PROMOTING NUCLEAR ENERGY AND NON-PROLIFERATION

The Contribution of Kazakhstan

Since 1991, the Republic of Kazakhstan has been a leading force for eliminating nuclear weapons while supporting the safe, secure, and peaceful use of nuclear energy. This report looks at the reasons behind the commitment and the role, which Kazakhstan is playing the shape a way ahead in a contested world.

Promoting Nuclear Energy and Non-Proliferation

THE CONTRIBUTION OF KAZAKHSTAN

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EXECUTIVE SUMMARY

Since 1991, the Republic of Kazakhstan has been a leading force for eliminating nuclear weapons while supporting the safe, secure, and peaceful use of nuclear energy. In line with this policy, President Nursultan Nazarbayev and other Kazakhstan officials have destroyed or removed all the nuclear weapons that they inherited from the Soviet Union, joined the Nuclear Non-Proliferation Treaty as a non-nuclear weapons state, worked to keep Iran and North Korea from acquiring nuclear weapons, promoted a Central Asian Nuclear Weapons Free Zone (CANWFZ), and is now leading a global movement against nuclear weapons testing while offering to host the world's first "nuclear fuel bank" in cooperation with the International Atomic Energy Agency.

Meanwhile, though Kazakhstan closed its only nuclear power reactor a few years ago after decades of service, the government and nuclear industry has decided to take advantage of Kazakhstan's natural and technological resources to develop civilian nuclear power as an additional energy source, for both itself and other countries. Through its contributions to the March 2014 Nuclear Security Summit in The Hague and other means, Kazakhstan has strived to make civilian nuclear power production more safe and secure.[2]

Several factors explain why Kazakhstan's government has made nuclear nonproliferation and security a major foreign-policy objective.

First, Kazakhstan suffered from the Soviets' use of Kazakhstan's territory to conduct hundreds of nuclear weapons tests, leaving horrific environmental and human damage. More than one million unprotected people were exposed to radioactive fallout, while some parts of Kazakhstan remain seriously contaminated to this day.

Second, Kazakhstan faces a genuine threat from possible terrorist or criminal efforts to acquire the nuclear material and technologies that are located on or near its territory.[3]

Finally, foreign governments regularly praise Kazakhstan's commitment to nuclear nonproliferation and disarmament achievements, even those foreign government's critical of the country's other policies.

HISTORY

After the Second World War, the Soviet government established important elements of the USSR's new nuclear weapons complex on Kazakhstan's soil. In particular, the Soviet government exploited Kazakhstan's vast steppes to create the world's largest nuclear weapons testing ground at Semipalatinsk. Since then, more than one million people near the site have suffered from cancer, thyroid disease, and other radiological-related maladies. Even today, the life expectancy of the local population lags years behind that of people living in other parts of the country.[4]

The Soviet Union also exploited Kazakhstan's pivotal location at the heart of Eurasia to deploy a robust nuclear-armed strategic missile force that could reach Europe, Asia, and the Middle East as well as eventually

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[2] Many of the country's nonproliferation achievements are recounted in *Building a Nuclear Safe World: The Kazakhstan Way* (Astana: Ministry of Foreign Affairs of Kazakhstan, 2014), http://www.kazesp.org/pdf/book_nuclear_safe_world.pdf

[3] Alex Walters, "Kazakh President Plays Leading Role in Nuclear Security Summit," Kazakhstan Edge, http://www.kzedge.com/kazakh-president-plays-leading-role-in-nuclear-security-summit.html.

[4] Elena Kosolapova, "Kazakhstan reckon pros and cons of nuclear power plant construction," *Trend*, March 4, 2014, http://en.trend.az/capital/business/2248961.html.

more distant targets in the United States. Furthermore, Kazakhstan was also forced to contribute to the Soviet Union's nuclear weapons and nuclear energy programs by mining and processing its extensive stockpiles of natural uranium.

When Kazakhstan became an independent country in 1991, the new government acted expeditiously to rid Kazakhstan of its horrific WMD Soviet legacy. At independence, Kazakhstan found itself the unhappy owner of one of the world's largest nuclear arsenals, including more than 1,400 nuclear warheads for use on missiles and bombers. If Kazakhstan had retained these weapons, the new country would have possessed the fourth-largest nuclear force in the world.[5] Instead of keeping the weapons as a security guarantee or offering them for sale to would-be nuclear weapons states or terrorists, Kazakhstan eliminated its nuclear and other WMD-related items or removed them to the Russian Federation and the United States. In December 1994, Kazakhstan signed the Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty or NPT) as a non-nuclear-weapon state. In return for renouncing Astana's nuclear arsenal, Britain, Russia, and the United States offered Kazakhstan formal security guarantees.[6]

An explosion in 2000 seals a nuclear test tunnel at the Soviet-era Semipalatinsk Test Site in Kazakhstan. Experts are surveying soil across the Semipalatinsk steppe to locate and secure elements that might pose a remaining security risk (AP Photo/Michael Rothbart).

By the following year, Kazakhstan had removed all nuclear warheads and strategic delivery systems from its territory and destroyed all nuclear missile silos associated with these weapons—becoming the first former Soviet republic to abandon its nuclear arsenal, followed by Ukraine, where the nuclear disarmament issue was more contested domestically and required greater international pressure to achieve.[7]

On August 29, 1991, four months before the collapse of the Soviet Union, President Nazarbayev signed a decree shutting Semipalatinsk range, making Kazakhstan the first country in history to close a nuclear testing site. The decree also prohibited further nuclear weapons testing on Kazakhstan's territory. Semipalatinsk's shutdown has been followed by the closing of the world's other major test sites in Nevada, Novaya Zemlya, Lop Nur and Moruroa.

But due to Semipalatinsk's enormous size and extensive use, the global community had to undertake special measures to secure the dangerous nuclear material located there. In particular, Russia and the United States collaborated with the International Atomic Energy Agency (IAEA) to help Kazakhstan secure the storage sites by destroying or sealing off complexes and reinforcing measures to keep scavengers and others away from the dangerous nuclear material there.

Presidential Decree No. 779 (May 15, 1992) established a National Nuclear Center (NNC) at the former Semipalatinsk Test Site. The Center has several research reactors and thousands of employees who work at half dozen smaller research institutions. The Atomic Energy Committee of the Ministry of Energy of Kazakhstan is the national regulatory body for licensing nuclear reactors and ensuring their safety, security, and compliance with national and international standards and IAEA safeguards. In cooperation with the NCC, the

[5] Dmitry Kosyrev, "Nuclear-free Kazakhstan: An Example to Follow?," RIA Novosti, August 29, 2007, http://en.rian.ru/analysis/20070829/75634106.html.

[6] Ministry of Foreign Affairs of Kazakhstan, "Kazakhstan I Voprosy Global'noy Bezopastnosti: Razoruzhenie I yadernoe neraspostranenie," http://portal.mfa.kz/portal/page/portal/mfa/ru/content/policy/security/disarmament.

[7] Kazzenova, "Central Asia: Regional Security and WMD Proliferation Threats," and Kazakhstan's Nuclear Disarmament: A Global Model for a Safer World (Washington, DC: Embassy of Kazakhstan and Nuclear Threat Initiative, 2006).

IAEA helped Kazakhstan during the 1990s strengthen its national radiation protection infrastructure, especially for environmental monitoring.[8]

The Kazakhstan government has negotiated a Comprehensive Safeguards Agreement with the IAEA. This basic agreement, which came into force in 1994, allows the agency to monitor all the activities at the country's declared nuclear facilities. In addition, Kazakhstan has also signed the IAEA Additional Protocol, which went into effect in 2007. It grants IAEA personnel the right to monitor a wider range of possible nuclear activities than the standard agreement as well as the right to inspect even undeclared sites where illicit nuclear activities might occur.

Kazakhstan ratified the IAEA-sponsored 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) and is now implementing a pilot project with the IAEA to ensure physical security of uranium during extraction and finalizing efforts to host the world's first low-enriched uranium fuel bank in partnership with the IAEA.[9]

IAEA Director General Yukiya Amano and the Foreign Minister of the Republic of Kazakhstan, Erlan Idrissov, met on 22 August 2013 in Astana during the Director General's visit to Kazakhstan. (Photo: Ministry of Foreign Affairs, Kazakhstan)

During his official visit to Kazakhstan in August 2013, IAEA Director General Yukiya Amano conveyed to the Government "his appreciation for Kazakhstan's resolute commitment to the work of the IAEA." Furthermore, according to the agency, Amano "praised Kazakhstan's crucial contribution to nuclear non-proliferation, disarmament and its collaboration with the Agency in accomplishing its mandate. He also lauded the Kazakh Government's support and cooperation in the field of peaceful applications, in particular in promoting more effective cancer treatment."[10] The IAEA has been assisting Kazakhstan to expand its capacity for soil sampling and analysis in some areas near Semipalatinsk that the government hopes to use for cultivation and other economic applications.[11]

The IAEA, the United States, and other institutions have trained many of Kazakhstan's specialists in nuclear physics, safety, and security. Nuclear nonproliferation has been a cornerstone of Kazakhstan's partnership with the United States, which has provided Kazakhstan with financial assistance to eliminate its nuclear warheads, weapons-grade materials, and supporting infrastructure.

Soon after independence, through "Project Sapphire," Kazakhstan and the United States cooperated to transfer more than 500 kilograms of highly enriched uranium (HEU), stored in insecure conditions at the Soviet-built Ulba Metallurgical Plant in Ust-Kamenogorsk, at the eastern end of the country, to more secure storage at Oak Ridge, Tennessee, in the United States.[12] After gaining the consent of Russia, whose government could

[8]"Working to ensure nuclear security and promote global nuclear nonproliferation," Astana Times March 12, 2014, http://www.astanatimes.com/2014/03/working-ensure-nuclear-security-promote-global-nuclear-nonproliferation/.
[9] "Nuclear Security Summit 2014 National Progress Report: Kazakhstan," March 24, 2014 https://www.nss2014.com/sites/default/files/documents/kazakhstan.pdf.
[10]Aabha Dixit, "IAEA Director General Visits Kazakhstan," IAEA, August 27, 2013, http://www.iaea.org/newscenter/news/2013/dgkazakhstan.htm.

[11]*Ibid.*

[12] John A. Tirpak, "Project Sapphire," Air Force Magazine (August 1995), http://www.afa.org/magazine/Aug1995/0895sapphire.asp.

have scuttled the deal by going public or putting pressure on Kazakhstan, the United States agreed to purchase Kazakhstan's nuclear material in exchange for some aid.[13]

OVERALL SCORE

Rank / 25		Score / 100	Δ
1	Australia	92	+2
2	Canada	88	+6
3	Switzerland	87	–
4	Germany	85	+3
5	Norway	83	+1
6	Poland	82	+1
=7	France	81	+2
=7	Netherlands	81	–
9	Belarus	80	+5
10	Belgium	79	+7
=11	United Kingdom	77	-1
=11	United States	77	-1
=13	Argentina	76	+4
=13	Japan	76	+6
15	Kazakhstan	73	–
16	South Africa	71	-1
17	Italy	70	-1
=18	Russia	66	–
=18	Uzbekistan	66	+5
20	China	64	+1
21	Israel	57	+2
22	Pakistan	46	+3
23	India	41	+1
24	Iran	39	–
25	North Korea	30	–

FIGURE 1 RANKINGS ON THE NUCLEAR THREAT SECURITY LIST. CREDIT: NTI

Foreign Minister Kassym-Jomart Tokayev later stated that the real importance of the transfer for Kazakhstan was not economic but that, "We acted as a state that has joined the Nuclear Nonproliferation Treaty, that understands its responsibilities in the world and that wanted to remove the risk of proliferation."[14] In 2001, Kazakhstan partnered with the U.S.-based Nuclear Threat Initiative (NTI) to implement a pilot project to downgrade 2,897kg of HEU to LEU and not directly usable in nuclear weapons, providing a model for future projects, including a 2006 downblending project with the U.S. Department of Energy.[15]

FIGHTING NUCLEAR TERRORISM AND PROLIFERATION

Kazakhstan has played a prominent role in the global efforts to prevent nuclear terrorism. For example, Kazakhstan has played a leading role in the Global Initiative to Combat Nuclear Terrorism, hosting important meetings and supporting other projects. In April 2008, Kazakhstan's Mazhilis (lower house of parliament) ratified the International Convention for the Suppression of Acts of Nuclear Terrorism, which obliges its States Parties to take steps to avert and punish attempts to use nuclear materials in terrorist acts.[16]

Kazakhstan has also supported UN Security Council Resolution 1540 (2004), which requires all states to refrain from supporting non-state actors seeking to develop, acquire, manufacture, possess, transport, transfer, or use nuclear, chemical or biological weapons and their delivery systems. It further obliges all governments to establish domestic controls to avert the proliferation of nuclear, chemical and biological weapons, and their means of delivery, including by establishing appropriate export controls over related materials and by criminalizing WMD-related proliferation activities. In 2011 and 2014, Kazakhstan hosted seminars on applying these requirements within its region.[17]

Kazakhstan ranks 15th (ahead of Russia and China) on the Nuclear Threat Initiative's Nuclear Materials Security Index, which assesses the safety and security of the nuclear materials of various countries.[18] The country has been updating more domestic laws on nuclear security to comply with IAEA standards. For example, Kazakhstan has created a national register of ionizing radiation sources through a Law "On the Use of Nuclear Energy."

[13] Michael R. Gordon, "Months of Delicate Talks In Kazakhstan Atom Deal," The New York Times, November 24, 1994, http://www.nytimes.com/1994/11/24/world/months-of-delicate-talks-in-kazakhstan-atom-deal.html.
[14] Steven Erlanger, "Kazakhstan Thanks U.S. On Uranium," The New York Times, November 25, 1994, http://www.nytimes.com/1994/11/25/world/kazakhstan-thanks-us-on-uranium.html.
[15] "Working to ensure nuclear security and promote global nuclear nonproliferation," Astana Times March 12, 2014, http://www.astanatimes.com/2014/03/working-ensure-nuclear-security-promote-global-nuclear-nonproliferation/.
[16] "Kazakh Parliament Ratifies UN Nuclear Terrorism Convention," RIA Novosti, April 24, 2008, http://en.rian.ru/world/20080424/105825941.html.

[17] "Working to ensure nuclear security and promote global nuclear nonproliferation," Astana Times March 12, 2014, http://www.astanatimes.com/2014/03/working-ensure-nuclear-security-promote-global-nuclear-nonproliferation/.
[18] The Nuclear Threat Initiative, "Nuclear Materials Security Index" (Washington, D.C., 2014), http://ntiindex.org/behind-the-index/about-the-nti-index/.

Kazakhstan also passed legislation to place more controls on the import and export of radiological sources and has drafted a law on handling radioactive wastes.[19] IAEA members are not legally obliged to follow Agency guidelines regarding the protection of nuclear materials, but countries can make them binding by incorporating them into their domestic legislation. Kazakhstan has pledged to incorporate these guidelines into its national laws.[20]

Since 1995, the International Science and Technology Center (ISTC), based in Moscow, has supported projects with Kazakhstan's former weapons scientists and other technical personnel with WMD-relevant expertise.[21] For example, the ISTC Scientific Advisory Committee organized an energy security seminar in Almaty in October 2013.[22]

The ISTC is an intergovernmental organization connecting scientists from Kazakhstan and other countries of the Commonwealth of Independent States with their peers in Western countries. According to the ISTC, as of 2012, almost 5,000 Kazakhstan scientists have received more than $35 million through ISTC projects.[23] After the Russian Federation indicated that it would end its participation in the ISTC, the Center's Governing Board accepted Kazakhstan's offer, made in response to a U.S. request, to relocate its headquarters to Astana.[24] In June 2014, the ISTC formally began operating at a facility provided by Nazarbayev University.

Representatives of Iran and the P5+1 group of world powers hold nuclear talks in the Kazakh city of Almaty, April 6, 2013.

In 2012, moreover, Kazakhstan joined the Global Partnership against the Spread of Weapons of Mass Destruction. In 2002, the Group of Eight (G8) Industrial States pledged to provide a total of $20 billion over the following decade to support the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction and invited non-member governments to join as partners. The United States offered $10 billion to the Partnership over a 10-year period.

The other G8 members, including Russia through in-kind contributions, promised a comparable sum ('10+10 over 10'). More than 20 additional partners have since joined this multinational institution. Most of this money

[19] Office of the Press Secretary, "Fact Sheet: U.S.-Kazakhstan Cooperative Activities on Nuclear Security," www.whitehouse.gov, March 2, 2014, http://www.whitehouse.gov/the-press-office/2014/03/25/fact-sheet-us-kazakhstan-cooperative-activities-nuclear-security

[20] Nuclear Security Summit, "Two thirds NSS countries: from guidelines to law," www.nss2014, March 25, 2014, https://www.nss2014.com/en/news/two-thirds-nss-countries-from-guidelines-to-law

[21] "Head office of the International Science and Technology Center to move to Almaty," Tengrinews, September 27, 2011, http://en.tengrinews.kz/politics_sub/Head-office-of-the-International-Science-and-Technology-Center-to-move-to-Almaty-4709/.

[22] The 16th SAC Seminar 'Energy Security, How To Further The Technology' was held in Almaty on October 22-23, 2013," International Science and Technology Center, http://www.istc.ru/istc/istc.nsf/va_WebPages/16SAC_Seminar%20%20Eng.

[23] *International Science and Technology Center Annual Report 2012: 18 Years Supporting International Scientific Cooperation,* Moscow, 2012, http://www.istc.ru/istc/istc.nsf/va_WebPages/AnnualReportsEng.

[24] "U.S.-Kazakh Nonproliferation Cooperation," Remarks Simon Limage Deputy Assistant Secretary for Nonproliferation Programs, Bureau of International Security and Nonproliferation Al-Farabi University Almaty, Kazakhstan October 16, 2012, http://www.state.gov/t/isn/rls/rm/199215.htm.

has funded projects in Russia, though in recent years the Partnership has also supported non-proliferation projects in Ukraine. At Moscow's insistence, the Russian government has directed most Global Partnership funding toward destroying its obsolete chemical weapons stockpiles and nuclear-powered attack submarines.

At their May 2011 summit in Deauville, France, the G8 summit agreed to continue the Global Partnership after 2012, indicating that their priorities were enhancing nuclear/radiological security, bio-security, scientist engagement, and implementation of UNSRC 1540. It is unclear how the June 2013 expiration of the Cooperative Threat Reduction (CTR) Program in Russia (also known as the Nunn-Lugar Program after its original Senate sponsors) or the 2014 Russia-West confrontation over Ukraine will affect the future scope and activities of the Global Partnership.

Kazakhstan has become a leading supporter of the global movement against further nuclear weapons testing. At Astana's initiative, the UN General Assembly has recognized August 29, the day on which Kazakhstan in 1991 closed the Semipalatinsk test site, as the official International Day against Nuclear Tests.[25] To mark the 20th anniversary of its closing, Astana hosted an International Forum for a Nuclear-Weapons-Free Worldi n 2011.

The following year, more than 200 participants from over 75 countries, including parliamentarians from 46 countries, joined representatives from some two dozen international organizations, including the United Nations and the IAEA, at an international conference entitled, "From a Nuclear Test Ban to a Nuclear Weapon-Free World."[26]

IAEA Director General Yukiya Amano delivered an address at the *Nuclear-Weapons-Free World Conference* held on 12 October 2011 in Astana, Kazakhstan.

The Astana conference was jointly organized by several groups in Kazakhstan (the Mazhilis, the Foreign Ministry, the Nazarbayev Center) as well as the international organization of Parliamentarians for Nuclear Non-Proliferation and Disarmament.[27]

The focus of the conference, like the initiative to establish the International Day against Nuclear Tests, aimed to generate momentum for the Comprehensive Test Ban Treaty (CTBT) and other nuclear disarmament measures. Kazakhstan was one of the first states to sign the CTBT, but the treaty has yet to be ratified by all the countries which are listed in Annex 2 of the treaty and whose signature and ratification is mandatory for for the treaty's entry into force.

The Astana conference participants called for universal support for the CTBT, an end to any further nuclear weapons production, decreasing the role of nuclear weapons in national security doctrines, creating new nuclear weapons-free zones, and conducting no further nuclear tests. They further proposed regulations banning investments of state funds in companies producing or delivering nuclear weapons. The conference

[25]"Astana hosts anti-nuclear forum," Caspionet, Aug 30, 2012, http://caspionet.kz/eng/general/Astana_hosts_antinuclear_forum_1346303725.html.

[26]"President Nazarbayev Addresses the International Anti-Nuclear Conference," No. 95, September 6, 2012, http://www.kazakhembus.com/article/president-nazarbayev-addresses-the-international-anti-nuclear-conference.

[27]Ibid.

participants also advocated creating new regional zones free of nuclear weapons, in particular in the Middle East, in North East Asia and the Arctic.[28]

Kazakhstan has extended this campaign against nuclear weapons testing to the grassroots level through a global education campaign and an Internet-based ATOM Project, "Abolish Testing – Our Mission". Its website has a petition that any individual can sign that calls on governments to adopt the CTBT. The ATOM Project uses social media like Facebook and Twitter to promote dialogue among survivors of nuclear explosions as well as NGOs and other Internet users.[29]

It also aims to spread knowledge about the negative effects of nuclear tests and mobilize the international community against them by staging events internationally. In his opening address to the conference, Nazarbayev called on participants "and all the people of the world to support [the] ATOM Project and make building of a nuclear weapons-free world our most important goal."[30] He called having nuclear weapons "absolute blasphemy" since their use would be equivalent to committing global "suicide," which Nazarbayev noted "is condemned by all global religions."[31]

Like President Obama and many other advocates of nuclear abolition, Nazarbayev stressed that a "nuclear-weapons free world isn't achievable overnight. But we should proceed towards it and encourage all nations to support the cause."[32]

In his speech, Nazarbayev identified several urgent challenges in the areas of nuclear disarmament and arms control.[33]

- First, he called on the remaining few states that had not ratified the NPT (Israel, India, and Pakistan) to do so.
- Second, while praising the recent New START Treaty adopted by Russia and the United States, Nazarbayev noted that other nuclear weapons states need to follow their example and begin reducing their own nuclear forces.
- Third, he called on all countries to sign and ratify the CTBT.
- Fourth, he advocated establishing a global anti-nuclear parliamentary assembly.[34]
- Fifth, the Kazakh President called on all nuclear powers to accept all the various regional nuclear-weapon free zones that have been established.

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[28] "Anti-nuclear forum participants discuss results of the meeting," Caspionet, August 30, 2012, http://caspionet.kz/eng/general/Antinuclear_forum_participants_discuss_results_of_the_meeting_1346303797.html.

[29]TimurNazarov, "Nazarbayev suggests world anti-nuclear parliament," August 29, 2012, http://centralasiaonline.com/en_GB/articles/caii/newsbriefs/2012/08/29/newsbrief-02\.

[30] "Kazakhstan launches ATOM international project," August 29, 2012, http://en.tengrinews.kz/politics_sub/Kazakhstan-launches-ATOM-international-project-12565/.

[31]Tashkinbayev, "Japanese deputies."

http://en.tengrinews.kz/politics_sub/Japanese-deputies-nominated-Nazarbayev-for-Nobel-Peace-Prize-12546/.

[32] "Nuclear-free world doesn't imply renunciation of peaceful use of nuclear energy: President Nazarbayev," August 29, 2012, http://en.tengrinews.kz/politics_sub/Nuclear-free-world-doesnt-imply-renunciation-of-peaceful-use-of-nuclear-energy-12569/.

[33]"Astana hosts anti-nuclear forum," Caspionet, August 30, 2012, http://caspionet.kz/eng/general/Astana_hosts_antinuclear_forum_1346303725.html.

[34] "Nazarbayev voices idea of global antinuclear parliamentary assembly," Kazinform, August 29, 2012, http://engnews.gazeta.kz/art.asp?aid=369222.

- Finally, Nazarbayev called for more effective international regulation of nuclear energy programs. Despite the March 2011 disaster at Japan's Fukushima nuclear power plant, Nazarbayev lamented the lack of clear and explicit nuclear security standards, which increases the dangers of nuclear terrorism. He singled out the need to secure more national ratifications of the Convention on the Physical Protection of Nuclear Material to ensure that it can enter into force.[35]

In support of this latter objective, Kazakhstan has used the biannual Nuclear Security Summits to launch various nuclear nonproliferation initiatives and highlight the country's contributions in this area. Kazakhstan has endorsed all Nuclear Security Summit (NSS) goals, including promoting the safe use of nuclear energy, augmenting the IAEA's role and authority in nuclear safety and security, adopting stronger measures to secure radiological sources that terrorists can use in "dirty bombs," and encouraging commercial nuclear power producers to stop using highly enriched uranium.[36]

Kazakhstan also favors creating new international instrument and stronger UN measures to encourage countries to comply with nuclear security rules and conventions.[37]

Kazakhstan's expansive nuclear disarmament vision supports its NSS-related policies. Its officials and experts argue that the only way to guarantee long-term nuclear security is through comprehensive nuclear disarmament. In the interim, they have called for ending nuclear weapons testing through the CTBT, establishing nuclear-weapons-free zones, strengthening security assurances for countries that renounce nuclear weapons, and securing adoption by all five nuclear weapon states of the protocol on negative security assurances to the Central Asian Nuclear Weapons Free Zone Treaty.[38]

A highpoint of the March 2012 NSS in Seoul was the Kazakhstan-Russian-U.S. initiative to enhance the security of the former Semipalatinsk nuclear test site. Although the site was closed in 1991, scavengers were finding contaminated scrap materials at the site. The secret trilateral effort to clean and secure the site was launched in 2004 and was completed in 2012. At the summit, President Obama praised "the outstanding leadership of President Nazarbayev and the people of Kazakhstan" for their contributions to global nuclear materials security.[39]

Another element of this effort was Nazarbayev's concurrent op-ed in the *New York Times* on "What Iran Can Learn From Kazakhstan." Recalling how Kazakhstan has prospered since renouncing the nuclear weapons capabilities it inherited from the USSR, the president wrote that, "Kazakhstan has used its close diplomatic relations with our neighbor across the Caspian Sea to urge Tehran to learn from our example." The commentary also called for more nuclear-weapons-free zones and other nonproliferation measures.[40]

At the most recent 2014 NSS, which took place March 24-25 at The Hague in the Netherlands, Nazarbayev called for a variety of measures to strengthen nuclear security: strengthening the authority and the role of the IAEA; increasing nuclear transparency, bolstering negative security assurances, legally binding nuclear safety

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[35] "Nazarbayev named reasons of global nuclear security erosion," Tengrinews, August 29, 2012, http://en.tengrinews.kz/politics_sub/Nazarbayev-named-reasons-of-global-nuclear-security-erosion-12566/.

[36] Y. Zuslin, "Global nuclear disarmament- most powerful initiative of Kazakh Leader," Kazakhstan 2050: Our Power," March 31, 2014, http://kaz2050.kz/en/news/7280/

[37] "Nuclear security summit 2014," Kazakh TV, March 25, 2014, http://kazakh-tv.kz/en/view/world_news/page_47448_; and (https://www.nss2014.com/en/nss-2014/countries-and-statements/kazakhstan ; and Colin Stevens, "NSS 2014: Kazakhstan as a key player," March 26, 2014, http://www.eureporter.co/magazine/2014/03/26/nss-2014-kazakhstan-as-a-key-player/

[38] "Remarks by President of the Republic of Kazakhstan NursultanNazarbayev At the first plenary session of the Nuclear Security Summit The Hague, the Netherlands," March 24, 2014, http://kazembassy.ca/news-and-events/remarks-by-president-of-of-kazakhstan-nursultan-nazarbayev/

[39] Embassy of the Republic of Kazakhstan, "2012 News Bulletin No.14," www.kazakhembus.com, April 2, 2012, http://www.kazakhembus.com/archived_article/2012-news-bulletin-no-14.

[40] Nursultan Nazarbayev, "What Iran Can Learn From Kazakhstan," New York Times , March 25, 2012, http://www.nytimes.com/2012/03/26/opinion/what-iran-can-learn-from-kazakhstan.html?_r=0

standards, adopting uniform measures for rapidly responding to nuclear accidents, and, eventually, complete nuclear disarmament.[41] Nazarbayev affirmed Kazakhstan's "moral right" to request that the next NSS be held in Kazakhstan due the country's leadership on global nuclear nonproliferation.[42]

Of the 53 countries participating at the 2014 NSS, 33 states, including Kazakhstan, pledged enhanced cooperation on nuclear security through such means as submitting themselves to period peer reviews of their nuclear security procedures.[43] At the same time, Nazarbayev launched a sharp critique of the existing nuclear order at the summit and also in a *Washington Times* newspaper article published the day before the summit began. He criticized the United States, Russia, and the other nuclear weapons states for not making greater progress in nuclear disarmament and for not fulfilling their assurances to countries like Ukraine and Kazakhstan that eliminate their own arsenals.

FIGURE 2 THE PRESIDENTS OF KAZAKHSTAN, RUSSIA AND THE UNITED STATES AT THE 2012 NUCLEAR SUMMIT

In addition to recalling Kazakhstan's earlier contributions to nuclear disarmament and non-proliferation as well as renewing Kazakhstan's proposals to strengthen nuclear safety and security, Nazarbayev used the occasion to make a broader critique of the nuclear nonproliferation regime. In particular, he expressed dissatisfaction with the protection the great powers provide countries that, like Kazakhstan and Ukraine, renounce nuclear weapons. He called the NPT "unfair" and unbalanced and wanted to revise the treaty so that the original five nuclear weapon states must also provide the IAEA with "with complete information regarding their civilian nuclear projects, programs, and plans."[44]

In his summit speech, Nazarbayev proposed creating an international office under the UN to monitor how the five nuclear weapons states fulfill their security assurances to countries that abandon nuclear weapons and join regional nuclear weapons free zones.[45]

Kazakhstan's newly adopted Foreign Policy Concept for 2014-2020 commits the government to strive for a world free of nuclear weapons and other weapons of mass destruction.[46] In 2013, Kazakhstan had a prominent role in the negotiations designed to prevent Iran from acquiring nuclear weapons. Almaty hosted two rounds of talks involving the "P5+1" group (all five permanent UN Security Council members and Germany plus Iran). In his December 16, 2013, letter congratulatory letter to President Nazarbayev on the

[41] Nursultan Nazarbayev, "Prepared extended remarks by President of the Republic of Kazakhstan Nursultan Nazarbayev at the first plenary session of the Nuclear Security Summit," March 24, 2014, The Hague, the Netherlands.

[42] Nazarbayev's remarks on KazakhTV, "Nuclear Security Summit 2014," kazakh-tv.kz, March 25, 2014,

http://kazakh-tv.kz/en/view/world_news/page_47448_

[43] Nuclear Security Summit, "Two thirds NSS countries: from guidelines to law," www.nss2014, March 25, 2014, https://www.nss2014.com/en/news/two-thirds-nss-countries-from-guidelines-to-law.

[44] "Kazakhstan president asks world leaders to advance nuclear security," The Washington Times, March 24, 2014, http://www.washingtontimes.com/news/2014/mar/24/nazarbayev-toward-a-safer-nuclear-community/?page=1&utm_medium=RSS&utm_source=RSS_Feed
http://www.kazakhstan.at/index.php?id=news_detail&tx_ttnews[tt_news]=737&cHash=0c6dd5a0257af07bd4029cb5263d5649

[45] "Remarks by President of the Republic of Kazakhstan NursultanNazarbayev At the first plenary session of the Nuclear Security Summit The Hague, the Netherlands," March 24, 2014, http://kazembassy.ca/news-and-events/remarks-by-president-of-of-kazakhstan-nursultan-nazarbayev/

[46] Ministry of Foreign Affairs, "Foreign Policy Concept for 2014 – 2020 Republic of Kazakhstan," approved Jan 29, 2014, Embassy of Kazakhstan in the USA, http://www.kazakhembus.com/page/foreign-policy-concept.

occasion of Kazakhstan's Independence Day, President Obama wrote that, "Kazakhstan's hosting of the P5+1 discussions was key in making progress on the international community's concerns with Iran's nuclear program."

During his February 2014, annual meeting with the senior foreign diplomats accredited to Kazakhstan, Nazarbayev recalled how "Kazakhstan voluntarily abandoned nuclear weapons, was recognized by the world community for this and became a good 'beacon' for countries such as Iran."[47]

Last year, Kazakhstan's nuclear diplomacy imparted critical momentum toward brining the long-stalled Central Asian Nuclear Weapon Free Zone Agreement (CANWFZ) into force. At a signing ceremony on the margins of the May 2014 Nuclear Nonproliferation Treaty (NPT) Preparatory Committee Meeting in New York, the governments of France, the United Kingdom, and the United States reversed their long-standing opposition and joined China and Russia in signing the protocol to the CANWFZ, which was established in March 2009, following ratification by the five Central Asian governments -- Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan--of the Treaty of Semipalatinsk, which they signed in 2006.

Left to right, UN Secretary General Ban Ki-moon, US President Barack Obama, and Kazakhstani President Nursultan Nazarbayev, Nuclear Security Summit, The Hague, March 25

The CANWFZ is the world's fifth such Nuclear-Weapons-Free Zone (NWFZ). Article VII of the Nuclear Non-Proliferation Treaty (NPT) guarantees the right of states to establish NWFZs. The United Nations, which has a precise definition of a NWFZ, has developed generic principles and guidelines for their authors. The five treaties establishing regional NWFZs all oblige their States Parties not to research, develop, manufacture, stockpile or otherwise try to obtain any nuclear explosive devices in the territory specified by the texts. They further require parties to avoid assisting other countries from undertaking such activities in the region covered by the zone.

Conversely, the treaties typically affirm the right of States Parties to pursue nuclear energy for peaceful purposes such as research and commerce, providing all their nuclear material and installations are placed under the full-scope safeguards of the IAEA, which allow the Agency to verify that all activities at declared nuclear sites have peaceful purposes. The Semipalatinsk Treaty and the CANWFZ, which covers an area of more than 3.8 million square kilometers, contain some unique features. It is the first NWFZ solely in the Northern Hemisphere (where most existing nuclear weapons states are located), it adjoins proliferation-prone South Asia and the Middle East as well as two NPT-recognized nuclear weapons states (China and Russia), and it includes all five Central Asian countries (whose governments typically pursue divergent foreign policies).

One member, Kazakhstan, is the first former nuclear weapon state to adhere to a NWFZ. For the first time, the members agree to work to help restore the ecological damage caused by earlier nuclear tests in the region, support the Comprehensive Nuclear Test Ban Treaty, adopt the so-called IAEA Additional Protocol (which gives the Agency expanded authorities and access beyond those in the standard full-scope safeguards), and adhere to international standards for the physical protection of nuclear and radiological materials.

NWFZ treaties typically have at least one Protocol specify the rights and obligations of states outside the zone. The five countries (Britain, China, France, Russia, and the United States, which are sometimes collectively

[47] NursultanNazarbayev, "ВыступлениеПрезидентаКазахстанаН.Назарбаеванавстрече с главамизарубежныхдипмиссий, аккредитованных в Казахстане," Ministry of Foreign Affairs, Feb. 2, 2014, http://mfa.gov.kz/ru/#!/news/article/13126.

termed the "P5" since they hold the five permanent seats on the UN Security Council) defined under the NPT as nuclear weapon states (NWS) may sign them.

One protocol usually commits the NWS to refrain from stationing or testing nuclear weapons in the zone or otherwise violate the treaty.

Another protocol allows the NWS to offer legally-binding assurances not to use or threaten to use nuclear weapons against NWFZ Treaty parties. The non-nuclear states value these so-called "negative security assurances" as compensation for their abstaining from developing their own nuclear weapons and abiding by their nuclear non-proliferation obligations."

France, Great Britain, and the United States have supported the idea of establishing a nuclear-weapons-free zone in Central Asia but objected to the CANWFZ Protocol. Their concerns included that the Semipalatinsk Treaty's seeming to allow Russia to move nuclear weapons in or through the zone within the Collective Security Treaty (CST) created before the treaty was written.

World's Five Nuclear Power signed a Protocol on Central Asian Nuclear-Weapon-Free-Zone Treaty and Recognize as Central Asia Nuke-Free Zone

After becoming chair of the CANWFZ Treaty in June 2012 and receiving the authority to hold negotiations on behalf of all five Central Asian governments on the Protocol, Kazakhstan held some two dozen meetings, consultations, and negotiations to reach an understanding on the issue, which resulted in a joint position document entitled, "On the position of the signatories of the Treaty on the Nuclear-Weapon-Free Zone in Central Asia on providing negative assurances to the Treaty." [48]

On May 6, France, the United Kingdom, and the United States reversed their long-standing opposition and joined China and Russia in signing the protocol at a ceremony on the margins of the Nuclear Nonproliferation Treaty (NPT) Preparatory Committee Meeting in New York. According to a Kazakhstan diplomat in Washington interviewed on the day of the signing, his country's Ministry of Foreign Affairs "actively pursued the issue, reinvigorating the negotiations process through presenting a strong legally substantiated arguments to alleviate the concerns of P5 with the regard to the Treaty. Our lawyers made a strong case on which all P5 had to agree.

Again it was Kazakhstan's MFA that spearheaded the effort with other [Central Asian] states to accept our approach to get P5 to sign the Treaty with their interpreting statements but to operationalize it eventually after five year delay. We started the process in 2012 when Kazakhstan got its chairmanship in C5 CANWFZ and all the countries in the region agreed to prolong our leadership in the grouping for another year in 2013 for us to lead the negotiations to its successful finalization, what actually happened today."[49]

Speaking on behalf of all five Central Asian governments on May 6 Kazakhstan's U.N. Ambassador, Kairat Abdrakhmanov, called the signing "a historic event" that will provide Central Asian states with "security,

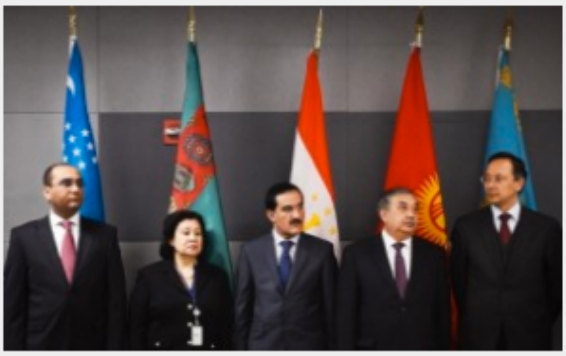
[48]Erlanldrissov, "A New Step Forward to Greater Regional and Global Security," May 13, 2014,

http://www.astanatimes.com/2014/05/new-step-forward-greater-regional-global-security/.

[49] Author's interview with Kazakhstan diplomat in Washington, May 6, 2014

stability and peace in the region with a view to create the necessary conditions for the development and prosperity of their peoples."[50]

Signing for the United States, Thomas Countryman, assistant secretary of state for international security and nonproliferation, said that the Obama administration supports NWFZs as contributing to nonproliferation, peace, and security. In its 2010 Nuclear Posture Review, the administration decided to extend negative security assurances to any state that lacked nuclear weapons, was a member of the NPT, and adhered to its nonproliferation obligations, which the Central Asian states do. Countryman added that the Obama administration had decided that the CANWFZ would not disrupt U.S. security arrangements or military operations, installations, or activities.[51]



World's Five Nuclear Power signed a Protocol on Central Asian Nuclear-Weapon-Free-Zone Treaty and Recognize as Central Asia Nuke-Free Zone

Vitaly Churkin, Russia's U.N. Ambassador noted that this was the first occasion that all five NWS signed a NWFZ protocol simultaneously.[52] The Central Asian governments hope that the P5 ratify the protocol so that the treaty can enter into force before next year's NPT Review Conference. When the CANWFZ enters into force, approximately half the earth's landmass will be covered by NWFZs. Treaties have created other zones in Latin America and the Caribbean, Southeast Asia, the South Pacific, and Africa.

Champions of these mechanisms consider them effective arrangements to curb the nuclear weapons proliferation throughout large regions of the globe and hope their spread will promote nuclear disarmament. Governments, NGOs, and individual experts have called for creating more zones in other regions, especially Northeast Asia and the Middle East.

RENEWING NUCLEAR ENERGY

During the past decade, Kazakhstan has dramatically increased its production and export of uranium. From 2001 to 2009, the country's uranium output grew from 2,000 to 13,900 tons. Geologists have identified about 50 uranium deposits, located mostly in south-central Kazakhstan.[53] In recent years, in-situ leach (ISL) mining has overtaken hard rock deposits as the main source of production.[54] With a record output in 2009, Kazakhstan produced more uranium than any other country that year by increasing its national output by a

[50] Edith M. Lederer, "Central Asian nations get assurances of no nukes," Associated Press, May 6, 2014, http://news.yahoo.com/central-asian-nations-assurances-no-nukes-165319951.html.

[51] "Remarks by Thomas M. Countryman, Assistant Secretary of State for International Security and Nonproliferation, at the Signing Ceremony of the Protocol to the Treaty on a Nuclear-Weapon-Free Zone In Central Asia," U.S. Department of State, May 6, 2014, http://usun.state.gov/briefing/statements/225682.htm.

[52] Lederer, "Central Asian nations get assurances."

[53] "Kazakhstan at Center of 2013 Uranium Production," Nuclear Market Review, January 31, 2014, http://www.uranium.info/market_analyses.php#140131.

[54] "Uranium Mining Overview," May 2012, http://www.world-nuclear.org/education/mining.htm.

remarkable 63% over 2008, which was 8,500 tons. The increased production for 2009 resulted from new uranium mines beginning operations or expanding their capacities that year.[55]

Second only to Australia, Kazakhstan has more than 12 percent of global uranium reserves, or over 1.5 million tons.[56] The country extracted approximately 22,500 tons (58.5 million pounds) of uranium (tU) in 2013, approximately 38% of global production for that year.[57] The previous year, Kazakhstan produced 20,900 tU, or 37% of global production, estimated at 55,700 tons in 2012.[58]

Kazakhstan's share was somewhat less in 2011, when Kazakhstan accounted for 35% of global production, with 19,400 tons.[59] Almost all of Kazakhstan's uranium production is exported. The main destinations are China, Japan, and Russia. The country's own consumption of uranium will increase if the Kazakhstani government realizes its goals of expanding the domestic use of nuclear power and of becoming a producer of uranium fuel for other countries. Foreign Minister Erlan Idrissov has called for a "global effort aimed at maintaining calm on uranium markets internationally so that all countries can get access to sources of nuclear energy."[60]

[55] "Kazakhstan takes top spot in 2009," January 5, 2010, http://www.world-nuclear-news.org/newsarticle.aspx?id=26811&terms=kazakhstan.

[56]Uranium and Nuclear Power in Kazakhstan," World Nuclear Association, February 2014, http://www.world-nuclear.org/info/Country-Profiles/Countries-G-N/Kazakhstan.

[57] "Kazakhstan tops uranium league," World Nuclear News, January 27, 2014, http://www.world-nuclear-news.org/ENF-Kazakhstan-tops-uranium-league-2701147.html.

[58]"Nuclear power plant location to be defined by March end: President Nazarbayev," Tengrinews, January 17, 2014, http://en.tengrinews.kz/politics_sub/Nuclear-power-plant-location-to-be-defined-by-March-end-President-Nazarbayev-25371/.

[59]"Kazakhstan Sets New Record For Uranium Production," Radio Free Europe/Radio Liberty, January 24, 2013, http://www.rferl.org/content/kazakhstan-uranium-production/24882313.html.

[60] "Kazakhstan to seal international nuclear fuel bank," businessneweurope, February 18, 2014, http://www.bne.eu/story5773/Kazakhstan_to_seal_international_nuclear_fuel_bank

Kazakh ISL uranium mines

Region	ISL Mine	Resources tU	Operator	Annual production target tU/yr	Start production, full prod'n
		Chu-Sarysu Province, Chu-Sarysu district			
Northern/Stepnoye group	Uvanas	8100	Stepnoye-RU LLP (K'prom)	400	2006
	East Mynkuduk	22,000		1300	2006, 2007
	Inkai 1, 2, 3	reserves 52,000, in 153,000 resources	Inkai JV: Cameco 60%, K'prom 40%	2000, 4000 later	2008, 2010, 2014 for expansion
	South Inkai (Inkai 4)	Reserves 13,000, in 15,260 indicated, 17,100 inferred	BetpakDala JV: Uranium One 70%, K'prom 30%	2000	2007, 2011
	Akdala	10,359 total		1000	2006, 2007
	Central Mynkuduk (Mynkuduk)	52,000	JSC Ken Dala.kz Stepnogorsk (K'prom)	2000	2007, 2010
	West Mynkuduk	26,000	Appak JV: K'prom 65%, Sumitomo 25%, Kansai 10%	1000	2008, 2010
	Akbastau (Budenovskoye 1, 3, 4)	31,600 reserves, in 47,293 resources	JV Akbastau: K'prom 50%, Uranium One 50% (ex ARMZ)	1000 (1) 2000 (3,4)	2009, 2015 2010
	Karatau (Budenovskoye 2)	52,000 reserves, in 64,000 resources	JV Karatau: K'prom 50%, Uranium One 50%	2000 (to 3000)	2008, 2011
	Zhalpak	15,000	JV with China ??(CNNC 49% was proposed)	500-1000	2014
Central/Eastern (Tsentralnoye) group	Tortkuduk (Moinkum North)	24,000	Katco JV, Areva 51%, K'prom 49%	2500	2007, 2008
	Moinkum* (southern Moinkum, Katco) - northern	in above		1000	2006, 2007
	South Moinkum (east Moinkum) - southern	35,000	Taukent Mining & Chemical Plant LLP (K'prom)	1500	2006
	Kanzhugan / Kaynarski	22,000		600	2008
		Chu-Sarysu Province, Syrdarya district			
Western (no.6) group	Kharasan 1(north)	15,693 plus 17,940 inferred	Kyzylkum JV, Japanese 40%, Uranium One 30%, K'prom 30%	3000	2010, 2014
	Kharasan-2	?	Baiken-U JV, Japanese 40%, K'prom 60%	2000	2010, 2014
	Irkol	30,000	Semizbai-U JV (K'prom 51%, CGN-URC 49%)	750	8/2008, 2010
	N. Karamurun	16,000	Mining Group 6 LLP (K'prom)	1000	2007, 2010
	S. Karamurun	18,000	Mining Group 6 LLP (K'prom)	250	2009
Southern group	Zarechnoye	12,500 plus 4500 inferred	Zarechnoye JV: K'prom 49%, Uranium One 49.67% (ex ARMZ)	1000	2007, 2012
	Southern Zarechnoye	"insufficient to support development"		600	deferred
		Northern Province			
Akmola region	Semizbai		Semizbai-U JV (K'prom 51%, CGN-URC 49%)	700	2009, 2011

FIGURE 3 WORLD'S NUCLEAR ASSOCIATION COUNTRY PROFILES

Kazakhstan's national nuclear energy company, KazAtomProm, aims to become the world's largest miner and exporter of natural uranium. KazAtomProm is a wholly state owned company, established in 1997, that manages indigenous uranium exploration and mining as well as the Kazakhstan government's other commercial nuclear activities. The corporation employs about 25,000 people and had a net profit of 36 billion tenge ($200 million) in 2012. It owns about half the shares of all the uranium mining companies operating in Kazakhstan (all domestic equity); its operations produced 12,500 tons in 2012.[61] In line with its expanding operations, KazAtomProm's revenue has grown rapidly since 2008, reaching more than $2 billion

[61]Mariya Gordeyeva, "Kazatomprom sees uranium output flat, looks to rare earths," Reuters, April 1, 2014, http://in.reuters.com/article/2014/04/01/uranium-kazakhstan-idINL5N0MT2XW20140401.

in 2012.[62] In 2013, KazAtomProm's production rose to 12,600 tons, with 10,200 tons covered by sales contracts.[63]

With current world uranium prices still depressed, KazAtomProm has scaled back earlier plans to raise uranium production or move up the fuel cycle rapidly. In late 2013, its then Chairman Vladimir Shkolnik said that, "We've put the brakes on implementing uranium output expansions. The same goes for other elements of the fuel cycle."[64]

FIGURE 4 URANIUM MINING IN KAZHAKHSTAN. CREDIT PHOTO: KAZATOMPROM

The corporation will instead maintain its global market share and focus for a while on producing more rare earth elements, which are used in a variety of industrial applications, and other products.[65] Meanwhile, KazAtomProm expects to increase Kazakhstan's annual uranium production by more than 180,000 tons to over 1.7 million tons by 2020.[66]

KazAtomProm also participates in the government's Program for Development of Renewable Energy and supports research on solar energy, energy conservation, water desalination, medical research, and related projects. Through joint ventures with Russia's Intermix Met and several Japanese companies, KazAtomProm and Uranium One Holding are seeking to develop a cost-effective technology to extract scandium during the uranium production process. The plan is to start producing scandium, a high-strength material used in aircraft, rockets, satellites, robotics and laser equipment—by 2016.[67] Uranium One Inc. is a Canadian-based company and one of the world's largest uranium producers with assets in Kazakhstan and other countries. It is a wholly owned subsidiary of Atomredmetzoloto (ARMZ), which itself is a wholly owned subsidiary of the Russian State Corporation for Nuclear Energy (Rosatom).[68]

The corporation is eager to expand into new geographic areas. For example, KazAtomProm opened an office in North America in 2013.[69] The company is now thinking of entering the African solar energy market.[70]

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[62]"Kazakhstan at Center of 2013 Uranium Production," Nuclear Market Review, January 31, 2014, http://www.uranium.info/market_analyses.php#140131.

[63] Ibid

[64] Ibid.

[65]Mariya Gordeyeva, "Kazatomprom sees uranium output flat, looks to rare earths," Reuters, April 1, 2014,

http://in.reuters.com/article/2014/04/01/uranium-kazakhstan-idINL5N0MT2XW20140401.

[66]Ibid.

[67]"A Kazakh-Russian JV to produce scandium in Kazakhstan," The Times of Central Asia, April 1, 2014, http://www.timesca.com/index.php?option=com_content&view=article&id=13610:a-kazakh-russian-jv-to-produce-scandium-in-kazakhstan&catid=84:market-a-companies&Itemid=576.

[68]Ibid.

[69]"Kazakhstan at Center of 2013 Uranium Production," Nuclear Market Review, January 31, 2014, http://www.uranium.info/market_analyses.php#140131.

KazAtomProm intends to become a vertically integrated company involved in all phases of the nuclear fuel cycle. The corporation aims to expand its activities beyond selling natural uranium and making fuel pellets to encompass uranium conversion (of uranium oxide into uranium hexafluoride), the manufacturing and exporting of uranium fuel rods and assemblies for use in civilian nuclear reactors, and other activities.[71] At the March 2014 NSS, President Nazarbayev confirmed that Kazakhstan is seeking to develop a full nuclear fuel production.[72]

In 2012, Nazarbayev argued that nuclear energy was essential for countries suffering from "poverty, unemployment and food shortages" and could proceed with effective UN and IAEA monitoring of such projects to confirm their non-military application.[73] Kazakhstan accordingly plans to resume domestic nuclear power production in the next few years.

Opposition to renewed domestic nuclear energy production persists due to the catastrophic health and environmental consequences inflicted on the local population from activities at the former nuclear test site in Semipalatinsk.[74]

The government intends to highlight its safety and security measures and take other steps to reassure people that any nuclear energy program in Kazakhstan will not contribute to nuclear proliferation or accidents. It will also continue to collaborate with the international community to prevent nuclear trafficking through its territory.

NEXT STEPS

Kazakhstan is transitioning from a recipient country of nuclear security and nonproliferation assistance to a potential donor state.[75] In July 2011, after several years of informal proposals, the Kazakhstan government formally offered to host the world's first international nuclear "fuel bank" under IAEA supervision. Such a facility would provide low-enriched uranium fuel to countries seeking to pursue peaceful nuclear energy programs without the economic and environmental costs of manufacturing their own nuclear fuel through uranium enrichment.[76]

The Ministry of Foreign Affairs released a statement in February 2014 that, "We believe that the development of multilateral approaches to the nuclear fuel, including the creation of guaranteed nuclear fuel

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[70] "Kazatomprom looking to expand into Africa," Trends, March 27, 2014, http://en.trend.az/capital/energy/2256499.html.

[71] "Uranium and Nuclear Power in Kazakhstan," World Nuclear Association, February 2014, http://www.world-nuclear.org/info/Country-Profiles/Countries-G-N/Kazakhstan/.

[72] "Kazakhstan to work on full nuclear fuel cycle: President Nazarbayev," Tengrinews, March 24, 2014, http://en.tengrinews.kz/politics_sub/Kazakhstan-to-work-on-full-nuclear-fuel-cycle-President-Nazarbayev-26902/.

[73] "Nuclear-free world doesn't imply renunciation of peaceful use of nuclear energy: President Nazarbayev," Tengrinews, August 29, 2012, http://en.tengrinews.kz/politics_sub/Nuclear-free-world-doesnt-imply-renunciation-of-peaceful-use-of-nuclear-energy-12569/.

[74] Gulnoza Saidazimova, "Kazakhstan: Government Pushing Nuclear Power Despite Public Fears," Eurasia Insight, February 25, 2006, http://www.eurasianet.org/departments/civilsociety/articles/pp022506.shtml. For a graphic description of these environmental problems see Walton Burns, "Not Another Disaster Tourist," Financial Times, January 24, 2008.

[75] "Kazakhstan: at the Forefront of Nuclear Non-Proliferation and Peaceful Uses of Nuclear Energy," *Ottawa Life*, November 27, 2013, http://www.ottawalife.com/2013/11/kazakhstan-at-the-forefront-of-nuclear-non-proliferation-and-peaceful-uses-of-nuclear-energy/

[76] "Assurance of Supply for Nuclear Fuel: IAEA LEU Bank," IAEA, September 4, 2012, http://www.iaea.org/OurWork/ST/NE/NEFW/Assurance-of-Supply/iaea-leu-bank.html

reserves will promote the peaceful use of nuclear energy."[77] The current plan is to establish the bank at the Ulba Metallurgical Plant, though negotiations with the IAEA on the Host Country Agreement continue.[78]

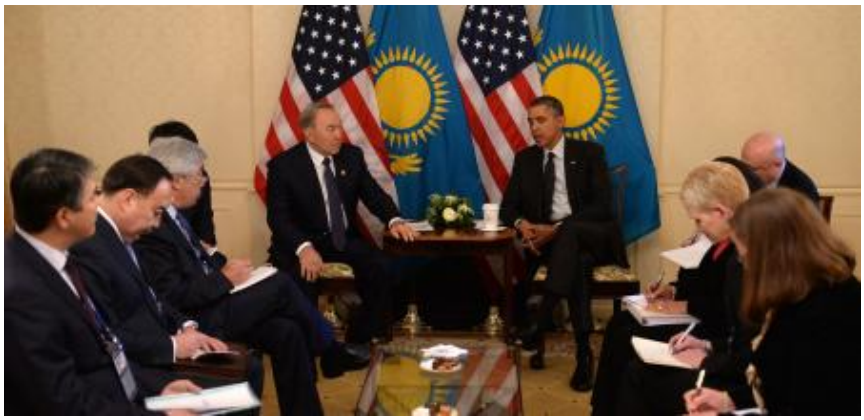

FIGURE 5 MEETING OF PRESIDENT OBAMA WITH PRESDENT NAZARBAYEV MARCH 24, 2014.

As the national nuclear industry develops, with a corresponding increase in the country's role in world's nuclear energy markets, Kazakhstan's ability to influence global nuclear energy security policies will likely increase. Foreign Minister Erlan Idrissov has said that Kazakhstan wants to collaborate with other Central Asian governments "in ensuring the physical protection of nuclear materials."[79]

Kazakhstan is seeking election to the IAEA Board of Governors as a member of the Far East regional group, but faces competition with South Korea, which wants that status to gain leverage over North Korea. Although expressing support for Seoul's position regarding North Korea and the NPT, Anuar Tanalinov, Deputy Director of the Foreign Ministry's Department for Multilateral Cooperation, argues that Kazakhstan should receive a seat on the Board "given the role Astana has been playing in the global nuclear market and given the country's contribution to the global nonproliferation cause."

[80]Kazakhstan has joined the most important international nuclear export control regime, the Nuclear Suppliers Group (NSG), a voluntary body whose members pledge to support export guidelines designed to reduce the risks that transferred items could be misused for military purposes. Kazakhstan is also an adherent to the Hague Code of Conduct against Ballistic Missile Proliferation, the Proliferation Security (Cracow) Initiative, and the Zangger (Nuclear Exporters) Committee.

The government is seeking to accede to the Missile Technology Control Regime (MTCR), the Wassenar Arrangement and the Australian Group.[81] These export control bodies seek to monitor the transfer of conventional military and dual-use technologies that have military as well as civilian applications. Kazakhstan's export control lists, includes all the items covered by these organizations. Nonetheless,

[77]"Kazakhstan to seal international nuclear fuel bank," businessneweurope, February 18, 2014, http://www.bne.eu/story5773/Kazakhstan_to_seal_international_nuclear_fuel_bank.

[78]Merey Kabiden, "Talks over IAEA Nuclear Fuel Bank in Kazakhstan Near Completion," Astana Times, March 6, 2014, http://www.astanatimes.com/2014/03/talks-iaea-nuclear-fuel-bank-kazakhstan-near-completion/.
[79] "Kazakhstan to seal international nuclear fuel bank," businessneweurope, February 18, 2014, http://www.bne.eu/story5773/Kazakhstan_to_seal_international_nuclear_fuel_bank

[80]"Kazakhstan hoping to join IAEA Board of Governors," Tengrinews, November 28, 2013, http://en.tengrinews.kz/politics_sub/Kazakhstan-hoping-to-join-IAEA-Board-of-Governors-24361/.
[81]KairatAbdrakhmanov, statement before the UN Security Council SC/11382, 7169th Meeting (AM), May 7, 2014, http://www.un.org/News/Press/docs/2014/sc11382.doc.htm.

Kazakhstan's growing biological, chemical, and nuclear dual-use capabilities, civilian space launch industry, and conventional arms exports mean that it will become increasingly imprudent to exclude Kazakhstan from participation in these organizations.[82]

In coming years, the United States and other countries can help Kazakhstan strengthen its export controls, insider protection measures, nuclear training and education activities, border and cyber security, physical protection systems, consequence management capabilities, and other elements needed to ensure that Kazakhstan's developing nuclear industry proceeds in a safe and secure manner. U.S. diplomats should remain engaged in Astana to support joint nonproliferation measures.

If the IAEA does establish a nuclear fuel bank in Kazakhstan, President Barack Obama should consider attending the opening ceremony, especially since the trip would highlight and further encourage the longstanding U.S.-Kazakhstan non-proliferation partnership. Furthermore, by becoming the first U.S. president to make an official visit to Central Asia, Obama could pursue other important U.S. objectives in the region, including advancing human rights and democracy, promoting U.S. business interests, and reassuring and fortifying the autonomy of nations newly worried about Russia's regional assertiveness.

[82] "Baiterek space project requires Kazakhstan to enter MTCR," Tengrinews, January 14, 2014, http://en.tengrinews.kz/industry_infrastructure/Baiterek-space-project-requires-Kazakhstan-to-enter-MTCR-25284/

APPENDIX: INTERNATIONAL, MULTILATERAL AND BILATERAL AGREEMENTS[83]

Name	Status	Date
NPT related agreement INFCIRC/504	Entry into force	11.08.1995
Additional protocol	Signed	6.02.2004
Supplementary agreement on provision of technical assistance by the IAEA	Entry into force	25.03.1997
Agreement on privileges and immunities	Entry into force	9.04.1998
NPT	Entry into force	14.02.1994
Convention on the physical protection of nuclear material	Entry into force	22.12.2004
Convention on early notification of a nuclear accident	Entry into force	08.04.2010
Convention on assistance in the case of a nuclear accident or radiological emergency	Entry into force	08.04.2010
Convention on nuclear safety	Entry into force	08.06.2010
Joint convention on the safety of spent fuel management and on the safety of radioactive waste management	Entry into force	08.06.2010
Vienna Convention on Civil Liability for Nuclear Damage	Entry into force	10.02.2011
Amendment to the Convention on the Physical Protection of Nuclear Material	Signed	19.03.2011
ZANGGER Committee	Member	18.11.2008
Nuclear Export Guidelines	Signed	13.05.2002
International Convention on Struggle with Acts of Nuclear Terrorism	Ratified	14.05.2008

BILATERAL AGREEMENTS

- The Agreement between the Russian Federation and the Republic of Kazakhstan on the Peaceful use of Atomic Energy.
- The Agreement between the Russian Federation and the Republic of Kazakhstan on Transportation of fission materials.

[83] International Atomic Energy Agency, "Kazakhstan-Country Nuclear Power Profile," 2012, http://www-pub.iaea.org/MTCD/Publications/PDF/CNPP2012_CD/countryprofiles/Kazakhstan/kazakhstan.htm.

- Agreement of KAEA and GAN of the Russian Federation on co-operation in the field of nuclear safety.
- Agreement of KAEA and NRC of the USA on technical information exchange and co-operation in the field of nuclear safety.
- The Agreement for Co-operation between the United States of America and the Republic of Kazakhstan concerning Peaceful uses of nuclear energy.
- The Agreement for co-operation between European Atomic Energy Community and the Republic of Kazakhstan in the field of nuclear safety.
- The Agreement for co-operation between European Atomic Energy Community and the Republic of Kazakhstan in the field of guided nuclear fusion.
- The Agreement for cooperation between the Republic of Korea and the Republic of Kazakhstan concerning Peaceful uses of nuclear energy.