

**Executive Summary**  

  
**Hiroshima Report 2016**  
**Evaluation of Achievement in Nuclear Disarmament,  
 Non-Proliferation and Nuclear Security in 2015**  
**March 2016**

The prospects of eliminating nuclear weapons are still distant at best. Even more worrying, the situation regarding nuclear weapons is becoming more and more complex. The five nuclear-weapon states (NWS) under the Nuclear Non-Proliferation Treaty (NPT)—China, France, Russia, the United Kingdom and the United States—have not made any definite move toward renouncing their nuclear arsenals. Three non-NPT parties—India and Pakistan, which declared to possess nuclear weapons, and Israel, which has maintained a policy of “nuclear ambiguity” but is widely considered to have nuclear weapons—seem unlikely to accede to the NPT as non-nuclear-weapon states (NNWS) in the near future. North Korea declared its withdrawal from the NPT, and has conducted four nuclear test explosions. While the situation surrounding the Iranian nuclear issue has moved more positively, it is too early to be overly optimistic about substantive resolution. The threat persists of a new proliferator emerging on the scene. The threat of nuclear terrorism also remains a high security concern in this globalized world. Growing worldwide interest in peaceful use of nuclear energy could entail the increasing risk of nuclear proliferation as well as terrorism. While problems facing nuclear disarmament, non-proliferation and nuclear security intensify, efforts toward solving them have progressed at a snail’s pace. The NPT Review Conference (RevCon) in 2015 failed to conclude a final document.

This report attempts to help the movement toward a world without nuclear weapons—first, by clarifying the current status of the issues and efforts surrounding nuclear disarmament, non-proliferation and nuclear security. By doing so, it aims to encourage increased debate on these issues by policy-makers, experts in and outside governments, and civil society. Furthermore, by issuing this report from Hiroshima, where a nuclear weapon was once used, it aims to help focus attention and promote further actions in various fields toward the realization of a world without nuclear weapons.

**Items and Countries Surveyed in the *Hiroshima Report 2016***

<b>Items (64)</b>	<ul style="list-style-type: none"> <li>● Nuclear Disarmament: 31</li> <li>● Nuclear Non-Proliferation: 17</li> <li>● Nuclear Security: 16</li> </ul>
<b>Countries surveyed (36)</b>	<ul style="list-style-type: none"> <li>● NWS: China, France, Russia, the United Kingdom and the United States</li> <li>● Non-NPT parties: India, Israel and Pakistan</li> <li>● NNWS: Australia, Austria, Belgium, Brazil, Canada, Chile, Egypt, Germany, Indonesia, Iran, Japan, Kazakhstan, South Korea, Mexico, the Netherlands, New Zealand, Nigeria, Norway, the Philippines, Poland, Saudi Arabia, South Africa, Sweden, Switzerland, Syria, Turkey and UAE</li> <li>● Other: North Korea *</li> </ul>

\* North Korea declared its suspension from the NPT in 1993 and its withdrawal in 2003, and conducted nuclear tests in 2006, 2009, 2013 and 2016. However, there is no agreement among the states parties on North Korea’s official status.

The following is a summary of the results of surveying and evaluating countries’ performances in 2015, which are also shown in graphic forms in accordance with evaluation criteria (see Part II of the *Hiroshima Report*).

# 1. Nuclear Disarmament

Since the end of the Cold War, the overall number of nuclear weapons has been decreasing. Still, approximately 15,850 nuclear weapons remain on the earth, and nuclear-weapon/armed states continue to modernize their nuclear arsenals. While NNWS have explored promotion of nuclear disarmament through, among others, proactive proposals on disarmament measures, little major progress was made in 2015. The United States and Russia have yet to commence negotiation on further reductions of their nuclear weapons. Russia was alleged to be in non-compliance with the Intermediate-Range Nuclear Forces (INF) Treaty. The entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and commencement of a Fissile Material Cut-Off Treaty (FMCT) negotiation have not yet been achieved. Declaratory or employment policies of nuclear posture, as well as nuclear strategies, of nuclear-weapon/armed states remain almost unchanged.

Many NNWS, which increased their frustration over NWS's passive attitudes on nuclear disarmament, proposed several UN General Assembly (UNGA) resolutions regarding the humanitarian dimensions and legal prohibitions of nuclear weapons. However, the voting behavior on those resolutions revealed that the rift among NWS, NNWS allying with the United States, and other NNWS over those issues has been deepening. Furthermore, while the 2015 UNGA adopted a resolution on convening an open-ended working group (OEWG) on nuclear disarmament in 2016, the five NWS, opposed it.

## (1) The status of nuclear forces (estimates)

- Approximately 15,850 nuclear weapons still exist on the earth. China, India and Pakistan are estimated to have added about 10 warheads each in the course of the past year.

## (2) Commitment to achieve a world without nuclear weapons

- On the Japan-led UNGA Resolution titled "United action with renewed determination towards the total elimination of nuclear weapons," France, the United Kingdom and the United States abstained, and China and Russia voted against the resolution in 2015.
- The 2015 UNGA adopted a resolution on convening an open-ended working group (OEWG) on nuclear disarmament.
- At the 2015 UNGA, three resolutions regarding the humanitarian dimensions of nuclear weapons were, for the first time, proposed and adopted.

## (3) Reduction of nuclear weapons

- Russia and the U.S. keep implementing the New Strategic Arms Reduction Treaty (New START). However, they could not commence negotiation on further reduction of their nuclear arsenals.
- Russia was alleged to have violated the INF Treaty, while it denied.
- Nuclear-weapon/armed states continue to promote or contemplate modernization of their respective nuclear arsenals.

## (4) Diminishing the role and significance of nuclear weapons in the national security strategies and policies

- There have been few significant changes in nuclear policies regarding: the role and significance of nuclear weapons; a "sole purpose" or no first use; negative security assurances (except a French declaration); and extended deterrence.
- Russia and the U.S. demonstrated their nuclear deterrent power through military exercises and flight patrols in Europe.
- Four NWS, except the U.S., ratified the Protocol to the Central Asian Nuclear-Weapon-Free Zone Treaty.

## (5) De-alerting or measures for maximizing decision time to authorize the use of nuclear weapons

- There have been few significant changes in NWS's policies on their alert status. Russian and U.S. strategic nuclear forces are considered to remain on high alert status.

## (6) CTBT

- Among the 44 states listed in Annex 2 of the CTBT, whose ratification is a prerequisite for the treaty's entry into force, five states (China, Egypt, Iran, Israel and the United States) have signed but not ratified, and three (India, North Korea and Pakistan) have not even signed.
- The Ninth Conference on Facilitating the Entry into Force of the CTBT was convened in September.
- North Korea conducted the fourth nuclear tests in January 2016.

## (7) FMCT

- In the 2015 session of the Conference on Disarmament (CD), negotiation of an FMCT could not be commenced yet again.
- France submitted a draft FMCT to the CD.
- The group of governmental experts (GGE) on an FMCT was convened

## (8) Transparency in nuclear forces, fissile material for nuclear weapons, and nuclear strategy/doctrine

- NWS submitted their respective reports on their implementations of the NPT, as well as information on their respective nuclear forces and strategy, to the 2015 NPT RevCon.
- The five NWS submitted the "P5 Glossary of Key Nuclear Terms" to the NPT RevCon.

## (9) Verifications of nuclear weapons reductions

- 26 countries participate in the International Partnership for Nuclear Disarmament Verification (IPNDV) launched by the U.S.

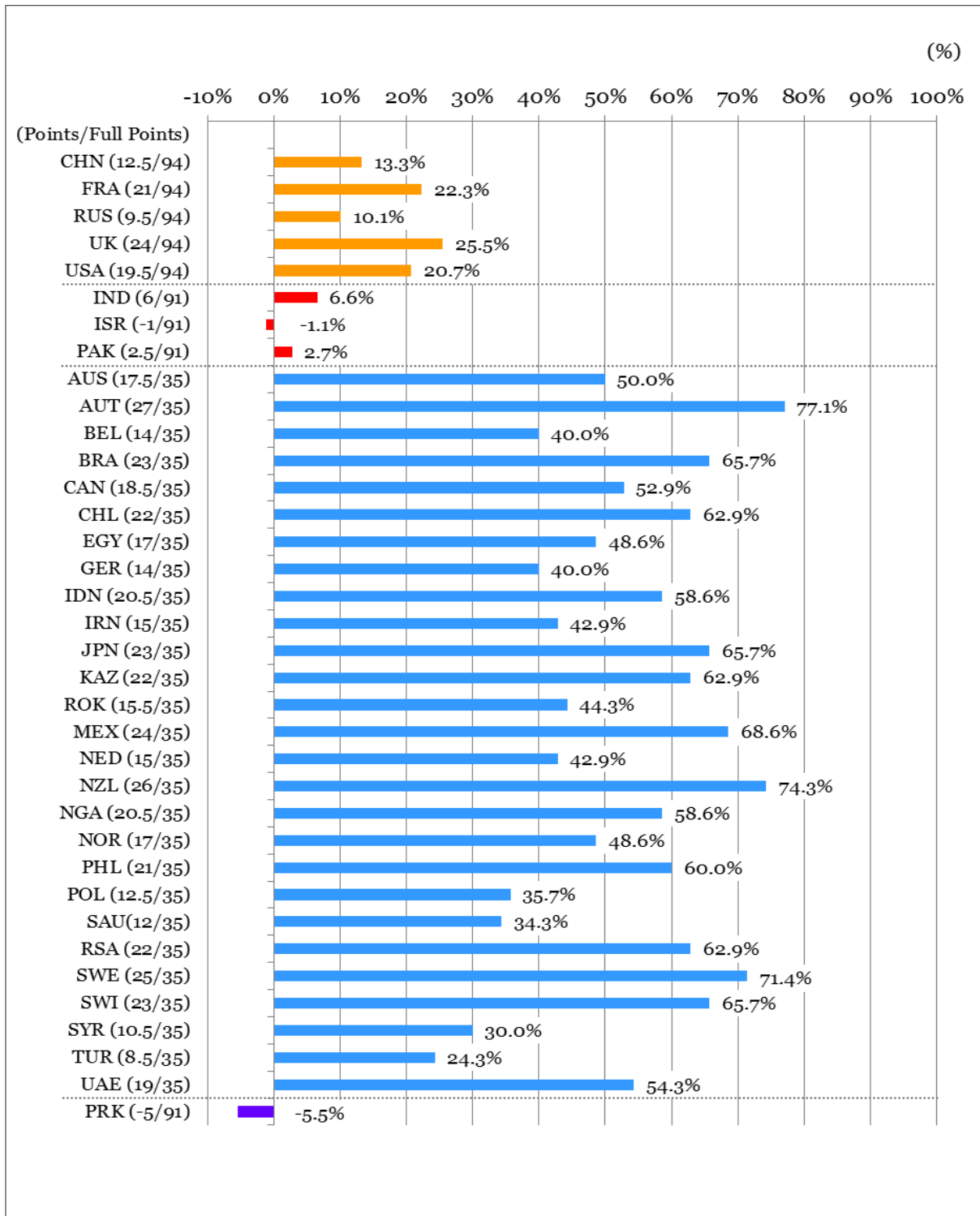
**(10) Irreversibility**

- Russia and the U.S. continue to dismantle or convert, to some extent, their strategic delivery vehicles, nuclear warheads and fissile material declared excess for military purposes.

**(11) Disarmament and non-proliferation education and cooperation with civil society**

- Japan and other western countries proactively conducted disarmament and non-proliferation education, and cooperated with civil society.

**Nuclear Disarmament**

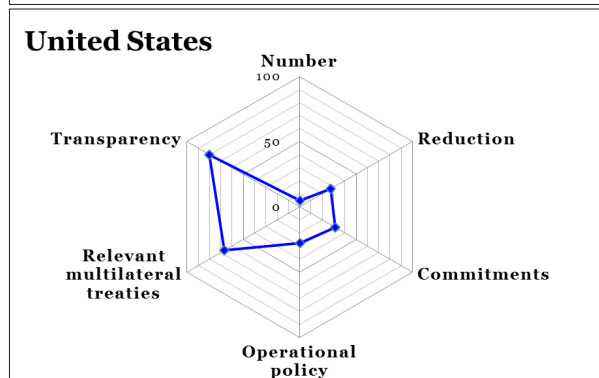
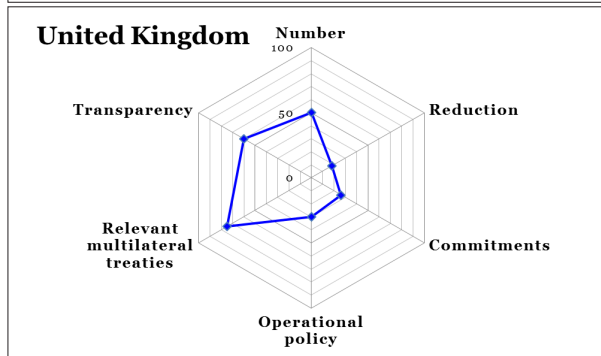
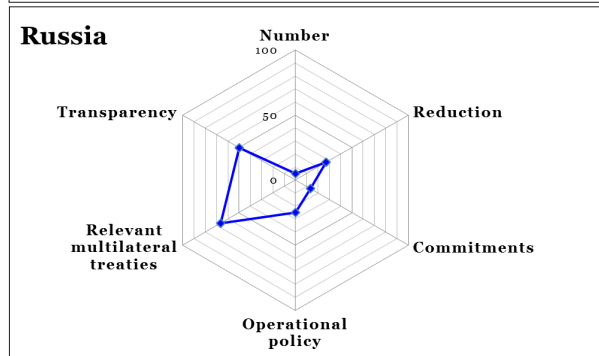
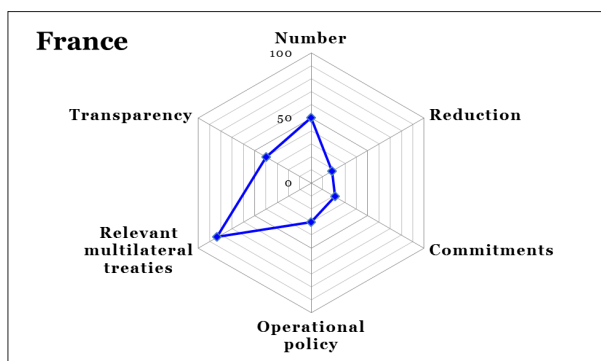
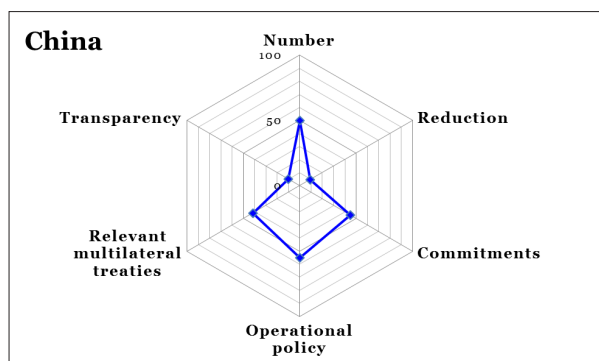


\* Since Russia decided not to continue the Cooperative Threat Reduction (CTR) program, we do not evaluate performances of NNWS regarding “Implementing or planning dismantlement of nuclear warheads and their delivery vehicles” and “Decommissioning/conversion of nuclear weapons-related facilities” in this *Hiroshima Report*. Therefore, the full score of each NNWS regarding nuclear disarmament changes from 39 points for the previous *Hiroshima Reports* to 35 points for this *Report*.

## 6-Point Nuclear Disarmament Radar Charts (NWS)

The following radar charts aim to illustrate where NWS stand in different aspects of nuclear disarmament. For this purpose, the twelve issues used for nuclear disarmament evaluation were grouped into six aspects. According to the radar charts, China is required to improve its efforts for nuclear weapons reduction and transparency. To a lesser extent, France could be more transparent regarding its nuclear weapons-related issues. Russia and the United States are urged toward further reductions of their nuclear arsenals. The performances of the United Kingdom are relatively well-balanced.

Aspects	Issues
Number	Number of Nuclear weapons
Reduction	Reduction of Nuclear weapons
Commitments	Commitments to achieving a world without nuclear weapons
	Disarmament and non-proliferation education and cooperation with the civil society
	Hiroshima Peace Memorial Ceremony
Operational policy	Diminishing roles and significance of nuclear weapons in the national security strategies and policies
	De-alerting, or measures for maximizing decision time to authorize the use of nuclear weapons
Relevant multilateral treaties	Comprehensive Nuclear-Test-Ban Treaty (CTBT)
	Fissile Material Cut-Off Treaty (FMCT)
Transparency	Transparency regarding nuclear forces, fissile material for nuclear weapons, and nuclear strategy/doctrine
	Verifications of nuclear weapons reductions
	Irreversibility



## 2. Nuclear Non-Proliferation

As of December 2015, 191 countries (including the Holy See and Palestine) have acceded to the Nuclear Non-Proliferation Treaty (NPT). However, three nuclear-armed states—India, Israel and Pakistan—remain outside and are less likely to join the Treaty in the near future. North Korea declared its withdrawal from the NPT twice, announced its possession of nuclear weapons, and conducted the fourth nuclear test explosion in January 2016.

One of the most significant developments was the conclusion of the Joint Comprehensive Plan of Action (JCPOA) in July between Iran and E3/EU+3, which for the time being resolved the so-called Iranian nuclear crisis. On the other hand, the NPT RevCon could not conclude a final document, due to disagreement over the issue regarding an international conference on a Middle East Zone Free of Weapons of Mass Destruction (WMD).

The number of countries that accept the IAEA safeguards under the IAEA Additional Protocols has increased steadily. Meanwhile, some NNWS have not accepted or implemented them, arguing that the conclusion of an Additional Protocol should be voluntary, not obligatory.

On export controls, most members of the Nuclear Suppliers Group (NSG) have solid export controls in place. On the other hand, there are concerns that North Korea and Iran are continuing illicit trafficking and procurement activities for nuclear- and missile-related developments.

### (1) Acceptance and compliance with the nuclear non-proliferation obligations

- North Korea has failed to respond to the UN Security Council's decisions, including return to the NPT. Six-Party Talks could not be convened in 2015.
- Iran and E3/EU+3 concluded the JCPOA, which limits Iran's nuclear activities under strict verification and monitoring for a certain period of time. The provisions of the JCPOA were carried out smoothly for duration of the calendar year.
- A Conference on a Middle East Zone Free of WMD, agreed at the 2010 NPT RevCon, could not be convened in 2015. The United States, together with the United Kingdom and Canada, expressed disagreement on proposals for convening a Middle Eastern Conference described in the draft final document of the 2015 NPT RevCon.

### (2) IAEA safeguards

- As of August 2015, 120 NPT NNWS have ratified the IAEA Additional Protocols. Iran officially informed to provisionally apply the Additional Protocol.
- Some countries argue that the conclusion of an Additional Protocol should be voluntary, not obligatory.
- Three cases of non-compliance with the IAEA Safeguards Agreements have yet to be resolved: North Korea, Iran and Syria.
- Iran remained passive in cooperating with the

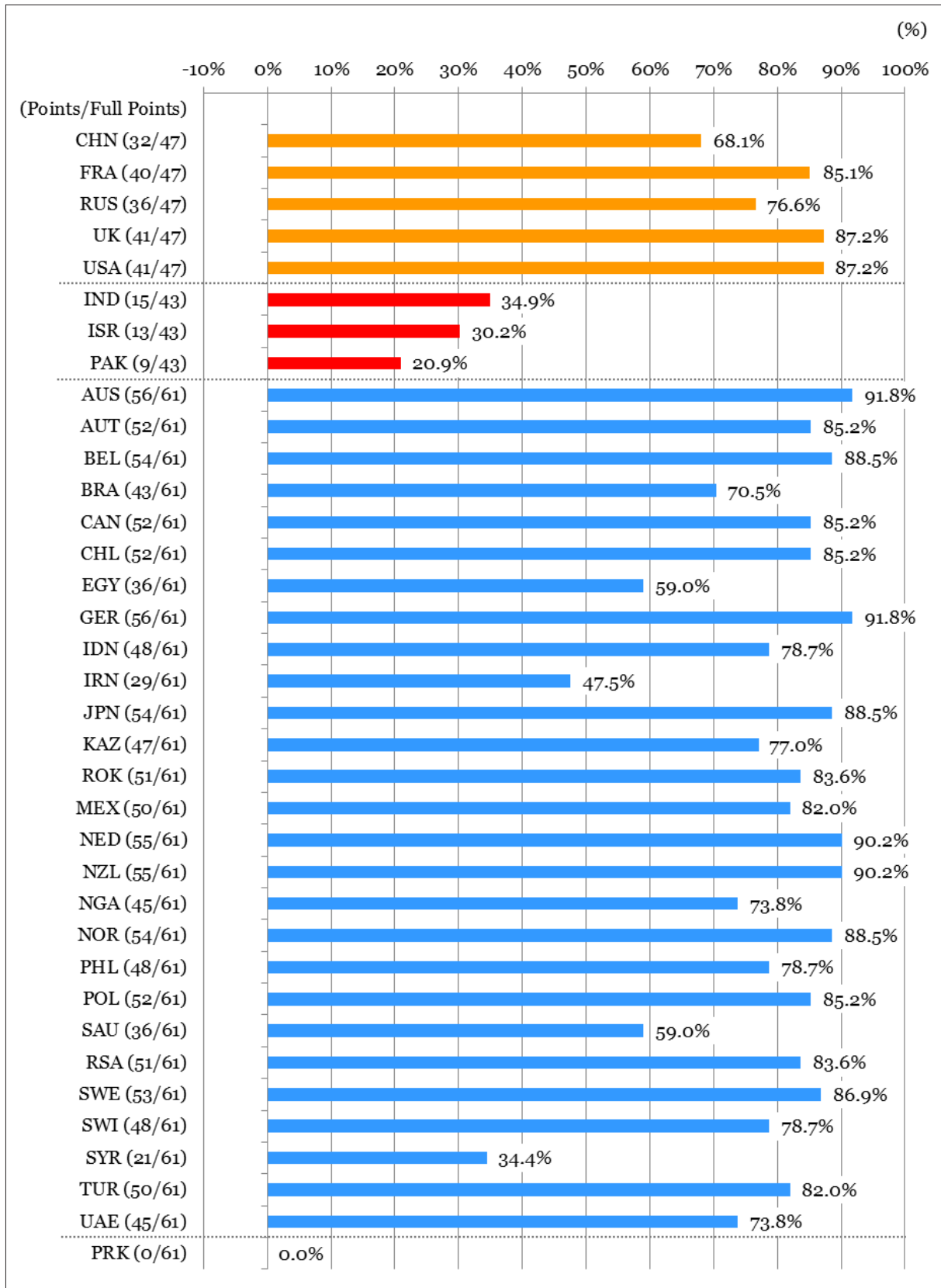
IAEA for resolving the allegations of Iran's possible military dimensions (PMD).

- The IAEA decided to terminate its activities for clarifying the outstanding issues regarding Iran's nuclear program in December.

### (3) Implementing appropriate export controls on nuclear-related items and technologies

- Most members of the Nuclear Suppliers Group (NSG) have solid export controls in place, including establishment of legislative measures and other relevant national implementation systems.
- North Korea and Iran are a concern in terms of continued illicit trafficking of items that are proscribed under the UN Security Council resolutions.
- Under the JCPOA, Iran is to cooperate and act in accordance with the so-called "procurement channel" for obtaining material, equipment, goods and technology needed for its allowed nuclear-related activities.
- On civil nuclear cooperation with India as a non-party to the NPT, some countries seek to promote proactively while others contemplate cooperation, subject to implementing additional nuclear disarmament and non-proliferation measures.
- China has been criticized because its export of nuclear power reactors to Pakistan may constitute a violation of the NSG guidelines.

## Nuclear Non-Proliferation



### 3. Nuclear Security

Because the year 2015 was an intersession period of major international conferences on nuclear security, only a relatively small number of states issued national statements on their progress in enhancing their nuclear security systems. Nevertheless, some states announced that they had successfully removed HEU and plutonium from their soil, and a number of states also confirmed that they had accepted the IAEA's nuclear security advisory services. Moreover, concerned states expected positive results from the Washington Nuclear Security Summit (NSS) in March 2016 and the second IAEA International Conference on Nuclear Security, which will be held in December 2016. On the practical level, acceding to treaties and conventions on nuclear security and safety, applying the fifth revision of the IAEA's Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225/Rev.5) to the nuclear security system of each country, prevention of illicit trafficking and technology development on nuclear forensics, have been continuously pursued by the concerned countries. Also, the number of Centers of Excellence (COEs) established, or being established, for nuclear security training by concerned states, which have been actively promoting peaceful use of nuclear energy, is on a gradual increase. In this kind of environment, the future international architecture of nuclear security from 2016, in which the current global nuclear security system and the commitment of each state would be maintained and strengthened, has been and remains a focus of international attention.

#### **(1) The amount of fissile material usable for weapons**

- Many countries surveyed in this *Report* have been conducting nuclear fuel cycle-related activities. Also, it has been assumed that a certain level of "attractive" fissile material has been stored in more than one third of the surveyed countries.

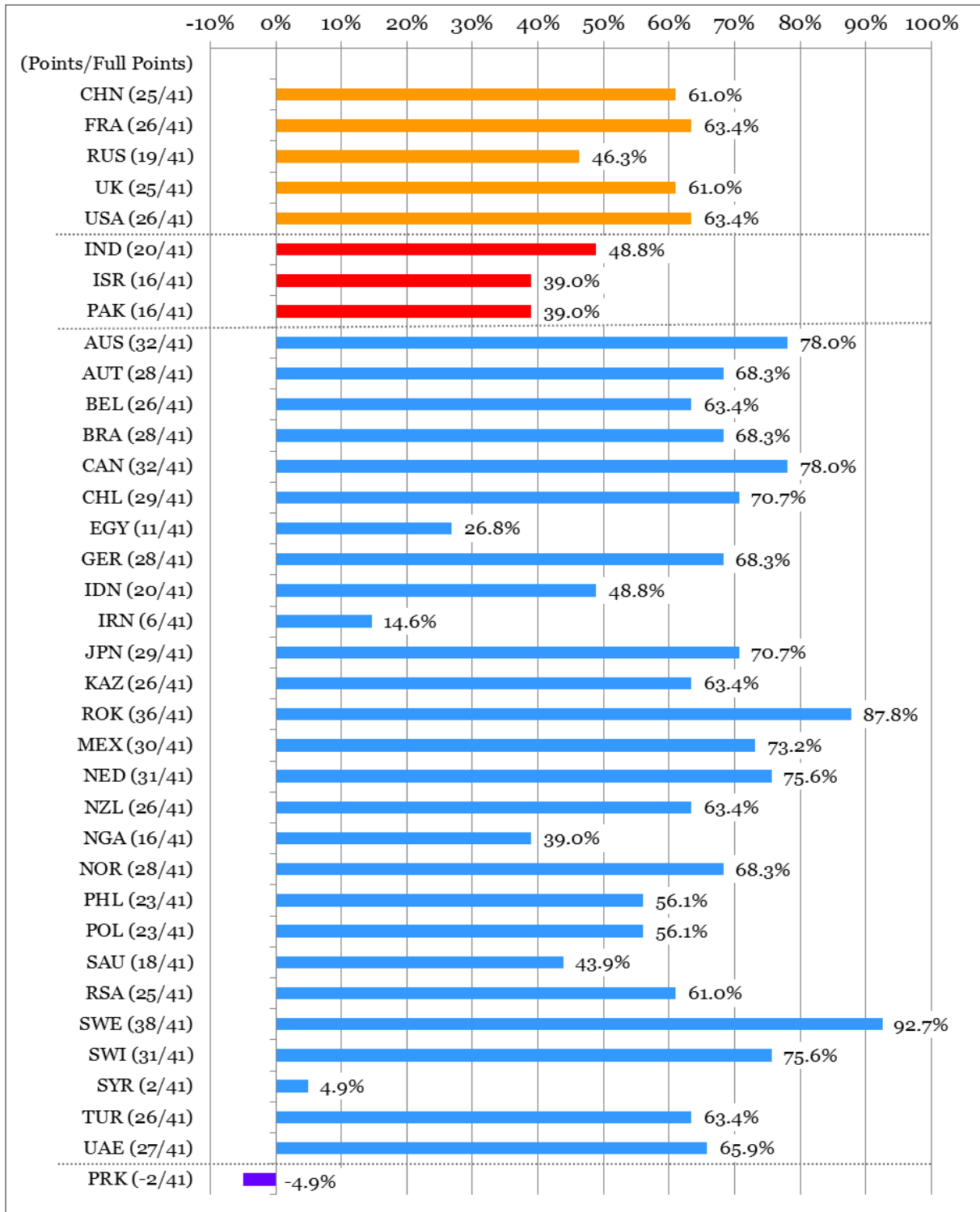
#### **(2) Status of accession to nuclear security- and safety-related conventions, participation in nuclear security-related initiatives, and application to domestic systems**

- Most of the surveyed countries have acceded to treaties and conventions on nuclear security and safety. Countries of proliferation concern, such as Iran, North Korea and Syria, have failed to achieve substantive progress on joining those treaties and conventions.
- Ratification by the U.S. and Turkey shows some sign of improvement of the promotion of early ratification of the CPPNM Amendment. Implementing INFCIRC/225/Rev.5 is a key for strengthening nuclear security. However, information disclosure on this subject has been limited among the countries with advanced civil nuclear programs.
- Countries of proliferation concern have neither joined the several treaties on nuclear security and safety nor applied INFCIRC/225/Rev.5 to their national security systems. In order to prevent nuclear terrorism, improvement of their activities on nuclear security is the urgent challenge. In some cases, there are negative trends on disclosing relevant information and transparency improvement.

#### **(3) Efforts to maintain and improve the highest level of nuclear security**

- Efforts for minimizing HEU in civilian use have achieved some positive results and continued to be promoted under, among others, the Global Threat Reduction Initiative (GTRI).
- The number of countries with advanced civil nuclear programs, which have accepted or scheduled to accept the IAEA's advisory services, such as International Physical Protection Advisory Service (IPPAS) reviewing and recommending nuclear security of the recipients, has increased.
- International cooperation has been promoted on a continuous basis for research and development of nuclear forensics, whose role is to investigate the original location, history, and transport path of any seized material, and the intent of its removal, by analyzing its composition, and physical and chemical form.
- In response to increased awareness about the importance of nuclear security capacity building and international cooperation in this area, many states with advanced civil nuclear programs have established, or are establishing, COEs for nuclear security training. The International Network for Nuclear Security Training and Support Centres (NSSC Network) has been assuming a key role on facilitating further exchange of information between those COEs.

## Nuclear Security



**About Hiroshima Report**—*Hiroshima Report 2016: Evaluation of Achievement of Nuclear Disarmament, Non-Proliferation and Nuclear Security in 2015* is an outcome of the “Hiroshima Report Publication Project,” commissioned by Hiroshima Prefecture to the Japan Institute of International Affairs (JIJA). As published in 2013, 2014 and 2015, *Hiroshima Report 2016* is published in both English and Japanese. This project has been conducted as a part of the “Hiroshima for Global Peace” Plan launched by Hiroshima Prefecture in 2011.

**Published by:**

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