimination of nuclear weapons. In this regard, we welcome the progress made by certain states including the United States and Russia on nuclear arms reduction and urge that further concrete steps would be taken by the United States and Russia in achieving less reliance on nuclear weapons for a stable strategic balance, especially through negotiation for post-START I and post-SORT strategic arms control arrangements of two countries. Such efforts by the United States and Russia would lead other countries to make their commitments to reducing nuclear weapons. We believe that such progress will serve to create favorable international circumstances

for nuclear disarmament and non-proliferation toward total elimination of nuclear weapons.

Recommendation 11: Address security incentives for nuclear proliferation

To that end, nuclear-weapon states should take measures that diminish the role of nuclear weapons in security policy to minimize the risk that such weapons would ever be used, and to facilitate a process that ends in their total elimination. These measures should include efforts to eliminate other weapons of mass destructions such as chemical and biological weapons and to improve regional security environments, in particular in conflict-stricken regions since existence of such weapons could be used for the justification of pursuing nuclear weapons.

We also recognize the importance of confidence building for reducing nuclear threats and anxiety by increasing the transparency of both military and civilian nuclear activities, including nuclear doctrines and nuclear energy plans.

Recommendation 12: Achieve early entry-into-force of the CTBT and start negotiation on an FMCT

We recognize the importance of the CTBT and an FMCT in supplementing the NPT in further reducing nuclear threats. We urge states that have not signed or ratified the CTBT to do so swiftly. And we urge members of the Conference on Disarmament not to block FMCT negotiations. In the meantime, we urge all nuclear armed states both inside and outside NPT declaring moratorium of production of fissile materials for weapons purposes, respecting the spirit of an FMCT. Furthermore, we request all nuclear armed states strengthen accountancy and control of their fissile materials for nuclear weapons and disclose information on their status for confidence building purposes.

Recommendation 13: Strengthen international efforts to combat nuclear terrorism and nuclear security concerns

Coping with threats of nuclear terrorism is the current security priority. The international community should unite to confront these threats under the International Convention for the Suppression of Acts of Nuclear Terrorism, the Global Initiative to Combat Nuclear Terrorism and the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities, and by strengthening domestic measures of control

and management over materials and security of facilities. Yet a global effort to cope with nuclear terrorism could be more effective. To do this, G8 countries should offer assistance to other countries to implement effective accounting and control over the stockpile of nuclear, radioactive and other radiological materials.

The Global Partnership against the Spread of Weapons and Materials of Mass Destruction (nuclear, radiological, biological and chemical) was launched at the G8 Kananaskis Summit in June 2002 to cope with the growing threat of terrorists acquiring such weapons and materials. The G8 and their partners have been implementing specific projects, including the securing of nuclear materials, the dismantlement of nuclear submarines and destruction of chemical weapons, in Russia. Because the prospect of related materials, equipment and technology falling into the wrong hands is a global danger, the activities under this Partnership should be globally expanded in scope and membership. In this sense, the G8 Global Partnership could be utilized as a channel for providing necessary financial and technical cooperation to countries urgently necessitating measures to strengthen security and physical protection of nuclear and radiological materials, and implement UNSCR1540.

We also take note on the importance of sharing information, expertise and best practice among like-minded countries on nuclear security and physical protection as well as protecting sensitive information. In particular, efforts to facilitate information sharing and mutual cooperation among nuclear operators and facilities should be promoted.

Conclusion

The world faces serious challenges that could threaten the survival of the human race. Tightening energy supply and global warming are among these imminent challenges. Safe and secure utilization of nuclear energy will play an important role in coping with these problems, by easing pressure from energy security needs and supplying energy with much less CO₂ emission than other major energy sources.

Yet, nuclear energy also poses serious security and safety challenges. It is extremely important that peaceful use of nuclear energy takes into account nuclear security against terrorist

activities, the safe operation of nuclear energy facilities, and preventing proliferation. Without addressing these challenges, the peaceful use of nuclear energy cannot be promoted. Therefore, we must take a balanced approach to strengthen nuclear safety, security, and non-proliferation measures as well as to promote peaceful use in an appropriate, effective manner. In this regard, the “Three S” would provide a useful conceptual framework to comprehensively deal with nuclear risks while developing safe and secure nuclear activities. In addition, nuclear disarmament should be further promoted. Promotion of nuclear disarmament would strengthen norms of the international non-proliferation regime, and thus it would encourage states to be engaged in global non-proliferation efforts. We believe that respecting the “Three S” concept in promoting nuclear energy and sincere promotion of nuclear disarmament are essential for the promotion of nuclear energy to gain universal legitimacy and confidence.

It may take time to realize and implement measures to meet these challenges. But risks are imminent. The G8 must take the initiative in discussing concrete actions and taking immediate steps to reduce such risks.

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政策提言 「持続可能な未来のための原子力（Atoms for the Sustainable Future）」

要 約

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（財）日本国際問題研究所

新しい核の秩序に関するタスクフォース

I. 背景：原子力への期待の高まりと核の脅威に対する懸念の深まり

原子力には二つの顔がある。発電等の平和利用は人類の生活に向上をもたらす。しかし、軍事目的や悪意を持って使用されれば、それは大きな脅威ともなる。

近年、アジア諸国をはじめ世界各地でエネルギー需要が高まっている。その需要をいかに満たしていくかは、国際社会にとって大きな挑戦である。また、地球温暖化への対応として二酸化炭素の排出の抑制にも取り組まなければならない。これらの課題に対処するためには、二酸化炭素をほとんど排出しない原子力を、地球規模で推進することが有効であり、原子力分野における国際的協力を深化・拡大させていく必要がある。

その一方で我々は今、核の脅威に直面している。人類は、60年以上にわたり核の応酬による破滅の脅威と共存してきた。そして今、我々は平和利用の転用や非国家主体による盗取といった不法な手段を通じた核拡散や核テロというさらなる脅威にさらされている。

あらゆる核の脅威を完全に除去することは我々人類の目標である。この目標はすべての国のすべての人々によって共有されなければならない。国家であれ、非国家主体であれ、新たに核兵器や核兵器製造能力を保有する者が現れないよう努力を尽くさなければならない。

今我々に課された大きな課題は、世界経済の持続的発展と地球温暖化問題の解決に貢献するために原子力を活用することと、核拡散や核テロ、そして既存の核兵器の脅威を削減することを両立させるための枠組みを構築することである。同時に、原子力平和利用の信頼性と持続可能性を維持するために、原子力安全の確保が最優先されなければならない。また、核テロの脅威に対抗するために核物質や施設のセキュリティにも優先的に取り組む必要がある。

重要なのは、原子力の促進と核のリスクへの対処においてバランスのとれたアプローチを模索することであり、G8をはじめとする国際社会はこの人類共通の目標に対して真剣に取り組むべきである。

かかる現状認識に立って、本タスクフォースは次のように提言する。

II. 核不拡散と原子力の平和利用推進をともに強化するアプローチ

提言 1：原子力の安全安心な発展のための普遍的な指標として「3S（スリー・エス）」を確立する

3S とは、原子力の導入にあたり、安全（Safety＝原子力の安全な運転）、セキュリティ（Security＝核物質や施設の防護）、保障措置（Safeguards＝不拡散）の3分野において、国際的な基準を包括的に満たすことを促すための概念である。3S を満たすことで原子力を安全かつ安心に推進するのに望ましい環境を創出する。国際社会は、IAEA がこうした規範の形成に役割を果たすことを支援し、また、実際の原子力計画の導入に際し導入国がこの基準を満たすために積極的に協力すべきである。

提言 2：途上国における原子力発電計画に対する適切な国際的資金協力の枠組みの提供

現在、世界銀行の融資や OECD の輸出信用のガイドラインにおいては、原子力発電計画はその適用が差別ないし除外されている。それらへの再考も含め、原子力発電計画への資金調達を容易にするための国際協力の枠組みについて検討すべきである。

提言 3：原子力を地球温暖化対策の有効な手段として認定し、活用する

原子力は他のエネルギーと比べ二酸化炭素排出量が少なく、原子力の活用は地球温暖化対策としても有効である。京都議定書後のメカニズムを協議するラウンドにおいては、温暖化対策として原子力を促進するための政策メカニズムの創設を目指すべきである。

提言 4：国内の規制枠組みおよび国際協力において、安全と原子力賠償に適切に取り組む

安全への信頼性と万が一に備えた原子力賠償制度は、原子力の推進に不可欠であり、原子力導入国は国際的に確立された規範や原則に即した国内制度を確立すべきであり、国際社会はそれを支援すべきである。

提言 5：追加議定書を活用する

- (1) 追加議定書の普遍化を追求する
- (2) 追加議定書への批准を原子力分野の国際取引の条件とする

原子力供給国グループ（NSG）は、追加議定書の批准を核関連物質や技術の提供の追加的な条件とすべきである。もしそれが困難な場合、少なくとも G8 諸国は自主的に同様の宣言をすべきである。

提言 6：不拡散の促進と原子力の便益を享受する手段として燃料供給保証と核燃料サイクルに対する多国間アプローチを活用する

(1) 信頼性のある供給保証が効果的な多国間メカニズムにとってカギとなる

核燃料サイクルを持たない国に対する核燃料の供給保証は、国際社会における不拡散規範と慣習の形成に重要な役割を果たす。NPT 第 4 条下においては、供給保証メカニズムへの参加を義務付けることは困難であるが、同メカニズムは、核燃料サイクル保有を選択しないことを促すための現実的な政策選択肢の一つである。

(2) 多国間メカニズムは、新しい「核の『持てる国』と『持たざる国』」を作るものではない。

現実として、各国の核燃料の供給はすでに国際的な相互依存体制に組み込まれている。多国間メカニズムの確立は、いくつかの国にとっては燃料調達方法の多様化を意味する。また、多国間化は、各国の国産のプログラムが軍事転用されないことを保証する役割も果たし得る。

ただ、現在機能している市場メカニズムを歪めることがあってはならないし、また原子力の平和利用の便益の享受において、新たな「持てる国」と「持たざる国」の差別を作るものであってはならない。そして、このメカニズムは、単に濃縮だけでなく、核燃料サイクルのすべての過程に注意を向けるべきである。

提言 7：燃料サイクルのバックエンドに関する懸念に対処する

多くの国で使用済み燃料の管理の問題に直面しているが、この懸念への取り組みについて検討していくことが必要である。また、バックエンドの管理、とりわけプルトニウムの貯蔵については核セキュリティや不拡散の観点からも重視すべきである。回収ウランについては資源の効率的な利用という観点も重視すべきである。そうした観点から、プルトニウムや回収ウランの燃焼も含めその処分方法を検討すべきである。

提言 8：不拡散分野における強制と執行メカニズムを強化する

(1) NPT 体制の補完的措置を強化する

国連安保理決議 1540 や PSI の強化

(2) NPT 脱退の条件を設定する

(3) 強制のために IAEA と国連安保理のリンケージを強化する

IAEA 憲章の不遵守の場合、国連安保理は毅然とした対応をすべきである。

(4) 多国間の枠組みを通じた対話と、インセンティブ、そして強制の適切な組み合わせが重要である

提言 9：核拡散抵抗性の高い技術や洗練された保障措置や検証技術の開発のために国際的な協力を深化・拡大する

III. 核の脅威の削減

原子力の平和利用を推進していくためには、あらゆる種類の核の脅威を除去していくことが必要である。それは、喫緊の脅威である核拡散、核テロだけでなく、既存の核兵器による脅威の削減も含まれる。核不拡散、原子力の平和利用、そして核軍縮という NPT の三本柱は、依然として国際不拡散体制の基軸であり、そのすべてについてバランスよく推進していくことが重要である。すなわち、不拡散のための努力を進めようとするならば、既存の核兵器によってもたらされる脅威の削減を進めることが重要であり、脅威削減のために不拡散の努力が必要となる。

提言 10：核軍縮を再強調し、人類にとっての重要な目標としての核兵器の全面的廃棄（全廃）を再確認する

NPT 上認められた核兵器国であれ、事実上の核兵器国であれ、核兵器を保有するすべての国は、核の脅威を削減していく重い責任を持ち、核の廃絶に向けて更なる軍縮努力を行うべきである。特に、米ロが、START I・SORT 後の軍備管理交渉を積極的に進めることで、他の核保有国の核軍縮努力をも促すことになるよう期待する。

提言 11：核不拡散のために安全保障上のインセンティブに取り組む

上記の目的のために、核保有国は、安全保障政策において核兵器の役割を減少させるための方策を取るべきである。それには、他の大量破壊兵器の廃棄も含まれる。

また、信頼醸成のために、軍事ドクトリンや原子力発電計画を含む、軍事用ならびに民生用の核関連活動についての透明性を向上させることが重要である。

提言 12：CTBT の早期発効と FMCT 交渉の開始をめざす

CTBT の早期発効ならびに FMCT の交渉の早期開始に強く期待するとともに、核実験のモラトリアムの継続と、核分裂性物質の生産のモラトリアムをすべての核保有国に強く求める。

提言 13 核テロや核物質防護の懸念への取り組みにおける国際的な努力を強化する

国際社会は、核テロ防止条約や核物質防護条約等の国際的な条約や取り決めのもとに協調し、核テロの脅威に立ち向かうべきである。

G8 グローバル・パートナーシップは、協力の対象国と対象分野を拡大すべきである。核テロ対策（もしくは核セキュリティ）において支援の必要な国に対する協力を提供したり、国連安保理決議 1540 履行のための支援を提供するためのチャンネルとして活用されるべきである。

また、核セキュリティや物理的防護に関する情報やベスト・プラクティスについて友好国間で共有を進めることが重要である。

結論

世界は今、深刻な脅威に直面している。エネルギー供給のひっ迫や地球温暖化問題である。これらの課題に対処し、未来の人類にこの繁栄と環境を残していくためには、原子力の安全かつ安心な利用が重要な役割を果たし得る。

しかし、原子力は同時に重大な安全保障と安全の課題を抱える。原子力安全、核セキュリティ、それに核拡散防止への取り組みは極めて重要である。これらの問題にしっかりと対処することなしに平和利用の推進はありえない。核の脅威への対処と原子力の促進のバランスがとれたアプローチのために、「3S（スリー・エス）」の概念を提唱する。また、既存の核兵器や核テロの脅威に対して直ちに対処することも重要である。こうした脅威に対処することが、原子力の推進に正統性と信頼を与えるのである。

これらのリスクの削減のために G8 は具体的な行動について議論し、ただちに行動に移すためのイニシアティブを取るべきである。

<以上>

政策提言 「持続可能な未来のための原子力（Atoms for the Sustainable Future）」
 ＜概 要＞

2008 年 1 月

（財）日本国際問題研究所
 新しい核の秩序に関するタスクフォース

1. タスクフォースの背景：原子力への期待の高まりと核の脅威に対する懸念の深まり

世界は今、深刻な危機に直面している。エネルギー供給の逼迫や地球温暖化問題である。近年、アジア諸国をはじめ世界各地でエネルギー需要が高まっている。その需要をいかに満たしていくかは、国際社会にとって大きな挑戦である。また、地球温暖化への対応として二酸化炭素の排出抑制にも取り組まなければならない。これらの課題に対処し、未来の人類に繁栄と環境を残していくためには、原子力の安全かつ安心な利用が重要な役割を果たし得る。そのために原子力分野における国際協力を深化・拡大させていく必要がある。

同時に、あらゆる核の脅威を完全に除去することは我々人類の目標である。この目標は、すべての国のすべての人々によって共有されるべきである。

今我々に課された大きな課題は、世界経済の持続的発展と地球温暖化問題の解決に貢献するために原子力を活用することと、核拡散や核テロ、そして既存の核兵器の脅威を削減することを両立させるための確固たる枠組みを構築することである。同時に、原子力平和利用の信頼性と持続可能性を維持するために、原子力安全の確保が最優先されなければならない。原子力の促進と核のリスクへの対処においてバランスのとれたアプローチを取ることが、原子力の推進に正統性と信頼を与える。

G8 を筆頭に国際社会は、この人類共通の目標に対して真剣に取り組む姿勢を示し、具体的な行動について議論し、ただちに行動に移すためのイニシアティブを取るべきである。

2. タスクフォースのメンバー及び活動

以上のような問題意識のもと、（財）日本国際問題研究所は、遠藤哲也・元原子力委員長代理（元在ウィーン国際機関日本政府代表部大使）を座長に、原子力、エネルギー、国際法、安全保障分野における日本のリーダーによって構成されるタスクフォースを2006年8月に発足させた。12回にわたって会合を開催、海外調査や国際ワークショップなどを通じた最新の国際社会の動向に目を配りつつ、2008年1月に13項目からなる政策提言を完成させた。

タスクフォースのメンバーは以下のとおり。

＜座長＞ 遠藤哲也（元原子力委員長代理）

＜委員＞ 秋元勇巳（三菱マテリアル株式会社名誉顧問）

浅田正彦（京都大学教授）

伊藤隆彦（中部電力株式会社顧問、原子力委員会委員）

内山洋司（筑波大学教授）

岡崎俊雄（独）日本原子力研究開発機構理事長）

小川伸一（防衛省防衛研究所研究部長）

中西寛（京都大学教授）

（以上五十音順）

＜幹事＞ 秋山信将（一橋大学准教授）

3. 政策提言「持続可能な未来のための原子力」の要点

1) 原子力の平和利用の国際的な推進のための枠組み作り

- 原子力発電が、安全（Safety）、セキュリティ（Security）、不拡散（保障措置＝Safeguards）の3つの観点から問題なく導入されるようにするため、「3S（スリー・エス）」概念を導入し、原子力導入国に対してそれらの要請を満たすための協力を推進する。またこの取り組みにおける国際原子力機関（IAEA）の役割に期待する
- 原子力計画のための資金調達のための国際協力を推進する
- 原子力安全と原子力賠償への取り組みに対し国際社会は支援を提供する

2) 原子力を地球温暖化対策の手段として位置付ける

- 京都議定書以後の温暖化対策の中で、原子力もクリーンな技術として位置付け、原子力の活用を地球規模の環境対策の枠組みの中に統合することを促進する

3) 不拡散努力の強化

- IAEA 保障措置追加議定書の普遍化を追求し、追加議定書を原子力分野の国際取引における条件とする。また G8 諸国は自主的に同様の宣言を行うべきである
- 不拡散の促進と原子力の便益の享受を同時に追求する観点から、燃料供給保証と多国間アプローチを進める
- 原子力における新たな「持てる国」と「持たざる国」の差別は作らない
- 燃料サイクルのバックエンドに関する懸念へ対処する必要がある
- 核不拡散政策の執行と、不遵守の事例への対処としての強制のメカニズムを強化する（PSI、安保理決議 1540 など）
- 核拡散抵抗性の高い技術や保障措置技術の開発のための国際協力を進める

4) 核の脅威の削減

- 核軍縮が人類共通の目標であることをあらためて確認する
- 核不拡散を強化するために核軍縮をさらに促進することは不可欠である
- 信頼醸成のために、軍事用、民生用双方の核活動、とりわけ核ドクトリンや原子力計画における透明性を強化する
- CTBT の早期発効、FMCT の早期交渉開始を促し、すべての核保有国による核実験のモラトリアムおよび核分裂性物質生産のモラトリアムを促す
- 核テロ対策を強化する。とりわけ G8 グローバル・パートナーシップの拡大により核テロ対策（核セキュリティの向上）や国連安保理決議 1540 履行のための国際支援を拡大する