NTI NUCLEAR SECURITY INDEX

Theft / Sabotage / Radiological

JULY 2020

EXCERPT

Losing Focus in a Disordered World

NTI BUILDING A SAFER WORLD

Index developed with The Economist INTELLIGENCE UNIT

The NTI Nuclear Security Index

The 2020 Nuclear Threat Initiative (NTI) Nuclear Security Index (NTI Index) assesses the security of some of the deadliest materials in the world—highly enriched uranium (HEU) and plutonium—against theft and the security of nuclear facilities against sabotage. Stolen HEU or plutonium could be used to build a nuclear bomb; the sabotage of a nuclear facility could result in a dangerous release of radiation.

The NTI Index uses public information to track country-level progress on nuclear security and recommends actions for governments to protect nuclear materials and facilities and to strengthen the global nuclear security architecture. Developed with the Economist Intelligence Unit (EIU) and informed by an international panel of respected nuclear security experts, the NTI Index has been released biennially since 2012. The NTI Index includes two theft rankings and one sabotage ranking:

- **Theft: Secure Materials**—A ranking of 22 countries with 1 kilogram or more of weapons-usable nuclear materials to assess actions related to securing those materials against theft
- **Theft: Support Global Efforts**—A ranking of 153 countries and Taiwan with less than 1 kilogram of or no weapons-usable nuclear materials to assess actions related to supporting global nuclear security efforts
- **Sabotage: Protect Facilities**—A ranking of 46 countries and Taiwan with nuclear facilities, such as nuclear power reactors and research reactors, to assess actions related to protecting those facilities against sabotage

For the first time, the 2020 NTI Index is accompanied by a separate **Radioactive Source Security Assessment** that assesses the national policies, commitments, and actions to secure radioactive sources and prevent a dirty bomb in 175 countries and Taiwan. This new assessment does not score or rank countries.

All data are available in Excel models and can be downloaded at **www.ntiindex.org**.

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FIFTH EDITION

JULY 2020

Index developed with

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Foreword

The world today faces complex and potentially catastrophic threats: the slow burn, quite literally, of climate change; a naturally occurring or manufactured virus that kills millions of people worldwide; a radiological dirty bomb explosion that renders a city center uninhabitable for years; a nuclear weapons exchange that could incinerate entire countries; or the detonation of a terrorist nuclear bomb built from stolen nuclear material that kills thousands of people in an instant. All would create additional, enormous consequences for our environment, global economies, and humanity as a whole.

The COVID-19 pandemic offers a window into the grave implications of poor planning to prevent a crisis from emerging and then escalating. Preventing a naturally occurring virus is tough, but there have been countless missed opportunities to slow the spread and stem the damage—and the unfolding disaster has offered a powerful lesson in the importance of prevention and preparation, coordination and cooperation, accountability and action—all grounded in attention to the science.

These fundamentals are the foundation for the NTI Nuclear Security Index, a biennial ranking of nuclear security conditions worldwide that recommends steps that countries and the global community should take to strengthen security of nuclear materials and nuclear facilities and evaluates progress against those steps. Born out of concern the world is not doing enough to prevent a terrorist attack with almost incomprehensible consequences, the NTI Index has tracked progress and provided guidance on nuclear security since 2012.

This year, for the first time, the results show that progress to secure nuclear materials and facilities has slowed significantly. This is an alarming development for a host of reasons. It comes at a time when the global risk environment is characterized by growing disorder and disruption and the international community's ability to manage cross-border threats is taxed. Disinformation and disruptive technologies have added to governments' challenges, and

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NTI Vice President Laura S. H. Holgate (left) and Senior Director Samantha Neakrase (right) lead discussions with the International Panel of Experts.

intensified competition among major nuclear powers—particularly the United States, Russia, and China—has strained international institutions, treaties, and norms. Constant vigilance by nuclear operators, governments, and international organizations will be needed to keep pace with the threats in this increasingly dangerous risk environment.

The key finding of this year's NTI Index may be an outcome of the end of the series of Nuclear Security Summits—head-of-state events begun in 2010 and held every two years through 2016 that brought high-level attention to nuclear dangers, promoted efforts to reduce them, and resulted in important progress toward securing materials and facilities against nuclear terrorism and other threats.

Security improvements captured by the NTI Index between 2012 and 2018 reflected the work of the summits. Since the summit process ended in 2016, no comparable, cooperative global effort has emerged to replace the summits' role in galvanizing countries to take bold, ambitious actions—even as the terrorist threat and new concerns such as cyber attacks on nuclear facilities, continue to mount. Now, in the first reflection of the post-summit nuclear security landscape, it is no surprise that progress has slowed.

Given the challenging security backdrop for this key finding, it is more important than ever to identify shortfalls and to call for governments, industry, and the international community to once again step up their efforts to prevent a catastrophic attack or act of sabotage that could further shake global foundations.

We all know this work can be successful. In 2012, when the NTI Index was launched, 32 countries had 1 kilogram or more of weapons-usable nuclear materials; today, that number is 22, and the countries that have addressed the threat in the most permanent ways possible—by eliminating or disposing of all of their weapons-usable nuclear materials—are a model for the world. Scores of countries also have taken important steps to mitigate the threat of theft or sabotage by improving physical security around materials and facilities, tightening security during transport of materials, expanding cybersecurity practices, adopting new insider threat-prevention measures, and more.

No one should conclude, however, that progress has slowed because much of the work is completed. That is simply not the case. As the data show, large gaps remain across all the categories and indicators we examine—and the report shows major weaknesses in key areas such as insider threat prevention, security culture at facilities, and cybersecurity. More rigorous threat assessments, personnel vetting, and new regulations, among other steps, must be put in place before extremists exploit weaknesses in these areas and do real damage. Continuous improvement—even among high-performing

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countries—must also be a priority, not only to keep pace with, but to stay ahead of, evolving threats.

Thousands of radiological sources held in every country offer extremists another path to cause chaos—and in conjunction with the NTI Index, we are releasing a first-of-its-kind Radioactive Source Security Assessment that examines national policies and actions to secure these potentially dangerous sources. Typically used for research, medical, industrial, or agricultural purposes, the sources often are poorly secured and housed in areas open to the public, such as hospitals and universities. In the hands of an extremist, a radiological source can be used to build and detonate a radiation-spewing dirty bomb in the heart of a city.

Unlike weapons-usable nuclear materials, these sources don't pose an existential threat, and a dirty bomb would not cause mass casualties or injuries—but cleanup would be enormously costly, environmental and psychological consequences would be significant, and the area around a detonation would be uninhabitable for years.

The good news is that the risk can be eliminated by replacing the dangerous sources with equally effective alternative technologies. NTI has worked closely with New York City, Atlanta, and the state of California—along with Central Asia and the United Kingdom—to do just that. We hope the new assessment included in these pages will build increased awareness of the risk, start a broader discussion about alternatives, and highlight best practices for keeping sources secure.

As we've learned through the COVID-19 pandemic, global security is only as strong as the weakest link. When it comes to existential threats—and even to those that could do just serious damage—every country can do more and must do more. Leaders around the world have a responsibility to use all the tools at their disposal, from the adoption and enforcement of new security requirements to coordinating and cooperating with other countries, to protect against nuclear and radiological terrorism so that we never have to face the terrible consequences.

Ernest J. Moniz
Co-Chair and Chief Executive Officer
Nuclear Threat Initiative

Executive Summary

Losing Focus in a Disordered World

Progress on global nuclear security has slowed significantly over the past two years, despite sizeable gaps that continue to leave nuclear materials and facilities vulnerable to theft and acts of sabotage.

Progress on global nuclear security has slowed significantly over the past two years, despite sizeable gaps that continue to leave nuclear materials and facilities vulnerable to theft and acts of sabotage. The 2020 NTI Nuclear Security Index finds that although a great deal of work remains to protect materials and facilities against increasingly capable extremist groups, the rate of improvement to national regulatory structures and the global nuclear security architecture has declined since 2018. This reverses a trend of substantial improvements made between 2012 and 2018, and it comes at a time when prospects for improving efforts to prevent nuclear terrorism are complicated by growing global disorder and disruption.

The decline highlighted in the 2020 NTI Index suggests that without the driving force of the Nuclear Security Summits, which ended in 2016, or similar high-level events, attention to nuclear security has waned. This is a particularly dangerous development when terrorist capabilities and growing cyber threats contribute to a more complicated and unpredictable environment and geopolitical tensions and events such as the COVID-19 pandemic are challenging cooperation and exposing the limits of how countries cope with cross-border threats.

Recognized as the premier resource and tool for tracking progress on global nuclear security, the NTI Index assesses nuclear security conditions in 175 countries and Taiwan. It assesses (a) actions to secure nuclear materials in the 22 countries that have 1 kilogram or more of weapons-usable nuclear materials, the highly enriched uranium and plutonium that can be stolen and used to build nuclear bombs; (b) actions to protect nuclear facilities in 46 countries and Taiwan that have nuclear facilities at which an act of sabotage could result in a dangerous

> To address the overall finding that progress has slowed significantly, countries must strengthen and sustain political attention on nuclear security to drive progress on adopting nuclear security regulations and on building a more effective global nuclear security architecture.

release of radiation; and (c) actions in 153 countries and Taiwan that have less than 1 kilogram of or no weapons-usable nuclear materials to determine how well they support global nuclear security efforts.

NTI Index results and recommendations, released biennially since 2012 and using publicly available information, help guide governments and industry on how best to develop and implement security measures around some of the world's deadliest materials. For each of the five editions of the Index, NTI and its partner, the Economist Intelligence Unit (EIU), have updated the categories and indicators to reflect changing global threat levels, risks posed by evolving practices and technologies, and input from an international panel of nuclear security experts. For the 2020 NTI Index, updates were made across all rankings to account for progress made over the past decade and the availability of new tools to address risks.

For the first time, NTI this year is releasing a separate Radioactive Source Security Assessment in conjunction with the NTI Index. The first-of-its-kind assessment, which does not rank or score countries, evaluates national policies, commitments, and actions taken in 175 countries and Taiwan to prevent the theft of radioactive materials that could be used to build dirty bombs. The key finding: the international architecture for radiological security is extremely weak, and thousands of radioactive sources remain vulnerable to theft from the hospitals, university labs, and industrial sites where they are used for a variety of beneficial purposes. Although the use of a radiological dirty bomb would not have consequences approaching the scale of those caused by a nuclear detonation, the likelihood that one will be detonated is far greater and the consequences would still be significant: environmental and psychological damage, enormous cleanup costs, and the inability to use the area around the explosion for years.

TOP NTI INDEX FINDINGS AND RECOMMENDATIONS

Australia ranks first for its security practices for the fifth time among countries with weapons-usable nuclear materials and for the third time in the sabotage ranking. In the ranking for countries without materials, New Zealand and Sweden tie for first. Most improved among countries with materials in 2020 is Pakistan, which was credited with adopting new on-site physical protection and cybersecurity regulations, improving insider threat prevention measures, and more.

To address the overall finding that progress has slowed significantly, countries must strengthen and sustain political attention on nuclear security to drive progress on adopting nuclear security regulations and on building a more effective global nuclear security architecture. One way to do this is to send high-level delegations to upcoming conferences and meetings to make commitments and to report on progress.

The NTI Index includes nine additional high-level findings and recommendations.

- **No countries have eliminated their stocks of weapons-usable nuclear materials since 2016, and the number of countries with those materials has plateaued.** Decreases in quantities of materials also are slowing. Countries with materials should revive efforts to reduce stocks of highly enriched uranium and plutonium and should focus on long-term, sustainable stewardship of materials.
- **Regulatory requirements for nuclear security are not comprehensive, with significant weaknesses in key areas such as insider threat prevention, security culture, and cybersecurity.** Countries must strengthen these regimes; theft of nuclear materials or sabotage of a nuclear facility anywhere in the world would have significant implications for all countries, including potential public backlash against the use of peaceful nuclear technology, such as nuclear energy.
- **Countries do not have adequate measures in place to address the human factor of nuclear security.** Countries must strengthen insider threat-prevention measures and security culture.
- **Cybersecurity regulations are slowly adapting to the growing cyber threat to nuclear facilities, but the adoption of these requirements continues to trail the urgency of the threat.** Given the rapid evolution of cyber threats, countries must strengthen cybersecurity at nuclear facilities including through (a) integrating physical protection and cybersecurity; (b) protecting critical digital assets, such as systems related to physical protection, control, accounting, and safety; and (c) building greater awareness of cyber threats among facility personnel.
- **Despite continued actions to strengthen the global nuclear security architecture, the rate of improvement has slowed and significant gaps in the architecture remain.** Countries must work to strengthen and sustain political attention on nuclear security, the International Atomic Energy Agency (IAEA) and the United Nations should work to achieve universalization of key legal instruments governing nuclear security, and countries should implement their treaty obligations and participate in voluntary initiatives, among other steps.

KEY FACTS ABOUT THE NTI INDEX

- **Serves as an objective assessment of nuclear security conditions around the world**
- **Data gathered from publicly available information**
- **Researched by the Economist Intelligence Unit**
- **Advised by an international panel of experts**
- **Government input provided through data confirmation**

- **Countries without nuclear materials are not sufficiently engaged in efforts to bolster the global nuclear security architecture.** To address regional disparities and conflicting priorities, the IAEA should work with countries to build a stronger, more inclusive narrative around nuclear security, stressing that nuclear security is critical to maintaining public support for peaceful uses of nuclear technology.
- **The IAEA still lacks the political and financial support it needs to fulfill its nuclear security mission.** Countries should increase support for the IAEA by contributing to its Nuclear Security Fund and supporting and participating in IAEA activities, and the IAEA should work to build awareness of those activities and of how it has helped countries benefit from peaceful nuclear use.
- **With the exception of publishing regulations, countries' actions to build confidence in nuclear security through information sharing and peer review remain limited.** Countries should increase transparency and confidence by publishing annual nuclear security reports, by making public declarations about their progress on nuclear security, and by participating regularly in peer reviews, among other steps.
- **More countries are interested in acquiring nuclear technology for research or energy purposes, but nine countries planning new nuclear power programs have varying levels of preparedness to take on nuclear security responsibilities.** To be responsible stewards, countries considering new nuclear energy capabilities should establish legal and regulatory frameworks that address insider threat prevention, cybersecurity, security culture, physical protection, control and accounting procedures, and response capabilities.

TOP RADIOACTIVE SOURCE SECURITY ASSESSMENT FINDINGS AND RECOMMENDATIONS

Countries in the Radioactive Source Security Assessment did not receive scores or ranks. **To address the overall finding that the international architecture for radiological security is extremely weak, countries should bolster the global radiological architecture by ratifying key international agreements, by making political commitments to the IAEA Code of Conduct and related Supplemental Guidance, and by participating in voluntary initiatives.**

The Radioactive Source Security Assessment includes four additional high-level findings and recommendations.

- **Most countries do not have the national regulatory regimes in place to secure and control radioactive sources and protect them from theft and unauthorized use.** Countries should establish the national legal framework necessary to effectively regulate and control radioactive sources, including an oversight body and requirements to secure radioactive sources.
- **Most countries do not have adequate regulatory requirements for tracking and controlling the movement of radioactive sources, both nationally and transnationally, so that only authorized recipients receive and possess radioactive sources.** Countries should put in place national measures to track and control the movement of radioactive sources domestically and internationally, to prevent them from falling into the wrong hands.

- **Countries are ill-equipped to regulate and control radioactive sources in their country at all stages of their life cycles, from production, manufacture, use, and transport to disposition.** Countries should establish regulatory measures and practices to track materials throughout their life cycles and follow relevant IAEA guidance on end-of-life management.
- **Very few countries have made public commitments to replace high-activity radioactive sources with alternative technology, and there is varying capacity around the world to implement and sustain the technology's use.** Countries should commit to replacing high-activity radioactive sources with alternative technologies where possible. They should work to identify and address challenges to adopting alternative technology and to share information that can help other countries adopt these technologies, if they have the capacity to do so.

This report highlights key trends in global nuclear security and offers a host of recommendations for improvements at the country level and for ways to build a more effective global nuclear security architecture. It also provides rankings, country-level data, and detailed findings from the new Radioactive Source Security Assessment.

More information, including data to download in Excel models, is available at **www.ntiindex.org**.

Results Tables

The tables on the following pages show the high-level results of the three NTI Index rankings and the Radioactive Source Security Assessment. The NTI Index results tables show overall and category ranks and scores. The Radioactive Source Security Assessment does not include a rank or score. Instead, the percentage of countries and areas receiving each answer choice is shown. More detailed results are available in Excel models, available at **www.ntiindex.org**.

THEFT: SECURE MATERIALS

OVERALL SCORE

Rank / 22		Score / 100	Change since 2018	Change since 2012
1	Australia	93	+1	+15
=2	Canada	87	0	+20
=2	Switzerland	87	+3	+12
4	Germany	85	+3	+16
=5	Netherlands	82	+1	+12
=5	Norway	82	+4	+11
7	Belgium	80	+3	+17
8	Japan	77	-1	+27
=9	United Kingdom	76	0	+8
=9	United States	76	0	+10
11	Italy	75	0	+15
=12	France	69	-1	+10
=12	Kazakhstan	69	+1	+14
=14	Belarus	65	0	+6
=14	China	65	0	+20
=16	Israel	57	0	+10
=16	Russia	57	+1	+6
=16	South Africa	57	+1	0
19	Pakistan	47	+7	+17
20	India	41	0	+8
21	Iran	33	0	+2
22	North Korea	19	+1	-3

1. QUANTITIES AND SITES

Rank / 22		Score / 100	Change since 2018	Change since 2012
1	Switzerland	95	0	+20
2	Australia	94	0	-1
=3	Iran	89	0	0
=3	Norway	89	0	-5
=5	Belarus	75	0	-6
=5	South Africa	75	0	-6
=7	Belgium	72	0	+11
=7	Canada	72	0	+5
=7	Germany	72	0	+5
=7	Kazakhstan	72	0	+5
=11	Italy	70	0	-6
=11	Netherlands	70	0	-5
13	Israel	47	0	0
14	Japan	42	-6	+18
=15	China	33	0	0
=15	France	33	0	-11
=15	North Korea	33	0	-18
18	United States	25	0	0
=19	India	19	0	0
=19	Pakistan	19	0	0
=19	Russia	19	0	-6
22	United Kingdom	14	0	0

2. SECURITY AND CONTROL MEASURES

Rank / 22		Score / 100	Change since 2018	Change since 2012
1	United Kingdom	96	0	+15
2	United States	89	0	+6
3	Canada	88	0	+24
4	Australia	87	0	+25
=5	China	80	0	+39
=5	Germany	80	0	+25
7	Italy	76	0	+23
8	Belgium	75	+8	+30
=9	Japan	74	0	+19
=9	Netherlands	74	0	+23
=11	Belarus	72	0	+18
=11	Switzerland	72	0	+6
13	Russia	70	0	+17
14	France	64	0	+4
=15	Kazakhstan	57	0	+14
=15	Pakistan	57	+25	+41
17	Norway	47	0	+9
=18	India	44	0	+6
=18	Israel	44	0	0
20	South Africa	36	0	+4
21	North Korea	27	0	0
22	Iran	26	0	0

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

THEFT: SECURE MATERIALS *(cont'd)*

3. GLOBAL NORMS

Rank / 22		Score / 100	Change since 2018	Change since 2012
=1	Australia	96	+4	+33
=1	Japan	96	+2	+31
=1	United States	96	-2	+34
4	Norway	94	+4	+31
5	Belgium	93	0	+30
=6	Canada	92	0	+34
=6	Germany	92	0	+22
=6	United Kingdom	92	0	+18
9	Switzerland	87	+4	+29
=10	Kazakhstan	85	0	+26
=10	Netherlands	85	0	+15
12	France	84	0	+31
13	Italy	83	0	+31
14	China	72	-2	+23
15	India	67	0	+28
16	Russia	56	+2	+4
17	Israel	54	-3	+21
18	South Africa	52	+2	0
19	Belarus	47	0	+10
20	Pakistan	45	+1	+9
21	Iran	27	0	+9
22	North Korea	0	0	0

4. DOMESTIC COMMITMENTS AND CAPACITY

Rank / 22		Score / 100	Change since 2018	Change since 2012
=1	Australia	100	0	+11
=1	Canada	100	0	+27
=1	France	100	0	+22
=1	Germany	100	+11	+11
=1	Italy	100	0	+22
=1	Japan	100	0	+69
=1	Netherlands	100	0	+16
=1	Norway	100	+11	+16
=1	Russia	100	0	+5
=1	Switzerland	100	+11	+11
=1	United Kingdom	100	0	0
=1	United States	100	0	+22
=13	Israel	95	0	+27
=13	Kazakhstan	95	0	+16
=15	Belgium	89	0	+11
=15	China	89	0	+15
=15	Pakistan	89	0	+16
=18	Belarus	78	0	+5
=18	South Africa	78	0	0
20	India	36	0	0
21	Iran	5	0	0
22	North Korea	0	0	0

5. RISK ENVIRONMENT

Rank / 22		Score / 100	Change since 2018	Change since 2012
1	Norway	94	+2	+3
2	Switzerland	88	0	-4
3	Australia	87	0	-2
4	Canada	83	0	+4
=5	Germany	81	+3	+13
=5	Netherlands	81	+2	+2
7	Japan	75	0	0
8	United Kingdom	73	+5	+10
9	Belgium	71	+2	-7
10	France	66	-6	+3
11	United States	63	+4	-10
12	South Africa	53	+4	+3
=13	Belarus	48	-2	-1
=13	Israel	48	-1	+5
15	China	44	+4	+18
16	Italy	41	+4	+1
17	India	39	+1	+7
18	Kazakhstan	36	+6	+7
19	North Korea	34	+5	+3
20	Russia	29	+3	+5
21	Iran	18	-1	-1
22	Pakistan	16	0	+9

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS

OVERALL SCORE

Rank / 154		Score / 100	Change since 2018	Change since 2012
=1	New Zealand	98	0	+18
=1	Sweden	98	+1	+16
3	Finland	95	-2	+13
=4	Denmark	92	+3	+9
=4	South Korea	92	+1	+20
=6	Hungary	90	-1	+17
=6	Spain	90	0	+14
=8	Czech Republic	89	0	+14
=8	Poland	89	-2	+18
10	Singapore	88	0	+37
11	Lithuania	87	+4	+15
12	United Arab Emirates	86	-3	+14
=13	Chile	85	0	+22
=13	Romania	85	0	+16
=15	Jordan	84	0	+25
=15	Mexico	84	0	+25
17	Slovenia	83	-2	+7
18	Luxembourg	80	0	+7
19	Austria	79	+1	+3
=20	Armenia	78	0	+17
=20	Slovakia	78	+1	+5
=20	Ukraine	78	-1	+12
=23	Argentina	77	-3	+18
=23	Estonia	77	+3	+9
25	Philippines	76	-2	+24
=26	Indonesia	75	+1	+26
=26	Latvia	75	+2	+6
=26	Nigeria	75	0	+36
=29	Croatia	74	+3	+13
=29	Morocco	74	-1	+22
=31	Iceland	73	+1	+3
=31	Ireland	73	-2	0
=31	Malta	73	-1	+12
=34	Cyprus	72	+2	+5
=34	Georgia	72	+4	+32
=36	Bulgaria	71	+3	+3
=36	Cuba	71	+2	+5
=36	Paraguay	71	0	+20
=36	Portugal	71	-2	+1

3. GLOBAL NORMS

Rank / 154		Score / 100	Change since 2018	Change since 2012
=1	Finland	100	0	+26
=1	Georgia	100	+6	+49
=1	Hungary	100	0	+43
=1	Mexico	100	0	+49
=1	New Zealand	100	0	+37
=1	Poland	100	0	+37
=1	South Korea	100	0	+37
=1	Spain	100	0	+32
=1	Sweden	100	0	+37
=1	Ukraine	100	0	+32
=11	Czech Republic	94	0	+31
=11	Denmark	94	+5	+26
=11	Jordan	94	0	+37
=11	Lithuania	94	+6	+31
=11	Morocco	94	0	+43
=11	Nigeria	94	0	+60
=11	Romania	94	0	+31
=18	Armenia	89	0	+32
=18	Chile	89	0	+38
=20	Indonesia	88	+6	+48
=20	United Arab Emirates	88	-6	+20
22	Philippines	83	-6	+32
=23	Thailand	82	+17	+48
=23	Vietnam	82	0	+59
25	Singapore	77	0	+43
=26	Argentina	76	-6	+25
=26	Slovenia	76	-5	+13
28	Turkey	70	-6	+30
29	Algeria	69	-6	+23
=30	Bosnia and Herzegovina	68	0	+22
=30	Croatia	68	+5	+11
=30	Paraguay	68	0	+28
=30	Slovakia	68	0	+11
34	Malaysia	65	0	+31
35	Luxembourg	64	0	+18
=36	Austria	63	0	+6
=36	Azerbaijan	63	+6	+17
=36	Bahrain	63	0	+12
=36	Bulgaria	63	+6	+6

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

4. DOMESTIC COMMITMENTS AND CAPACITY

Rank / 154		Score / 100	Change since 2018	Change since 2012
=1	Albania	100	0	0
=1	Argentina	100	0	+9
=1	Armenia	100	0	+9
=1	Austria	100	0	0
=1	Azerbaijan	100	0	+66
=1	Bosnia and Herzegovina	100	0	+9
=1	Brazil	100	0	0
=1	Bulgaria	100	0	0
=1	Croatia	100	0	+26
=1	Cuba	100	0	0
=1	Cyprus	100	0	0
=1	Czech Republic	100	0	0
=1	Denmark	100	0	0
=1	Estonia	100	0	0
=1	Finland	100	0	0
=1	Ghana	100	0	+34
=1	Greece	100	0	0
=1	Hungary	100	0	0
=1	Iceland	100	0	0
=1	Ireland	100	0	0
=1	Jamaica	100	0	+26
=1	Jordan	100	0	+17
=1	Latvia	100	0	0
=1	Lithuania	100	0	0
=1	Luxembourg	100	0	0
=1	Macedonia	100	0	+17
=1	Malta	100	0	+26
=1	Mexico	100	0	+9
=1	Moldova	100	0	+26
=1	New Zealand	100	0	0
=1	Philippines	100	0	+26
=1	Poland	100	0	+9
=1	Portugal	100	0	0
=1	Romania	100	0	0
=1	Serbia	100	0	0
=1	Singapore	100	0	+57
=1	Slovakia	100	0	0
=1	Slovenia	100	0	0
=1	South Korea	100	0	0

5. RISK ENVIRONMENT

Rank / 154		Score / 100	Change since 2018	Change since 2012
1	Singapore	95	0	+3
2	New Zealand	94	+3	+5
=3	Iceland	91	+7	+3
=3	Sweden	91	+3	-3
5	Luxembourg	86	+3	-5
6	Barbados	85	+7	+4
7	Austria	82	+2	0
8	Finland	81	-6	+8
9	Seychelles	80	+11	+18
=10	Denmark	77	0	-11
=10	Taiwan	77	+2	+8
=12	Bahamas	76	+2	0
=12	Estonia	76	+2	+16
=14	Botswana	75	+2	0
=14	Brunei	75	+2	-1
16	Slovenia	74	+2	+4
17	Bhutan	73	0	+15
18	Cape Verde	72	+3	+1
19	Uruguay	71	+3	+4
20	South Korea	70	+4	+13
=21	Chile	69	0	0
=21	Ireland	69	+2	0
=21	Malta	69	-4	-4
=21	Qatar	69	+10	+3
=21	Slovakia	69	+6	-1
=26	Czech Republic	67	+2	0
=26	Latvia	67	+8	+12
=28	Malaysia	66	0	+9
=28	Mauritius	66	0	0
=28	United Arab Emirates	66	-1	+10
31	Costa Rica	64	0	-9
32	Portugal	63	+2	-3
33	Cuba	62	-1	-9
34	Namibia	61	+1	+2
35	Hungary	60	-3	-10
=36	Lithuania	59	+6	+2
=36	Spain	59	0	-3
38	Poland	58	-6	-2
39	Senegal	57	+6	+12

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

OVERALL SCORE

Rank / 154		Score / 100	Change since 2018	Change since 2012
40	Turkey	70	-4	+15
=41	Bosnia and Herzegovina	69	+1	+12
=41	Ghana	69	-1	+17
=43	Azerbaijan	68	+3	+30
=43	Moldova	68	0	+12
45	Greece	67	+1	0
=46	Brazil	66	+2	+6
=46	Montenegro	66	+2	+12
=46	Serbia	66	+3	+7
=46	Uruguay	66	+1	+12
=50	Albania	65	-6	+9
=50	Algeria	65	-3	+12
=50	Jamaica	65	+3	+14
=50	Macedonia	65	0	+11
=50	Uzbekistan	65	+4	+18
55	Costa Rica	64	-2	+8
=56	Namibia	63	-3	+13
=56	Peru	63	-1	+12
=56	Qatar	63	+3	+11
=59	Botswana	62	-2	+11
=59	Mongolia	62	+1	+5
=59	Senegal	62	+4	+18
=59	Taiwan	62	+1	+10
63	Bahrain	61	0	+8
=64	Seychelles	60	+3	+4
=64	Vietnam	60	0	+32
=66	Malaysia	59	0	+24
=66	Saudi Arabia	59	0	+28
=66	Tajikistan	59	0	+10
=69	Kuwait	58	+1	+30
=69	Mauritania	58	-2	+9
=71	Burkina Faso	57	+2	+13
=71	Ecuador	57	-1	+13
=71	Mali	57	+1	+8
=71	Niger	57	0	+8
=75	Côte d'Ivoire	56	0	+37
=75	Gabon	56	0	+5
=75	Kenya	56	+1	+1
=75	Thailand	56	+9	+25

3. GLOBAL NORMS

Rank / 154		Score / 100	Change since 2018	Change since 2012
=36	Cyprus	63	+6	+17
=36	Estonia	63	+6	+12
=36	Latvia	63	0	+6
=36	Libya	63	+6	+12
=36	Moldova	63	0	+6
=36	Montenegro	63	+6	+23
=36	Panama	63	+12	+12
=36	Uzbekistan	63	+6	+17
48	Ireland	58	-5	+1
=49	Albania	57	-11	+17
=49	Bangladesh	57	+6	+11
=49	Brazil	57	+6	+17
=49	Cambodia	57	+11	+17
=49	Cuba	57	+6	+17
=49	Ghana	57	0	+11
=49	Greece	57	0	0
=49	Iraq	57	-6	+40
=49	Kenya	57	0	0
=49	Kyrgyz Republic	57	0	+23
=49	Macedonia	57	0	+11
=49	Madagascar	57	0	+17
=49	Malta	57	0	+11
=49	Peru	57	0	+17
=49	Portugal	57	-6	+6
=49	Saudi Arabia	57	0	+11
=49	Senegal	57	+6	+28
=49	Serbia	57	+6	+11
=67	Colombia	52	0	+12
=67	Qatar	52	0	+23
=69	Côte d'Ivoire	51	0	+34
=69	Dominican Republic	51	0	+5
=69	Gabon	51	0	+5
=69	Kuwait	51	0	+17
=69	Mali	51	0	+5
=69	Mauritania	51	0	0
=69	Niger	51	0	+5
=69	Tajikistan	51	0	+11
=69	Turkmenistan	51	0	0
=69	Uruguay	51	0	+17

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

4. DOMESTIC COMMITMENTS AND CAPACITY

Rank / 154		Score / 100	Change since 2018	Change since 2012
=1	Spain	100	0	0
=1	Sweden	100	0	0
=1	Taiwan	100	0	+17
=1	Tajikistan	100	0	+17
=1	Turkey	100	0	+9
=1	Ukraine	100	0	+9
=1	United Arab Emirates	100	0	+9
=1	Uzbekistan	100	0	+26
=48	Burkina Faso	91	0	+17
=48	Chile	91	0	+17
=48	Congo (Dem. Rep. of)	91	0	0
=48	Costa Rica	91	0	+17
=48	Ecuador	91	0	+17
=48	Guatemala	91	0	0
=48	Mali	91	0	+17
=48	Mauritania	91	0	+34
=48	Mongolia	91	0	+8
=48	Montenegro	91	0	0
=48	Namibia	91	0	+8
=48	Nicaragua	91	0	+8
=48	Nigeria	91	0	+25
=48	Paraguay	91	0	+17
=48	Peru	91	0	+8
=48	Uganda	91	0	+25
=64	Algeria	83	0	+9
=64	Botswana	83	0	+17
=64	Côte d'Ivoire	83	0	+74
=64	Indonesia	83	0	+9
=64	Kenya	83	0	+9
=64	Niger	83	0	+9
=64	Tanzania	83	0	+9
=64	Tunisia	83	0	+9
=64	Uruguay	83	0	+9
=73	Afghanistan	74	0	0
=73	Bahrain	74	0	+8
=73	Bangladesh	74	0	-9
=73	Cameroon	74	0	+8
=73	Cape Verde	74	0	+17
=73	Gabon	74	0	+8

5. RISK ENVIRONMENT

Rank / 154		Score / 100	Change since 2018	Change since 2012
=40	Cyprus	56	-3	-8
=40	Jamaica	56	+9	+13
=40	Mongolia	56	+2	+11
=43	Georgia	55	+3	+20
=43	Ghana	55	-2	+6
45	Rwanda	54	+5	+10
=46	Guyana	53	+4	+9
=46	Kuwait	53	+7	+13
=46	São Tomé and Príncipe	53	+10	+18
=49	Belize	52	+5	+1
=49	Croatia	52	0	-2
=49	Trinidad and Tobago	52	+4	+12
=52	Bulgaria	51	+2	+2
=52	Romania	51	-1	+8
=52	Vietnam	51	0	0
=55	Oman	50	+3	+14
=55	Panama	50	+5	+11
=55	Paraguay	50	0	+6
=55	Swaziland	50	+2	+7
=59	Argentina	49	-1	+14
=59	Egypt	49	0	+15
=59	Suriname	49	+1	-1
62	Colombia	48	0	+13
=63	Fiji	47	+4	+5
=63	Gambia	47	+11	+12
=63	Jordan	47	+2	+14
=63	Lesotho	47	+2	-7
=63	Samoa	47	+4	+5
=63	Solomon Islands	47	+4	+5
=63	Tonga	47	+4	+5
=63	Vanuatu	47	+4	+5
=71	Sri Lanka	45	+2	+5
=71	Zambia	45	-1	-4
=73	Bahrain	44	0	+2
=73	Gabon	44	+2	0
=73	Greece	44	+3	-2
=73	Saudi Arabia	44	0	+12
=73	Thailand	44	+4	+2
=78	Dominican Republic	43	0	+8

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

OVERALL SCORE

Rank / 154		Score / 100	Change since 2018	Change since 2012
=79	Bangladesh	55	+2	+4
=79	Tunisia	55	-1	+4
81	Guatemala	53	+1	+4
82	Nicaragua	52	0	+4
=83	Panama	51	+6	+10
=83	Tanzania	51	+1	+6
=85	Congo (Dem. Rep. of)	50	+2	+1
=85	Uganda	50	-4	+8
=87	Cameroon	49	+1	+10
=87	Rwanda	49	+2	+3
89	Cape Verde	48	+1	+5
=90	Colombia	46	0	+12
=90	Kyrgyz Republic	46	0	+18
=92	Dominican Republic	44	0	+10
=92	Lebanon	44	0	-3
=92	Madagascar	44	0	+10
=92	Mozambique	44	0	+1
96	Afghanistan	43	0	+5
=97	Malawi	42	0	+19
=97	Zambia	42	+5	+20
=99	El Salvador	41	0	+5
=99	Swaziland	41	+1	+15
=101	Cambodia	40	+6	+10
=101	Lesotho	40	-2	+9
=101	Mauritius	40	0	+6
=101	Turkmenistan	40	-1	+2
105	Iraq	39	-6	+24
=106	Bolivia	38	+3	+11
=106	Djibouti	38	+1	+17
108	Sri Lanka	37	+1	+6
109	Benin	36	+13	+19
=110	Fiji	35	+1	-1
=110	Honduras	35	+1	+10
=110	Libya	35	+3	+2
113	Oman	33	+1	+8
=114	Bahamas	32	+1	0
=114	Barbados	32	+2	+4
=116	Egypt	30	-3	+11
=116	Ethiopia	30	0	+10

3. GLOBAL NORMS

Rank / 154		Score / 100	Change since 2018	Change since 2012
=69	Zambia	51	+11	+34
=80	Afghanistan	46	0	+12
=80	Benin	46	+29	+35
=80	Burkina Faso	46	+6	+12
=80	Cameroon	46	0	+18
=80	Costa Rica	46	-5	+12
=80	Ecuador	46	0	+12
=80	El Salvador	46	0	+6
=80	Iceland	46	0	+6
=80	Jamaica	46	0	+6
=80	Lesotho	46	-5	+6
=80	Malawi	46	0	+17
=80	Mongolia	46	0	0
=80	Namibia	46	-5	+23
=80	Swaziland	46	0	+12
=80	Tunisia	46	0	+6
=95	Bolivia	40	+6	+17
=95	Botswana	40	-6	+11
=95	Central African Republic	40	0	0
=95	Congo (Dem. Rep. of)	40	0	0
=95	Djibouti	40	0	+17
=95	Fiji	40	0	0
=95	Guatemala	40	0	+6
=95	Lebanon	40	0	0
=95	Nicaragua	40	0	+6
=95	Seychelles	40	0	0
=105	Comoros	34	0	0
=105	Honduras	34	0	+6
=105	Mozambique	34	0	0
=105	Myanmar	34	0	+23
=105	Oman	34	0	+6
=105	Sri Lanka	34	0	0
=105	Sudan	34	+6	+11
=105	Tanzania	34	0	+5
=105	Togo	34	0	+11
=105	Uganda	34	-6	+5
=105	Yemen	34	0	+11
=116	Burundi	29	0	+6
=116	Chad	29	+12	+12

Overall and category scores and ranks for 2020 are shown.
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= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

4. DOMESTIC COMMITMENTS AND CAPACITY

Rank / 154		Score / 100	Change since 2018	Change since 2012
=73	Kuwait	74	0	+65
=73	Lebanon	74	0	0
=73	Morocco	74	0	+8
=73	Qatar	74	0	0
=73	Rwanda	74	0	0
=73	Saudi Arabia	74	0	+65
=73	Senegal	74	0	+8
=73	Seychelles	74	0	0
87	Mozambique	66	0	+9
=88	Ethiopia	43	0	+26
=88	Georgia	43	0	+17
=88	Iraq	43	0	+26
=88	Kyrgyz Republic	43	0	+26
=88	Malawi	43	0	+43
=88	Malaysia	43	0	+26
=94	Bolivia	34	0	+8
=94	Colombia	34	0	+8
=94	Djibouti	34	0	+25
=94	Dominican Republic	34	0	+17
=94	El Salvador	34	0	+8
=94	Honduras	34	0	+17
=94	Madagascar	34	0	+17
=94	Mauritius	34	0	+17
=94	Panama	34	0	+8
=94	Sierra Leone	34	0	+17
=94	Solomon Islands	34	0	+17
=94	Sri Lanka	34	0	+17
=94	Syria	34	0	+17
=94	Turkmenistan	34	0	+8
=94	Venezuela	34	0	0
=94	Vietnam	34	0	+17
=110	Barbados	26	0	+9
=110	Cambodia	26	0	+9
=110	Central African Republic	26	0	+17
=110	Egypt	26	0	+9
=110	Laos	26	0	+9
=110	Lesotho	26	0	+26
=110	Myanmar	26	0	+9
=110	Swaziland	26	0	+26

5. RISK ENVIRONMENT

Rank / 154		Score / 100	Change since 2018	Change since 2012
=78	Indonesia	43	-4	+7
=78	Tanzania	43	+2	+2
=81	Benin	42	0	+5
=81	Montenegro	42	0	+8
=81	Timor-Leste	42	-3	+6
=84	Brazil	41	-2	-6
=84	Guinea-Bissau	41	+5	+5
=86	El Salvador	40	+1	0
=86	Moldova	40	+2	+6
=86	Peru	40	-2	+7
=86	Serbia	40	0	+5
90	Albania	39	-1	+7
=91	Azerbaijan	38	0	+9
=91	Bolivia	38	0	0
=91	Liberia	38	+5	+2
=91	Niger	38	0	+13
=91	Tunisia	38	-6	-5
=96	Djibouti	37	+2	+4
=96	Ethiopia	37	-1	-1
=96	Laos	37	-3	0
=99	Algeria	36	-2	-6
=99	Honduras	36	+4	+9
=99	Morocco	36	-3	-2
=99	Mozambique	36	+1	-4
=99	Nepal	36	+1	+13
=104	Burkina Faso	35	-3	+10
=104	Ecuador	35	-4	+10
=104	Macedonia	35	-3	+2
=104	Malawi	35	-1	-5
=104	Mexico	35	0	+1
=104	Papua New Guinea	35	+2	+3
=104	Sierra Leone	35	+2	+9
=111	Angola	34	0	-4
=111	Côte d'Ivoire	34	+3	-1
=111	Togo	34	+5	+10
=111	Turkey	34	-6	-4
=115	Armenia	33	0	+1
=115	Comoros	33	+1	-4
=115	Guinea	33	+6	+13

Overall and category scores and ranks for 2020 are shown.
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= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

OVERALL SCORE

Rank / 154		Score / 100	Change since 2018	Change since 2012
=116	Myanmar	30	-1	+15
=116	Solomon Islands	30	+1	+7
=120	Comoros	29	0	+4
=120	Sierra Leone	29	0	+10
=120	Togo	29	+1	+10
=123	Central African Republic	28	0	+2
=123	Trinidad and Tobago	28	+1	+2
=125	Laos	27	-1	+5
=125	Tonga	27	+1	+1
=127	Bhutan	26	0	+4
=127	Brunei	26	0	-1
=127	Guyana	26	+1	+2
=127	Sudan	26	+2	+8
131	Vanuatu	25	+1	+7
=132	Nepal	24	+2	+8
=132	Venezuela	24	+2	+2
=134	Burundi	23	0	+7
=134	Congo (Brazzaville)	23	-1	+15
=134	Guinea-Bissau	23	+1	+4
=137	Gambia	22	+3	+6
=137	Haiti	22	0	+3
=137	Liberia	22	+9	+11
=140	Belize	21	+1	0
=140	Guinea	21	+1	+8
=140	São Tomé and Príncipe	21	+3	+10
=140	Syria	21	+6	+10
=140	Timor-Leste	21	-1	+7
=145	Chad	20	+5	+8
=145	Samoa	20	+2	+2
=145	Suriname	20	0	0
=145	Zimbabwe	20	+2	+9
149	Yemen	18	0	+4
=150	Angola	16	0	-1
=150	Papua New Guinea	16	0	+3
152	Equatorial Guinea	15	+1	+3
153	Eritrea	13	+1	+1
154	Somalia	7	+3	+6

3. GLOBAL NORMS

Rank / 154		Score / 100	Change since 2018	Change since 2012
=116	Rwanda	29	0	0
=116	Taiwan	29	0	+6
120	Mauritius	28	0	0
=121	Bahamas	23	0	0
=121	Congo (Brazzaville)	23	0	+23
=121	Egypt	23	-5	+12
=121	Guinea-Bissau	23	0	0
=121	Guyana	23	0	0
=121	Haiti	23	0	0
=121	Laos	23	0	+6
=121	Liberia	23	+17	+17
=121	Nepal	23	+6	+6
=121	Sierra Leone	23	0	+6
=121	Syria	23	+12	+12
=121	Venezuela	23	+6	+12
=121	Zimbabwe	23	+6	+12
=134	Cape Verde	17	0	0
=134	Ethiopia	17	0	+6
=134	Guinea	17	0	0
=134	Solomon Islands	17	0	0
=134	Tonga	17	0	0
=134	Trinidad and Tobago	17	0	0
=140	Angola	11	0	0
=140	Equatorial Guinea	11	0	0
=140	Gambia	11	0	0
=140	Vanuatu	11	0	+11
=144	Barbados	6	0	0
=144	Belize	6	0	0
=144	Bhutan	6	0	0
=144	Brunei	6	0	0
=144	Papua New Guinea	6	0	0
=144	Samoa	6	0	0
=144	São Tomé and Príncipe	6	0	0
=144	Somalia	6	+6	+6
=144	Suriname	6	0	0
=144	Timor-Leste	6	0	0
154	Eritrea	0	0	0

Overall and category scores and ranks for 2020 are shown.
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= denotes tie in rank.

THEFT: SUPPORT GLOBAL EFFORTS *(cont'd)*

4. DOMESTIC COMMITMENTS AND CAPACITY

Rank / 154		Score / 100	Change since 2018	Change since 2012
=110	Thailand	26	0	+9
=110	Timor-Leste	26	0	+17
=110	Tonga	26	0	0
=110	Trinidad and Tobago	26	0	0
=110	Vanuatu	26	0	0
=110	Zambia	26	0	+17
=124	Belize	17	0	0
=124	Benin	17	0	+8
=124	Bhutan	17	0	0
=124	Brunei	17	0	0
=124	Burundi	17	0	+17
=124	Comoros	17	0	+17
=124	Congo (Brazzaville)	17	0	+17
=124	Eritrea	17	0	+8
=124	Fiji	17	0	-9
=124	Gambia	17	0	+8
=124	Guinea	17	0	+17
=124	Haiti	17	0	+8
=124	Libya	17	0	0
=124	Nepal	17	0	+8
=124	Oman	17	0	+8
=124	Papua New Guinea	17	0	+8
=124	Samoa	17	0	0
=124	São Tomé and Príncipe	17	0	+17
=124	Sudan	17	0	+8
=124	Suriname	17	0	0
=124	Togo	17	0	+8
=124	Zimbabwe	17	0	+17
=146	Angola	9	0	0
=146	Bahamas	9	0	0
=146	Chad	9	0	+9
=146	Equatorial Guinea	9	0	+9
=146	Guinea-Bissau	9	0	+9
=146	Guyana	9	0	0
=146	Liberia	9	0	+9
=146	Somalia	9	0	+9
=146	Yemen	9	0	0

5. RISK ENVIRONMENT

Rank / 154		Score / 100	Change since 2018	Change since 2012
=115	Madagascar	33	+1	-11
=115	Philippines	33	0	+7
120	Bosnia and Herzegovina	31	+2	-5
=121	Congo (Brazzaville)	30	-4	-1
=121	Eritrea	30	+2	-6
=121	Mauritania	30	-6	-5
=121	Uganda	30	-6	-8
125	Guatemala	29	+1	+4
=126	Equatorial Guinea	28	+2	+2
=126	Haiti	28	+1	+3
=126	Kyrgyz Republic	28	-1	-1
=126	Myanmar	28	-3	+7
=126	Turkmenistan	28	-1	0
=126	Uzbekistan	28	+5	+10
=132	Bangladesh	27	-4	+6
=132	Cambodia	27	+2	+1
=132	Nicaragua	27	0	-3
135	Mali	26	+5	+2
136	Cameroon	24	+1	-4
=137	Kenya	22	+2	-8
=137	Nigeria	22	+2	+7
=137	Tajikistan	22	-3	-2
=140	Burundi	21	+2	0
=140	Sudan	21	-1	+2
142	Zimbabwe	18	-2	-6
=143	Chad	17	0	-1
=143	Congo (Dem. Rep. of)	17	+6	+4
=143	Lebanon	17	+1	-9
=146	Ukraine	14	-3	-16
=146	Venezuela	14	-2	-13
148	Central African Republic	11	+2	-9
149	Somalia	9	+2	+5
150	Libya	8	+3	-12
=151	Afghanistan	3	0	0
=151	Iraq	3	-11	-8
=153	Syria	0	0	-3
=153	Yemen	0	0	-4

Overall and category scores and ranks for 2020 are shown.
All countries and areas are scored 0–100, where 100 = most favorable nuclear materials security conditions.
= denotes tie in rank.

SABOTAGE: PROTECT FACILITIES

OVERALL SCORE

Rank / 47		Score / 100	Change since 2018	Change since 2016
1	Australia	92	+1	+11
2	Canada	90	0	+9
3	Finland	89	0	+4
4	United Kingdom	88	+1	+7
=5	Germany	84	+3	+12
=5	Hungary	84	-1	+6
=7	Netherlands	83	+1	+8
=7	United States	83	0	+6
=9	Czech Republic	82	+1	+7
=9	Japan	82	+1	+6
=9	Romania	82	+1	+3
=9	Sweden	82	+1	+7
=9	Switzerland	82	+3	+10
=14	Norway	81	+3	+10
=14	Slovenia	81	+2	+8
16	Belgium	80	+3	+6
17	Poland	78	0	+6
=18	France	77	-1	+3
=18	South Korea	77	0	+7
=18	United Arab Emirates	77	n/a	n/a
21	Bulgaria	75	+8	+11
=22	China	74	+1	+19
=22	Spain	74	0	+8
24	Slovakia	73	+4	+7
=25	Indonesia	69	0	+7
=25	Kazakhstan	69	+1	+13
27	Argentina	68	-2	+6
28	Armenia	67	0	+6
29	Ukraine	65	0	+8
30	Russia	64	+1	+4
31	Israel	61	-1	+5
32	Chile	60	+2	+8
33	Pakistan	58	+5	+12
34	Morocco	57	+1	+8
35	South Africa	56	+1	0
36	Uzbekistan	55	+2	+5
37	Mexico	54	+1	+11
=38	India	53	0	+7
=38	Jordan	53	n/a	n/a
=38	Taiwan	53	0	+2
41	Peru	52	+1	+4
42	Brazil	47	0	+1
43	Bangladesh	45	+1	+8
44	Algeria	42	-2	+2
45	Egypt	40	-2	+5
46	Iran	21	0	+1
47	North Korea	17	+1	+1

1. NUMBER OF SITES

Rank / 47		Score / 100	Change since 2018	Change since 2016
=1	Algeria	100	0	0
=1	Armenia	100	0	0
=1	Australia	100	0	0
=1	Bangladesh	100	0	0
=1	Bulgaria	100	0	0
=1	Chile	100	0	0
=1	Egypt	100	0	0
=1	Israel	100	0	0
=1	Jordan	100	n/a	n/a
=1	Mexico	100	0	0
=1	Morocco	100	0	0
=1	Peru	100	0	0
=1	Poland	100	0	0
=1	Slovenia	100	0	0
=1	United Arab Emirates	100	n/a	n/a
=1	Uzbekistan	100	0	0
=17	Argentina	80	0	0
=17	Brazil	80	0	0
=17	Czech Republic	80	0	0
=17	Finland	80	0	0
=17	Hungary	80	0	0
=17	Indonesia	80	0	0
=17	Iran	80	0	0
=17	Kazakhstan	80	0	0
=17	Netherlands	80	0	0
=17	North Korea	80	0	0
=17	Norway	80	0	0
=17	Pakistan	80	0	0
=17	Romania	80	0	0
=17	Slovakia	80	0	0
=17	South Africa	80	0	0
=32	Belgium	60	0	0
=32	Canada	60	0	0
=32	India	60	0	0
=32	South Korea	60	0	0
=32	Spain	60	0	0
=32	Sweden	60	0	0
=32	Switzerland	60	0	0
=32	Taiwan	60	0	0
=32	Ukraine	60	0	0
=41	China	40	0	0
=41	Germany	40	0	0
=41	United Kingdom	40	0	0
=44	France	20	0	0
=44	Japan	20	0	0
=44	Russia	20	0	0
47	United States	0	0	0

2. SECURITY AND CONTROL MEASURES

Rank / 47		Score / 100	Change since 2018	Change since 2016
1	United Kingdom	95	0	+11
2	United States	88	0	+3
=3	Australia	87	0	+26
=3	Canada	87	0	+10
5	Finland	86	+3	+5
6	Hungary	83	0	0
7	Romania	80	0	0
8	China	79	0	+36
=9	Bulgaria	77	+16	+20
=9	Germany	77	0	+10
11	Czech Republic	74	0	+9
12	Japan	73	0	+2
13	Belgium	72	+9	+11
=14	Netherlands	69	0	+5
=14	Slovenia	69	+4	+6
=14	Switzerland	69	0	0
17	Taiwan	68	+2	+4
18	Russia	67	0	0
=19	South Korea	66	0	+4
=19	Ukraine	66	0	+7
=21	Poland	65	+4	+4
=21	United Arab Emirates	65	n/a	n/a
=23	Armenia	63	0	+8
=23	Sweden	63	0	+2
25	France	59	0	0
=26	Pakistan	56	+15	+22
=26	Slovakia	56	+4	+4
28	Spain	55	0	+6
=29	Indonesia	53	0	0
=29	Kazakhstan	53	0	+10
31	India	52	0	+7
32	Norway	49	0	+4
33	Jordan	46	n/a	n/a
=34	Argentina	45	0	0
=34	Peru	45	0	0
36	Brazil	43	+7	+7
37	Uzbekistan	41	0	0
38	South Africa	40	0	0
39	Israel	36	0	0
40	Chile	35	0	0
41	Algeria	32	0	+2
=42	Iran	23	0	0
=42	North Korea	23	0	0
44	Mexico	21	0	0
45	Egypt	19	0	0
46	Bangladesh	17	0	0
47	Morocco	16	0	0

Overall and category scores and ranks for 2020 are shown. All countries and areas are scored 0–100, where 100 = most favorable nuclear security conditions. = denotes tie in rank.

SABOTAGE: PROTECT FACILITIES *(cont'd)*

3. GLOBAL NORMS

Rank / 47		Score / 100	Change since 2018	Change since 2016
1	France	97	0	+13
=2	Australia	94	+4	+13
=2	Canada	94	0	+16
=2	Japan	94	+3	+16
=2	Mexico	94	+3	+23
=2	Poland	94	0	+13
=2	Sweden	94	0	+16
=2	Ukraine	94	0	+19
=2	United States	94	-3	+10
10	Belgium	93	0	+13
=11	Norway	91	0	+16
=11	United Kingdom	91	0	+13
13	Romania	90	+6	+15
=14	Finland	88	-3	+10
=14	Germany	88	0	+19
=14	South Korea	88	-3	+10
17	Indonesia	86	+4	+21
=18	Hungary	85	-3	+10
=18	Kazakhstan	85	0	+14
=18	Netherlands	85	0	+10
=18	Spain	85	0	+13
=22	Chile	84	0	+17
=22	China	84	0	+13
=22	Czech Republic	84	0	+16
=22	Switzerland	84	+5	+30
26	United Arab Emirates	83	n/a	n/a
=27	India	81	0	+12
=27	Jordan	81	n/a	n/a
=29	Morocco	78	+4	+19
=29	Slovenia	78	+3	+12
31	Argentina	76	-4	+11
32	Armenia	74	-3	+10
33	Russia	64	+3	0
34	Slovakia	63	+6	+6
35	Algeria	60	-4	0
=36	Brazil	59	-2	-3
=36	Bulgaria	59	+4	+4
=36	Israel	59	-4	+10
39	Pakistan	58	0	+9
40	Peru	56	-3	+3
41	South Africa	51	0	-3
42	Bangladesh	50	+4	+8
43	Uzbekistan	47	+3	+3
44	Egypt	29	-4	+9
45	Taiwan	22	-3	-3
46	Iran	14	0	+4
47	North Korea	0	0	0

4. DOMESTIC COMMITMENTS AND CAPACITY

Rank / 47		Score / 100	Change since 2018	Change since 2016
=1	Argentina	100	0	+16
=1	Australia	100	0	0
=1	Bulgaria	100	+11	+16
=1	Canada	100	0	+5
=1	Czech Republic	100	0	0
=1	Finland	100	0	0
=1	France	100	0	0
=1	Germany	100	+11	+11
=1	Hungary	100	0	+16
=1	Indonesia	100	0	+15
=1	Israel	100	0	+21
=1	Japan	100	0	0
=1	Kazakhstan	100	0	+21
=1	Netherlands	100	0	+10
=1	Norway	100	+11	+16
=1	Romania	100	0	0
=1	Russia	100	0	+10
=1	Slovakia	100	0	+11
=1	Slovenia	100	0	+11
=1	Spain	100	0	+5
=1	Switzerland	100	+11	+16
=1	United Kingdom	100	0	0
=1	United States	100	0	+11
=24	Armenia	89	0	+5
=24	Belgium	89	0	0
=24	China	89	0	+15
=24	Morocco	89	0	+15
=24	Pakistan	89	0	+11
=24	Poland	89	0	+5
=24	South Korea	89	0	+5
=24	Sweden	89	0	+5
=24	United Arab Emirates	89	n/a	n/a
=24	Uzbekistan	89	0	+15
34	Bangladesh	84	0	+21
=35	South Africa	78	0	0
=35	Ukraine	78	0	+5
37	Egypt	67	0	+15
=38	Chile	58	+11	+16
=38	Mexico	58	0	+21
=38	Peru	58	+11	+16
41	Taiwan	42	0	0
=42	Algeria	36	0	+10
=42	Brazil	36	0	+5
=42	India	36	0	+5
=42	Jordan	36	n/a	n/a
46	Iran	15	0	+10
47	North Korea	0	0	0

5. RISK ENVIRONMENT

Rank / 47		Score / 100	Change since 2018	Change since 2016
=1	Norway	94	+2	+5
=1	Sweden	94	+5	+8
3	Switzerland	88	0	-3
4	Australia	87	0	+3
5	Canada	83	0	+3
6	Finland	82	-2	+1
=7	Germany	81	+3	+11
=7	Netherlands	81	+2	+7
9	Slovenia	77	+1	+6
10	Taiwan	76	-2	+3
11	Japan	75	0	+5
12	Slovakia	74	+4	+5
13	United Kingdom	73	+5	+6
=14	Belgium	71	+2	-3
=14	United Arab Emirates	71	n/a	n/a
=16	Czech Republic	69	+1	+1
=16	South Korea	69	+1	+9
=18	France	66	-6	0
=18	Hungary	66	0	-2
20	Spain	64	+2	+12
=21	Chile	63	-1	-1
=21	United States	63	+4	+2
23	Poland	61	-4	+2
24	Bulgaria	57	+1	+3
=25	Argentina	55	-3	+2
=25	Romania	55	-1	0
27	South Africa	53	+4	+3
28	Israel	48	-1	-10
29	Brazil	47	-4	-2
=30	China	44	+4	+7
=30	Morocco	44	-3	-4
32	Jordan	40	n/a	n/a
=33	Egypt	39	-5	-3
=33	India	39	+1	+6
=33	Mexico	39	+1	+3
36	Peru	37	-4	-1
=37	Indonesia	36	-5	-3
=37	Kazakhstan	36	+6	+12
39	North Korea	34	+5	+8
40	Uzbekistan	32	+3	+2
41	Algeria	31	-2	-2
=42	Armenia	29	+1	+1
=42	Russia	29	+3	+8
44	Bangladesh	21	-2	+5
45	Iran	18	-1	-13
46	Pakistan	16	0	+2
47	Ukraine	14	-2	0

Overall and category scores and ranks for 2020 are shown. All countries and areas are scored 0–100, where 100 = most favorable nuclear security conditions. = denotes tie in rank.

RADIOLOGICAL

NATIONAL MEASURES				
		No or no data available	Yes	
Regulatory Oversight	Does the country maintain a radioactive source regulatory oversight body?	19%	81%	
Security Measures	Are there regulations that require security measures to be in place to protect radioactive sources?	44%	56%	
State Registry	Does the state maintain a registry of radioactive sources?	64%	36%	
Inspection Authority	Does the state have authority to inspect facilities with radioactive sources?	49%	51%	
Export Licenses	Are there licensing requirements for exporting IAEA Category 1 sources?	55%	45%	
GLOBAL NORMS				
		No	Yes	
IAEA Code of Conduct Status	Has the state made a political commitment and notified the IAEA of their intent to abide by the Code of Conduct on the Safety and Security of Radioactive Sources?	22%	78%	
	Has the state notified the IAEA of their intent to abide by the Guidance on the Import and Export of Radioactive Sources?	32%	68%	
	Has the state nominated a Point of Contact to facilitate imports and exports of radioactive source material?	19%	81%	
	Has the state made available their responses to the IAEA Importing and Exporting States Questionnaire?	40%	60%	
	Has the state notified the IAEA of their commitment to implement the Guidance on the Management of Disused Radioactive Sources?	79%	21%	
International Participation	Does the state participate in the Global Initiative to Combat Nuclear Terrorism (GICNT)?	51%	49%	
	Did the state send an official delegation to the 2018 International Conference on the Security of Radioactive Material?	59%	41%	
International Conventions	Is the country a state party to the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT)?	39%	61%	
	Is the country a state party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management?	54%	46%	
	Is the country a state party to the Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency?	40%	60%	

RADIOLOGICAL *(cont'd)*

COMMITMENT AND CAPACITY TO ADOPT ALTERNATIVE TECHNOLOGIES

		No	Yes
Intent	Has the state subscribed to INFCIRC/910?	82%	18%

		No or no data available	Yes
Implementation	Has the country publicly declared a regulatory requirement, policy, or commitment to implementing alternative technology to replace high-activity radioactive sources?	94%	6%

		No data available	Frequent power outages (80th–99th percentile)	60th–79th percentile	40th–59th percentile	20th–39th percentile	Infrequent power outages (0–19th percentile)
Capacity	What is the average percentage of businesses experiencing power outages each month?	26%	15%	15%	15%	14%	15%

		No data available	Few people with degrees (0–19th percentile)	20th–39th percentile	40th–59th percentile	60th–79th percentile	Many people with degrees (80th–99th percentile)
	What percentage of the population over 25 holds a tertiary degree or higher?	39%	13%	12%	13%	12%	13%

RISK ENVIRONMENT

		No data available	Very high	High	Moderate	Low	Very low
Political Stability	What is the risk of significant social unrest during the next two years?	4%	8%	24%	39%	19%	5%

		No data available	Not clear, established, or accepted	Two of the three criteria are absent	One of the three criteria is absent	Clear, established, and accepted	Very clear, established, and accepted
	How clear, established, and accepted are constitutional mechanisms for the orderly transfer of power from one government to another?	5%	16%	23%	18%	22%	15%

		No data available	Very high	High	Moderate	Low	No threat
	Is there a risk that international disputes/ tensions will negatively affect the polity during the next two years?	5%	11%	19%	32%	30%	3%

RADIOLOGICAL *(cont'd)*

		No data available	Territorial conflict; opposition has effective control over a region or regions	Sporadic and incursive conflict	Incursive conflict; government remains in control, but opposition engages in frequent armed incursions	Sporadic conflict; government control is firm, but opposition engages in isolated incidents of violence	No armed conflict exists
Political Stability	Is this country presently subject to armed conflict, or is there at least a moderate risk of such conflict during the next two years?	5%	6%	8%	10%	30%	42%
		No data available	**Very high**	**High**	**Moderate**	**Low**	**Very low**
	Are violent demonstrations or violent civil/labor unrest likely to occur during the next two years?	5%	7%	20%	28%	33%	7%
		No data available	**Very low**	**Low**	**Moderate**	**High**	**Very high**
	How effective is the country's political system in formulating and executing policy?	54%	2%	13%	19%	11%	2%
	What is the quality of the country's bureaucracy and its ability to carry out government policy?	5%	18%	38%	26%	9%	5%
		No data available	**Very high**	**High**	**Moderate**	**Low**	**Very low**
Pervasiveness of Corruption	How pervasive is corruption among public officials?	5%	23%	30%	22%	12%	10%
		No data available	**Very high**	**High**	**Moderate**	**Low**	**Very low**
Illicit Activities by Non-State Actors	How likely is it that domestic or foreign terrorists will attack with a frequency or severity that causes substantial disruption to business operations?	3%	6%	6%	24%	39%	21%
	How likely is organized crime to be a problem for government and/or business?	0%	10%	19%	31%	32%	8%
	How many firearms were seized during the interdiction of illicit weapons trafficking?	51%	10%	10%	10%	10%	10%

About the Nuclear Security Index

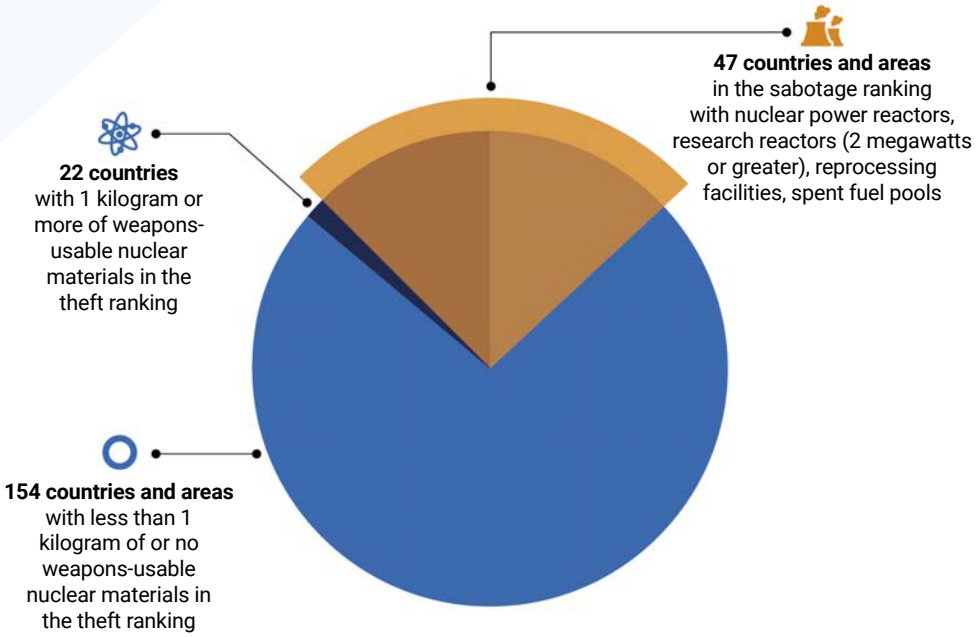
The NTI Index is a groundbreaking assessment of nuclear security conditions in countries around the world. It promotes actions to strengthen nuclear security and build confidence, and it highlights progress and trends over time. Published biennially since 2012, the NTI Index includes two theft rankings and one sabotage ranking:

- **Theft: Secure Materials**—A ranking of 22 countries with 1 kilogram or more of weapons-usable nuclear materials—highly enriched uranium (HEU) and separated plutonium—to assess actions to secure materials against theft
- **Theft: Support Global Efforts**—A ranking of 153 countries and Taiwan[1] with less than 1 kilogram of or no weapons-usable nuclear materials to assess actions to support global nuclear security efforts
- **Sabotage: Protect Facilities**—A ranking of 46 countries and Taiwan with or without weapons-usable nuclear materials, but which have nuclear facilities such as nuclear power reactors and research reactors, to assess actions to protect nuclear facilities against sabotage

The NTI Index ... promotes actions to strengthen nuclear security and build confidence, and it highlights progress and trends over time.

[1] Taiwan is included in the theft ranking for countries and areas without nuclear materials and the sabotage ranking due to its autonomous nuclear regulatory structure. Given Taiwan's status, "About the Nuclear Security Index" describes the number of countries and areas in the NTI Index as "153 countries and Taiwan" and "46 countries and Taiwan" in the theft and sabotage rankings, respectively. Further references to numbers of countries in the report and website include Taiwan. For more on how Taiwan is treated in the Index, see the full EIU methodology at www.ntiindex.org.

Figure 1: Countries in the NTI Index



WHY AN INDEX?

Nuclear materials that could be used to build a nuclear bomb are located in 22 countries around the world. And 154 other countries and areas could serve as safe havens, staging grounds, or transit routes for illicit nuclear activities. Nuclear facilities that could be at risk of sabotage, leading to release of radioactive materials, exist in 47 countries and areas.[2] Terrorist groups interested in committing acts of nuclear terrorism continue to pose risks around the world, and their capabilities continue to evolve. Constant vigilance by nuclear operators, governments, and international organizations will be needed to keep pace with evolving threats.

The international community has seen significant progress on nuclear security over the past two decades, including as a result of the Nuclear Security Summits. Since 2012, the NTI Index has identified significant gaps and challenges in global nuclear security and demonstrated that continued prioritization of nuclear security at national and international levels is critical for preventing potentially catastrophic outcomes.

The NTI Index was developed to promote country actions to strengthen nuclear security, track progress, identify nuclear security priorities, and build accountability. Keeping track of nuclear security is even more important now that the summits have ended. With the first three editions of the NTI Index timed for release before the 2012, 2014, and 2016 summits, the NTI Index was able to track progress, including actions taken to fulfill summit commitments, in an era when global leadership and political attention on nuclear security were at their highest levels.

In the absence of the driving force of the summits, the NTI Index can serve a much-needed forcing function for continued progress by highlighting evolutions in best practices and priorities, raising red flags where gaps and challenges remain unaddressed, and promoting action and accountability. The NTI Index also provides an assessment of the health, sustainability, and comprehensiveness of the global nuclear security architecture, including the International Atomic Energy Agency (IAEA) and international treaties.

[2] Belarus is preparing to launch its new nuclear power reactor now that the initial fuel load has been delivered. The fuel delivery was completed after research for the 2020 edition of the NTI Index closed and therefore was not included in this year's sabotage ranking. It will be added to the sabotage ranking in the next edition of the NTI Index.

DEVELOPMENT OF THE INDEX

The Economist Intelligence Unit (EIU) conducts all research using publicly available information, such as national laws and regulations, treaty databases, and other primary and secondary sources. The NTI Index does not conduct reviews of on-the-ground security but rather assesses national-level actions, such as the comprehensiveness of a country's regulatory framework, its commitment to global norms, and its participation in global initiatives.

Countries with weapons-usable nuclear materials and/or nuclear facilities have an opportunity to review and comment on the NTI Index data before the Index is published so that it is as accurate and up-to-date as possible. This data confirmation process increases transparency and provides a foundation for productive engagement with governments on the Index results.

The NTI Index is designed to represent international perspectives about nuclear security priorities. To help achieve this, decisions about the elements of the NTI Index frameworks and how those elements are prioritized through weighting are made with input from an international panel of experts.

THE FRAMEWORKS

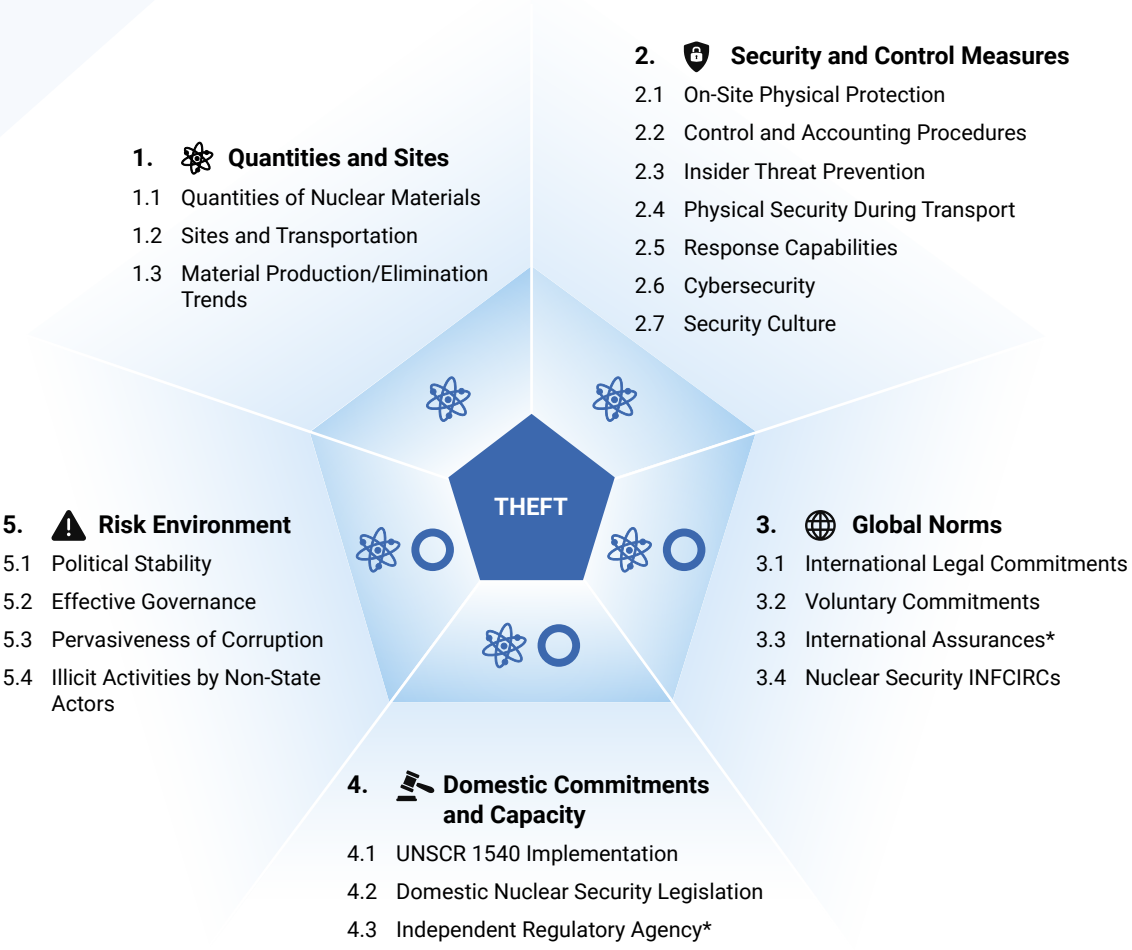
The frameworks for the three rankings differ slightly from each other but, in general, include a variety of factors that impact a country's nuclear security conditions:

- **Quantities and Sites:** This category captures the quantity of nuclear materials, the number of sites, and the frequency of transport in a particular country, all related to the risk that materials could be stolen. In addition, it includes a leading indicator as to whether the country is increasing or decreasing its overall material quantities. This category is not included in the theft ranking for countries without materials. The sabotage ranking looks at only the number of sites, not quantities of material.
- **Security and Control Measures:** This category encompasses the core activities directly related to protection and accounting of nuclear materials. It includes indicators of physical protection, control and accounting, insider threat prevention, security during transport, response capabilities, cybersecurity, and security culture. This category is not included in the theft ranking for countries without materials.
- **Global Norms:** This category includes actions that contribute to the establishment of global norms for nuclear materials security. It includes important international legal commitments, voluntary participation in a number of global initiatives, international assurances, and nuclear security information circulars (INFCIRCs).
- **Domestic Commitments and Capacity:** This category includes actions that indicate how well a country has implemented its international commitments and a country's capacity to do so. This category includes the extent of United Nations Security Council Resolution 1540 implementation, the status of legislation to implement the amended Convention on the Physical Protection of Nuclear Material (CPPNM), and the presence of an independent regulatory agency.
- **Risk Environment:** This category includes contextual factors, such as political stability, effective governance, corruption, and illicit activities by non-state actors that can affect a country's ability to implement effective security and regulatory oversight.

Countries are scored on a scale of 0 to 100, where 100 is the top score. Weights are applied to categories and indicators to reflect relative priorities. Overall scores are calculated on the basis of the weighted sum of category scores. Category scores are the weighted sum of the indicator scores within that category. Indicator scores are the sum of the subindicator scores normalized on a scale of 0 to 100. A low score is between 0 and 33, a medium score is between 34 and 66, and a high score is between 67 and 100.

The NTI Index assesses the risk of theft of weapons-usable nuclear materials and the risk of sabotage of nuclear facilities. It does not assess a country's actions related to smuggling and illicit trafficking, non-proliferation, or disarmament.

Figure 2: How the Theft Ranking Measures Nuclear Security Conditions



The theft ranking assesses countries with weapons-usable nuclear materials based on these five categories. Countries and areas without materials are assessed on three categories.

KEY

Countries with weapons-usable nuclear materials

Countries and areas without weapons-usable nuclear materials

*This indicator does not apply to countries without nuclear materials.

Note: For information about data sources used for scoring, see the full EIU Methodology at www.ntiindex.org.

Figure 3: How the Sabotage Ranking Measures Nuclear Security Conditions

The sabotage ranking assesses countries with nuclear facilities based on these five categories.

Note: For information about data sources used for scoring, see the full EIU Methodology at www.ntiindex.org.

Radioactive sources in teletherapy devices could be stolen and used to build dirty bombs.

IMPORTANT NEW ELEMENTS IN 2020

For the 2020 edition, NTI took a fresh approach to the NTI Index to account for progress on nuclear security and new tools available to address risks. Among the key changes across all three rankings are the following:

- In areas where most countries excelled, questions were adjusted to raise the bar to promote continuous improvement.
- New indicators were added to the rankings for countries with nuclear materials and/or nuclear facilities to reflect newer priorities, such as Security Culture. Existing high-priority indicators, such as Insider Threat Prevention and Cybersecurity, were strengthened by adding new subindicators.
- Credit is given to countries that use new tools for nuclear security cooperation and confidence building. For example, those actions include subscribing to nuclear security INFCIRCs, publishing reports from IAEA International Physical Protection Advisory Service (IPPAS) missions, and publicly reporting on nuclear security progress.
- Key elements of the international architecture, such as the IAEA and the amended CPPNM, are given higher prominence by adding new subindicators. Those subindicators include (a) participation in IAEA activities such as the Incident and Trafficking Database and the Nuclear Security Guidance Committee, (b) representation at the IAEA International Conference on Nuclear Security at the ministerial level, and (c) submission of information to the IAEA on laws and regulations as required by the amended CPPNM.

Also new in 2020 is a first-of-its-kind Radioactive Source Security Assessment, released in conjunction with the NTI Index. It assesses national measures in 176 countries to prevent a dirty bomb.

ADDITIONAL RESOURCES

The NTI Index website (www.ntiindex.org) has several resources for users depending on their interests. This report is available for download, along with a more detailed EIU methodology. All data are available for download in interactive data models, which include underlying scores as well as tools to better understand the data.

Detailed country profiles are also available in the interactive data models and on the website to offer a deeper dive into a country's performance. The website includes an interactive tool that simulates a country's scores if it were to take recommended actions.

Radioactive Source Security Assessment

There is no existing global assessment of the security around radioactive sources. To fill this gap, this report includes a separate, first-of-its-kind Radioactive Source Security Assessment of national policies, commitments, and actions to secure radioactive sources and prevent a dirty bomb in 176 countries. This new assessment also uses publicly available information, but it does not score or rank countries.

THE RISK OF A DIRTY BOMB

Thousands of radioactive sources used in countries around the world for medical, industrial, agricultural, research, or other purposes could be stolen and used in a dirty bomb. Not only are these sources widely used, but they are housed in locations that lack high levels of security, such as hospitals and universities and other industrial settings. Because a dirty bomb is relatively easy to construct, its use is more likely than a nuclear weapon. It would not result in large numbers of deaths or injuries, but the consequences would still be serious: large-scale economic costs stemming from cleanup and inability to use the affected area for years, environmental damage, and significant psychological consequences.

Thousands of radioactive sources used in countries around the world for medical, industrial, agricultural, research, or other purposes could be stolen and used in a dirty bomb.

ABOUT THE RADIOACTIVE SOURCE SECURITY ASSESSMENT

The Radioactive Source Security Assessment aims to do the following:

- Build greater awareness of the importance of securing radioactive sources.
- Catalyze a dialogue about priorities for strengthening radioactive source security.
- Promote progress in securing radioactive sources and in reducing the quantities of the most dangerous radioactive sources and applications, including through the use of alternative technologies.
- Highlight leading practices in radiological security, including supporting global norms.
- Provide a unique resource that sets a baseline understanding of the status of global radiological security.
- Promote reporting, information sharing, and benchmarking of national and international commitments and actions on radiological security.

Unlike the Nuclear Security Index, the new Radioactive Source Security Assessment does not score or rank countries. The methodology also does not involve in-depth country research. Instead, the assessment relies on existing databases and other sources of consolidated information. In future years, NTI may expand the assessment to include scores, ranks, and more in-depth research.

A separate panel of international radiological security experts advised the development of the Radioactive Source Security Assessment.

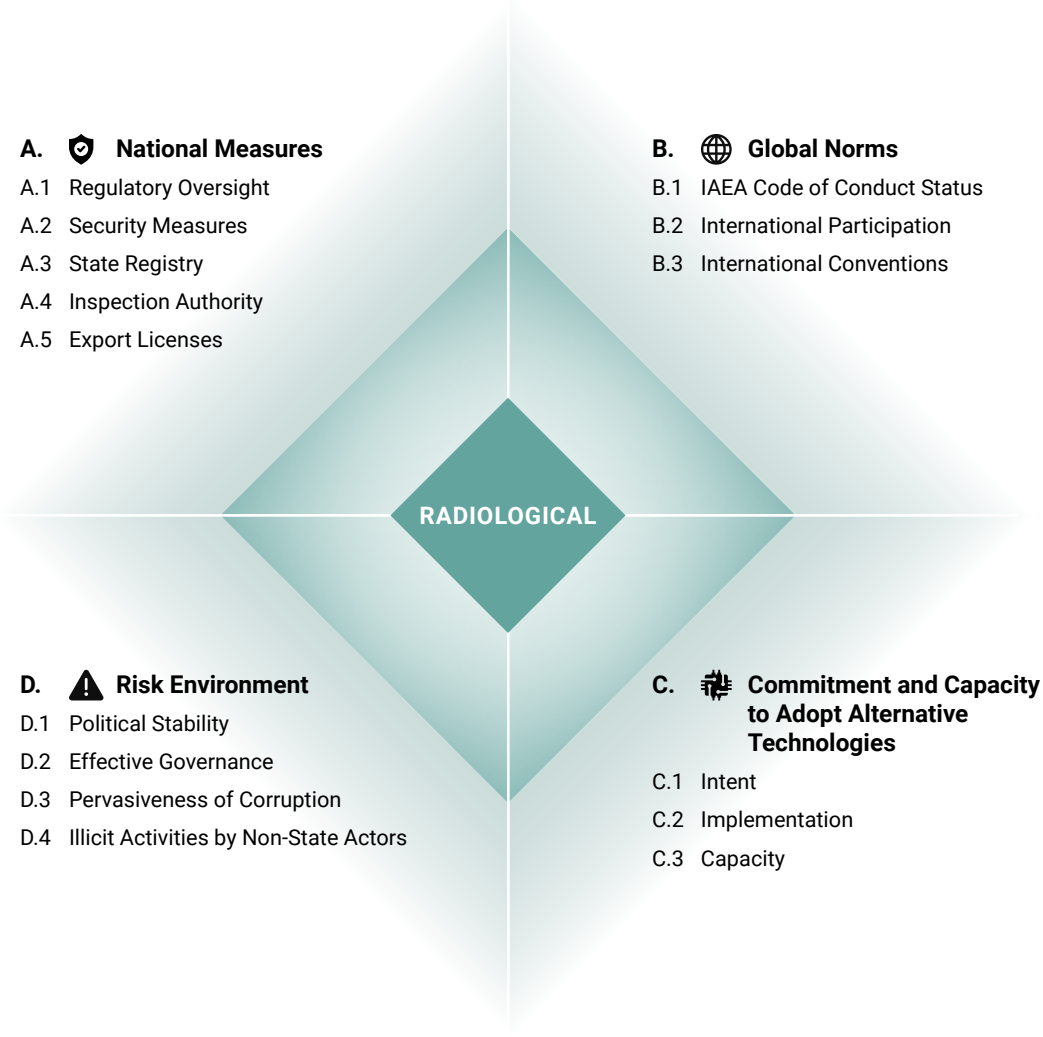
THE FRAMEWORK

The Radioactive Source Security Assessment includes four categories:

- **National Measures:** This category assesses a country's domestic policies, commitments, and actions for managing and securing radioactive sources. It asks (a) whether countries have an independent regulatory body to provide oversight over radioactive sources; (b) whether a country's domestic laws and regulations explicitly require security (not just safety) measures to be in place to protect radioactive sources; (c) whether the country maintains a national registry of radioactive sources, a key step in tracking and accounting for sources at the national level; (d) whether the country has authority to inspect facilities with radioactive sources; and (e) whether there are licensing requirements for the export of International Atomic Energy Agency (IAEA) Category 1 radioactive sources.[3]
- **Global Norms:** This category assesses a country's international commitments and support for global norms around radioactive sources. It examines each country's commitments in the context of the IAEA Code of Conduct on the Safety and Security of Radioactive Sources, including the Supplemental Guidance on the Import and Export of Radioactive Sources and Supplemental Guidance on the Management of Disused Radioactive Sources. It also asks whether a country participates in international organizations or conferences and is a party to key international legal agreements related to radiological security.
- **Alternative Technologies:** This category assesses a country's commitment to supporting the development and implementation of alternative technology to high-activity radioactive sources, as well as each country's capacity to sustainably implement alternative technologies to high-activity radioactive sources.
- **Risk Environment:** Similar to the NTI Index, the Radioactive Source Security Assessment includes indicators of a country's risk environment.

[3] Category 1 sources are radioactive materials that, according to the IAEA, "would be likely to cause permanent injury to a person who handled it, or were otherwise in contact with it, for more than a few minutes." IAEA Category 1 sources are as follows: radioisotope thermoelectric generators (RTGs); irradiators; teletherapy sources; and fixed, multibeam teletherapy (gamma knife) sources. See www-pub.iaea.org/MTCD/publications/PDF/Pub1227_web.pdf.

Framework for the Radioactive Source Security Assessment



See the full EIU methodology at www.ntiindex.org for more information on the methodology for the Radioactive Source Security Assessment.

About NTI and the EIU

NUCLEAR THREAT INITIATIVE

NTI is a nonpartisan, non-profit global security organization focused on reducing nuclear and biological threats imperiling humanity. Founded in 2001 by former U.S. Senator Sam Nunn and philanthropist Ted Turner, who continue to serve as co-chairs, NTI is guided by a prestigious international board of directors. Ernest J. Moniz serves as co-chair and chief executive officer; Joan Rohlfing is president and chief operating officer.

www.nti.org

ECONOMIST INTELLIGENCE UNIT

The Economist Intelligence Unit (EIU) is the research arm of The Economist Group, publisher of *The Economist*. As the world's leading provider of country intelligence, the EIU helps governments, institutions, and businesses by providing timely, reliable, and impartial analysis of economic and development strategies. Through our public policy practice, we provide evidence-based research for policymakers and stakeholders seeking measurable outcomes in fields ranging from technology and finance to energy and health. We conduct research through interviews, regulatory analysis, quantitative modeling, and forecasting, and we display the results through interactive data visualization tools. Through a global network of more than 900 analysts and contributors, the EIU continuously assesses and forecasts political, economic, and business conditions in more than 200 countries.

www.eiu.com

Explore the NTI Nuclear Security Index and the Radioactive Source Security Assessment at www.ntiindex.org

- See profiles for all countries in the NTI Index, including areas for improvement
- Explore how different actions would improve a country's score
- Compare country scores, ranks, and trends
- Review the full methodology, including detailed descriptions of the NTI Index indicators
- Download Excel spreadsheets to analyze all NTI Index data
- Review the Radioactive Source Security Assessment—new in 2020!

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