

# Nuclear, Missile & Space Digest

Volume 13, Number 07

A Fortnightly Newsletter from the Indian Pugwash Society

April 15, 2021

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## A. India

### India to Commission Nuclear Missiles Tracking 15,000-tonne Ship INS Dhruv Soon

*News 18, March 16, 2021*

India is all set to commission the INS Dhruv (codenamed VC 1118) ship, capable of tracking nuclear missiles and satellites from a distance, into the Navy. This ocean surveillance ship is also equipped with game changer active electronically scanned array (AESA) radars that can help India collect accurate data not just about an enemy nation's missile range and capabilities, but will also track our own strategic missiles that are in the trial stage.

The highly classified project is being given the final touches in Vizag before the commissioning. It has gone through a series of tests and sea trials starting 2018. According to sources aware of the development, INS Dhruv is now ready to be commissioned after being delayed by months due to Covid-19 pandemic. The timing could not be better as India faces an aggressive relationship with China which is not just in eastern Ladakh, but in the Indian Ocean region too. The Chinese Navy, now the biggest in the world, is a force to reckon with. INS Dhruv is being seen as a force multiplier that will give the Indian Navy a 360 degree view of the Indo-Pacific and help plan offensive operations with a high degree of accuracy.

<https://www.news18.com/news/india/india-to-commission-nuclear-missiles-tracking-15000-tonne-ship-ins-dhruv-soon-3541160.html>

### BHEL emerges lowest bidder for NPCIL's ₹ 10,800 crore-tender

*Livemint, March 17, 2021*

State-owned engineering firm BHEL on Wednesday said it has emerged as the lowest bidder for supply of equipment for 6x700 MW nuclear power projects of Nuclear Power Corporation of India. "In an open competitive bidding process, Bharat

Heavy Electricals Ltd (BHEL) has emerged as the lowest bidder (₹ 10,800 crore) for the fleet mode tender floated by Nuclear Power Corporation of India Ltd (NPCIL) for the 6x700 MW Turbine Island Package Projects," the company said.

<https://www.livemint.com/companies/news/bhel-emerges-lowest-bidder-for-npcil-s-rs-10-800-croretender-11615981042639.html>

### Objectives of the Chandrayaan-2 mission significantly attained: Dr Jitendra Singh

*PIB, March 17, 2021*

Union Minister of State (Independent Charge) Development of North Eastern Region (DoNER), MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh said that Chandrayaan-2 was a highly complex mission to develop and demonstrate the key technologies for end-to-end lunar mission capability, including soft-landing and roving on the lunar surface. It comprised of an Orbiter, Lander and Rover.

In a statement laid on the table of the Lok Sabha today in reply to a question, Dr. Jitendra Singh said that but for achieving soft landing at the intended spot, the other objectives of the mission have been significantly attained. So much so, that against an initially envisaged one-year life of orbiter, we expect it to be serving for seven years. The mission has accomplished the objective of expanding the lunar scientific knowledge through detailed study of topography, mineralogy, surface chemical composition, thermo-physical characteristics and tenuous lunar atmosphere leading to a better understanding of the origin and evolution of the moon.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1705485>



## **DAE sanctions 100 bedded cancer hospital in Muzaffarpur, Bihar: DrJitendra Singh**

*PIB, March 18, 2021*

Union Minister of State (Independent Charge) Development of North Eastern Region (DoNER), MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh said that Department of Atomic Energy sanctioned construction of a 100 bedded hospital in Muzaffarpur, Bihar. In a written reply to a question in the Rajyasabha today, he said, the project will cost about Rs198 Crore. Bihar Government has transferred a piece of land measuring 15 acres in Shri Krishna Medical College, Muzaffarpur, Bihar to Department of Atomic Energy (DAE) / Tata Memorial Centre (TMC).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1705800>

## **Gaganyaan programme envisages sending humans in space: Dr Jitendra Singh**

*PIB, March 18, 2021*

Union Minister of State (Independent Charge) Development of North Eastern Region (DoNER), MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh said that the Gaganyaan programme envisages sending humans in space. In a statement laid on the table of the Rajya Sabha in reply to a question today, the Minister said that the objective of Gaganyaan programme is to demonstrate the capability to send humans to Low earth orbit (LEO) on board an Indian Launch vehicle and bring them back to earth safely.

Dr Jitendra Singh informed that ISRO has wide experience in technological areas with respect to launch vehicle, spacecraft management and ground infrastructure etc and it has taken steps for human rating of existing systems to ensure crew safety. He said, India is also proud of the fact that many Indian scientists are doing significant

work in collaboration with international institutions and if there is any proposal to get benefit out of their specialized experience, Government of India will definitely consider such proposal in a positive manner.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1705794>

## **India carrying out uranium exploration in Arunachal Pradesh**

*Hindustan Times, March 20, 2021*

Uranium exploration has been taken up in Arunachal Pradesh by the Atomic Minerals Directorate for Exploration and Research, a senior official has said. AMD is a constituent unit of the Department of Atomic Energy (DAE). "AMD is carrying out detailed geological investigations for uranium in parts of Arunachal Pradesh," AMD director D K Sinha told PTI in an email response. Uranium is used as fuel in nuclear reactors. Sinha was responding to reports about AMD taking up uranium exploration in the north-eastern state, near the India-China border. The AMD has a mandate to identify and evaluate mineral resources of uranium, thorium, zirconium, titanium and others and rare earths containing uranium and thorium in the potential geological domains of the country, Sinha said.

A seminar on "Radiation and Environment" was organised here recently under the aegis of the Indian Nuclear Society (INS) in the premises of AMD. Sinha, Chairman of Indian Nuclear Society, Hyderabad Chapter, said the seminar was organised to spread awareness in society on the benefits of nuclear science and technology to mankind and removing the myths on its environmental impact.

<https://www.hindustantimes.com/india-news/india-carrying-out-uranium-exploration-in-arunachal-pradesh-101616247926295.html>

## For Navy, 6 nuclear-powered submarines take priority over 3rd aircraft carrier

*Shishir Gupta*

*Hindustan Times, March 24, 2021*

The Indian Navy has informed the Narendra Modi government that the induction of six nuclear-powered submarines would take priority over a third heavy aircraft carrier discussed earlier to counter the rapid expansion of the People's Liberation Army Navy (PLAN) and dominate the Indian Ocean, people familiar with the matter said.

According to South Block officials, the Indian Navy told the country's national security planners at the Combined Commanders Conference this month that the plan to build the nuclear-powered attack submarines or SSNs should take priority over the project to build a third aircraft carrier (also called indigenous aircraft carrier 2). It is understood that the Navy will seek "acceptance of necessity" or AON approval from the government on the submarine project soon as China has developed the capacity to produce 12,000-tonne Renhai class destroyers in just five years.

<https://www.hindustantimes.com/india-news/for-navy-6-nuclear-powered-submarines-take-priority-over-3rd-aircraft-carrier-101616564522467.html>

## Modi, Hasina seal pacts: Vaccines to trains, tech to nuclear power

*Shubhajit Roy*

*The Indian Express, March 28, 2021*

A day after Prime Minister Narendra Modi unveiled his roadmap for a shared future with Bangladesh, New Delhi and Dhaka came up Saturday with a series of targeted, tangible steps to give a push to bilateral ties.

From developing a nuclear power plant to border haats; more consignments of Covid vaccines to a new train service; from a start-up conclave that will bring together entrepreneurs from both countries to India's

participation in the first-ever air show in Bangladesh in 2022, from cooperation in space to artificial intelligence – a slew of outcomes covering several areas were listed in the joint statement issued after the Mod-Hasina bilateral. From developing a nuclear power plant to border haats; more consignments of Covid vaccines to a new train service; from a start-up conclave that will bring together entrepreneurs from both countries to India's participation in the first-ever air show in Bangladesh in 2022, from cooperation in space to artificial intelligence – a slew of outcomes covering several areas were listed in the joint statement issued after the Mod-Hasina bilateral.

<https://indianexpress.com/article/india/narendra-modi-sheikh-hasina-bangladesh-pm-india-bangladesh-relation-7248572/>

### B. China

## China says it will safeguard Iran nuclear deal, defend Sino-Iran tie

*Reuters, March 25, 2021*

China will make efforts to safeguard the Iran nuclear deal and defend the legitimate interests of Sino-Iranian relations, the commerce ministry said.

Ministry spokesman Gao Feng told a news briefing in response to a question from the media that China has not received notices of sanctions on Iranian oil from the Biden administration. China's comments came after Reuters reported that Iran has "indirectly" moved record volumes of oil into China in recent months, marked as supplies from Oman, the UAE and Malaysia, even as China customs data showed that no Iranian oil was imported in the first two months this year. The increase in Iranian supplies has partly contributed to a drop in Brent crude prices from \$70 a barrel in mid-March.

<https://www.reuters.com/article/idUSKBN2BH0UV>

## China nuclear reprocessing to create stockpiles of weapons-level materials: experts

*Timothy Gardner*

*Reuters, March 26, 2021*

China's push to develop fuel for a new generation of nuclear power reactors will produce large amounts of materials that could be diverted to making nuclear weapons, non-proliferation experts said. China is developing advanced fast reactors and reprocessing facilities as it seeks to reduce dependency on coal, which emits emissions harmful to human health and that worsen climate change. But reprocessing also produces plutonium that could be used to make nuclear weapons. There is no evidence that China intends to divert its potential plutonium stockpile to weapons use, but concern has grown as Beijing is expected to boost its number of nuclear warheads over the next decade from the low 200s now.

"To reduce international concerns about the potential plutonium diversion issues, China needs to keep its plutonium recycling programs more transparent including timely reporting of its stockpile of civilian plutonium like they did before 2016," Hui Zhang, a senior research associate at Harvard University's Project on Managing the Atom, said in an email. Zhang, a contributor to a Nonproliferation Policy Education Center report here called "China's Civil Nuclear Sector: Plowshares to Swords?", said China should also offer to have its plutonium recycling facilities monitored by the U.N.'s International Atomic Energy Agency. He said that China has started construction here of a second plant to reprocess fuel from traditional nuclear reactors that could be commissioned before 2030. China's embassy in Washington did not immediately respond to a request for comment. Reprocessing of nuclear waste has not been practiced for decades in the United States after former President Jimmy Carter halted it on proliferation concerns. The report recommended that Washington urge China to join the United States, South Korea and Japan, in sharing information on current

plutonium and enriched uranium holdings and production capacities. It also recommended that Washington explore with those countries, the possibility of taking a plutonium production timeout. Japan, South Korea, and the United States should offer to delay their plutonium production and fast reactor programs, if China does likewise, it said.

<https://www.reuters.com/article/idUSKBN2BH31P>

## Chinese envoy to UN proposes to realize non-proliferation through multilateralism

*China Military Online, March 31, 2021*

Ambassador Geng Shuang, Deputy Permanent Representative of China to the UN, made remarks on March 30 at a video conference of the UN Security Council reviewing the work of the 1540 Committee, calling for realizing the non-proliferation targets through upholding multilateralism. Geng Shuang noted that the proliferation of weapons of mass destruction (WMD) and their carriers concerns international peace and security and poses a common challenge to the international community. Resolution 1540 passed in 2004 is the first resolution on non-proliferation adopted by the Security Council and makes an important component of the international non-proliferation regime. Given the current global security situation, especially new dynamics in the non-proliferation field, Geng Shuang proposed four points on the non-proliferation efforts of international community.

First, efforts should be made to meet non-proliferation targets through multilateralism. Non-proliferation is a global challenge that should be resolved through multilateral cooperation under the UN's leadership and guidance. Second, the international non-proliferation regime should be consolidated. The international community must further enhance the universality of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the Biological Weapons Convention, and



the Chemical Weapons Convention, ensure their comprehensive, effective and balanced implementation, and intensify relevant treaties and mechanisms. Third, close attention must be paid to the risk of proliferation brought by emerging technologies. Emerging technologies, such as artificial intelligence, 3D printing, genome editing, and synthetic biology, are likely to be applied to the proliferation of WMD and the carriers.

[http://english.chinamil.com.cn/view/2021-03/31/content\\_10014637.htm](http://english.chinamil.com.cn/view/2021-03/31/content_10014637.htm)

### **China's FAST telescope opens to global scientists**

*Xinhua, March 31, 2021*

China's Five-hundred-meter Aperture Spherical Radio Telescope (FAST), the world's largest filled-aperture and most sensitive radio telescope, has officially opened to the world starting Wednesday. Hand-painting shows China's Five-hundred-meter Aperture Spherical Radio Telescope (FAST) at night in southwest China's Guizhou Province. Experts expect the gigantic telescope to bolster global astronomical research and find answers to some of the biggest unknowns in modern astrophysics and cosmology. Astronomers globally can submit their observation applications for evaluation till May 15 and the results will be announced on July 20, according to a statement by the National Astronomical Observatories (NAO) under the Chinese Academy of Sciences (CAS). Observations by overseas scientists will begin in August.

[http://www.xinhuanet.com/english/2021-03/31c\\_139850128.htm#:~:text=GUIYANG%2C%20March%2031%20\(Xinhua\),to%20the%20world%20starting%20Wednesday.&text=The%20competition%20for%20observation%20time,has%20already%20been%20very%20intense.](http://www.xinhuanet.com/english/2021-03/31c_139850128.htm#:~:text=GUIYANG%2C%20March%2031%20(Xinhua),to%20the%20world%20starting%20Wednesday.&text=The%20competition%20for%20observation%20time,has%20already%20been%20very%20intense.)

### **C. Pakistan**

#### **Grid connection for Pakistani Hualong One unit**

*World Nuclear News, March 19, 2021*

Omar Ayub Khan, Pakistan's federal minister For Power, Petroleum and Natural Resources, said in a tweet the reactor was connected to the grid at 9.37pm yesterday. Karachi 2 and 3 are being constructed under a contract worth about USD9 billion signed between China National Nuclear Corporation and the Pakistan Atomic Energy Commission in 2013. Construction of unit 2 began in 2015 and unit 3 in 2016. Installation of the reactor internals of Karachi 2 was completed in January 2019, while installation of unit 3's was completed in April last year.

Cold functional tests, carried out to confirm whether components and systems important to safety are properly installed and ready to operate in a cold condition, were completed at Karachi 2 in December 2019. The main purpose of those tests was to verify the leak-tightness of the primary circuit. Hot functional testing, which involves increasing the temperature of the reactor coolant system and carrying out comprehensive tests to ensure that coolant circuits and safety systems are operating as they should, was completed on 4 September. Hot testing simulates the thermal working conditions of the power plant and verifies that nuclear island and conventional equipment and systems meet design requirements.

<https://www.world-nuclear-news.org/Articles/Grid-connection-for-Pakistani-Hualong-One-unit>

## **K-2 nuclear power plant connected to grid**

*Dawn, March 19, 2021*

The Pakistan Atomic Energy Commission (PAEC) on Thursday announced that it had connected the much-awaited 1,100MW Karachi Nuclear Power Plant Unit-2 (K-2) to the national grid. In a statement, the PAEC termed it a 'Pakistan Day' gift to the nation. It said the nuclear power plant (NPP) had achieved criticality at the end of February and was undergoing certain safety tests and procedures before it could finally be connected to the national grid.

The loading of nuclear fuel onto the plant was started on December 1, 2020 after getting clearance from the Pakistan Nuclear Regulatory Authority. The PAEC pointed out that K-2 is the first nuclear power plant in Pakistan with a generation capacity of 1,100MW and its addition to the national grid will "surely help improve the economy of the country".

<https://www.dawn.com/news/1613286/k-2-nuclear-power-plant-connected-to-grid>

## **PPP founder of Pak nuclear programme: Zardari**

*The Nation, March 24, 2021*

Former president Asif Ali Zardari on Tuesday said that Pakistan People's Party was the founder of the country's nuclear programme. In a message, he felicitated the nation on Pakistan Day. Zardari said that on this day we should pay homage to the martyrs who sacrificed their lives for the country.

"Today is the day to reiterate our resolve to follow the ideology and philosophy of the founder of the nation, Quaid-e-Azam Muhammad Ali Jinnah. Shaheed Zulfikar Ali Bhutto and Shaheed Mohtarma Benazir Bhutto taught us to love our country. The country cannot forget the leaders who gave the nation the nuclear and missile technology," he said.

<https://nation.com.pk/24-Mar-2021/ppp-founder-of-pak-nuclear-programme-zardari>

## **Pakistan today conducted successful flight test of Shaheen-1A surface to surface ballistic missile, having a range of 900 kilometers.**

*ISPR, No PR-59/2021, March 26, 2021*

Pakistan today conducted successful flight test of Shaheen-1A surface to surface ballistic missile, having a range of 900 kilometers. The test flight was aimed at re-validating various design and technical parameters of the weapon system including advanced navigation system. Flight test was witnessed by Lieutenant General Nadeem Zaki Manj, Director General Strategic Plans Division, Dr Raza Samar, Chairman NESCOM, Lieutenant General Muhammad Ali, Commander Army Strategic Forces Command and the scientists and engineers of strategic organizations.

Director General Strategic Plans Division congratulated scientists and engineers on the conduct of this successful test. He appreciated the technical prowess, dedication and commitment of scientists and engineers, who contributed wholeheartedly in making the missile launch successful. President, Prime Minister of Pakistan, Chairman Joint Chiefs of Staff Committee and Services Chiefs have congratulated the scientists and engineers on successful conduct of today's missile test.

<https://ispr.gov.pk/press-release-detail.php?id=6104>

## **D. USA**

### **US warns China it will enforce sanctions on Iran oil shipments**

*Katrina Manson, Anjali Raval and Najmeh Bozorgmehr*

*Financial Times, March 17, 2021*

The Biden administration has told Beijing it will enforce Trump-era sanctions against Iranian oil as shipments from the Islamic regime to China have soared, a senior US official said. Iranian oil exports to China have been increasing "for some time now",

the senior administration official familiar with the Iran issue told the Financial Times in an interview.

Some observers had questioned whether the rise indicated that the Biden administration was turning a blind eye to the trade in an effort to encourage Tehran to join negotiations over a 2015 nuclear accord that the US abandoned in 2018. The Biden administration has made returning to the deal a priority. "We've told the Chinese that we will continue to enforce our sanctions," the senior administration official said. "There will be no tacit green light." The official indicated that sanctions could be waived during hoped-for talks between Washington and Tehran to revive the multi-party nuclear deal.

<https://www.ft.com/content/21eb2d88-3bae-4db3-944c-ba92f3924300>

### **Advanced nuclear reactors no safer than conventional nuclear plants, says science group**

*Timothy Gardner*

*Reuters, March 18, 2021*

A new generation of so-called "advanced" nuclear power reactors that Washington believes could help fight climate change often present greater proliferation risks than conventional nuclear power, a science advocacy group said. President Joe Biden, a Democrat, has made curbing climate change a priority and has supported research and development for advanced nuclear technologies. The reactors are also popular with many Republicans. Last October, the month before Biden was elected, the U.S. Department of Energy, awarded \$80 million each to TerraPower LLC and X-energy to build reactors it said would be operational in seven years.

Advanced reactors are generally far smaller than conventional reactors and are cooled with materials such as molten salt instead of with water. Backers say they are safer and some can use nuclear waste as fuel. "The technologies are certainly different from current reactors, but it is not at all clear they are better," said Edwin Lyman, director of nuclear power safety at the Union of

Concerned Scientists. "In many cases, they are worse with regard to ... safety, and the potential for severe accidents and potential nuclear proliferation," said Lyman, author of the report UCS released Thursday called "'Advanced' Isn't Always Better". Nuclear reactors generate virtually emissions-free power which means conventional ones, at least, will play a role in efforts to decarbonize the economy by 2050, a goal of the Biden administration. But several of the 94 U.S. conventional nuclear plants are shutting due to high safety costs and competition from natural gas and wind and solar energy. That has helped spark initial funding for a new generation of reactors. But fuel for many of those reactors would have to be enriched at a much higher rate than conventional fuel, meaning the fuel supply chain could be an attractive target for militants looking to create a crude nuclear weapon, the report here said. Also, nuclear waste from today's reactors would have to be reprocessed to make fuel. That technique has not been practiced in the United States for decades because of proliferation and cost concerns. Other advanced reactors emit large amounts of radioactive gases, a potentially problematic waste stream.

Lyman said advanced nuclear development funds would be better spent on bolstering conventional nuclear plants from the risks of earthquakes and climate change, such as flooding. The report recommended that the Department of Energy suspend its advanced reactor demonstration program until the Nuclear Regulatory Commission (NRC) requires prototype testing before reactors can be licensed for commercial use. The DOE did not immediately respond to a request for comment. Brett Rampal, director of nuclear innovation at Clean Air Task Force, a nonprofit that supports advanced nuclear to fight climate change and cut harmful emissions, said the report's conclusions were not based on rigorous assessment of the industry. Rampal said if the DOE acted on the recommendation it would "essentially cease innovation in nuclear energy today."

<https://www.reuters.com/article/idUSKBN2BA0CP>



## Help central banks measure climate risk, says NGFS

*World Nuclear News, March 19, 2021*

Greening the financial system involves looking beyond reference scenarios and towards tools that measure exposure to climate risk, Morgan Després, deputy head of the Financial Stability Department at Banque de France, said yesterday during World Nuclear Association's Strategic eForum on Sustainable Finance. Després, who leads the secretariat of the Network for Greening the Financial System (NGFS), said a bank's traditional mandate will change as it re-evaluates the boundaries of monetary policy. To help with this process, a 'colour continuum' from light green to dark brown is needed to understand better the value - and risk - of investments in the clean energy transition.

NGFS was established by eight central banks and supervisors at the One Planet Summit, held in Paris in December 2017, with the aim of sharing best practices, contributing to the development of climate and environment related risk management in the financial sector, and mobilising mainstream finance to support the transition towards a sustainable economy. Eight has since grown to 66.

<https://www.world-nuclear-news.org/Articles/Help-central-banks-measure-climate-risk-says-NGFS>

## US Defense Department eyes 2022 for microreactor build decision

*World Nuclear News, March 19, 2021*

The US Department of Defense's (DOD) project to develop a mobile reactor - Project Pele - is on track for full power testing of a mobile reactor in 2023, with outdoor mobile testing at a Department of Energy (DOE) installation in 2024, DOD's Jeff Waksman told the US Nuclear Regulatory Commission's 33rd Regulatory Information Conference last week.

The DOD needs a mobile, reliable, sustainable, and resilient power source which does not require a long logistics tail,

said Waksman, who is programme manager for the Strategic Capabilities Office (SCO) within the Office of the Secretary of Defense. Advances in nuclear technology have made possible a largely autonomous, fully inherently safe reactor which can be safely moved. TRISO - TRIStructural-ISOtropic - fuel is the "game-changing" element that DOD believes will make this feasible, he said.

<https://www.world-nuclear-news.org/Articles/US-Defense-Department-eyes-2022-for-microreactor-b>

## NextEra wants to build solar farm at closed Iowa nuclear plant

*Reuters, March 20, 2021*

U.S. energy company NextEra Energy Inc said this week it wants to build a 690-megawatt (MW) solar project at the site of its closed Duane Arnold nuclear plant in Iowa. NextEra's NextEra Energy Resources unit proposed to build the \$700 million project, which it said on its website will create about 300 construction jobs. The company shut the nuclear reactor in August 2020 after a massive storm damaged the plant's cooling towers. NextEra had planned to retire the plant in October 2020.

NextEra Energy Resources, the world's largest generator of renewable energy via wind and sun, operates solar projects in 27 states, according to the company's website. The Iowa project will encompass about 3,500 acres and is scheduled to begin operations by the end of 2023. With the Biden administration seeking to get all of the nation's electricity from clean energy sources by 2035, Iowa is well on its way to transitioning away from dirty fossil fuels, like coal, to cleaner forms of energy like wind and solar. Wind generated 58% of the power produced in the state in 2020, with the rest mostly coming from coal (24%), natural gas (12%), nuclear (5%) and hydro (1%), according to data from the U.S. Energy Information Administration (EIA).

<https://www.reuters.com/article/idUSKBN2BB281>

## Lightbridge and Framatome end Enfission joint venture

*World Nuclear News, March 23, 2021*

Lightbridge Corporation and Framatome have agreed to dissolve their Enfission joint venture. Launched in January 2018, Enfission was to develop, license and sell nuclear fuel assemblies based on Lightbridge's innovative metallic nuclear fuel technology. Reston, Virginia-based Lightbridge's fuel is made from a zirconium-uranium alloy and uses a unique composition and fuel rod geometry, which the company says can significantly reduce fuel operating temperatures, improve the fuel's structural integrity and enhance its response to abnormal events.

Lightbridge and Framatome - then Areva - in 2016 launched an engineering task force to verify the promise of Lightbridge's fuel. A binding agreement to set up a joint venture to develop, manufacture and commercialise Lightbridge's advanced metallic fuel technology was signed in September 2017. Under the joint venture agreement, Enfission was to produce Lightbridge fuel assemblies initially for operators of US commercial nuclear power plants, followed with production of Lightbridge fuel assemblies for other types of reactors and for markets around the world.

<https://www.world-nuclear-news.org/Articles/Lightbridge-and-Framatome-end-Enfission-joint-vent>

## US HALEU facility set for 2022 start-up

*World Nuclear News, March 23, 2021*

The USA's first production facility for high-assay low-enriched uranium (HALEU) is expected to begin production early next year, Centrus Energy has announced. The facility is under construction at Piketon, Ohio. Centrus is licensing and constructing the cascade of 16 AC100M centrifuges to demonstrate production of HALEU under a three year, USD115 million cost-shared contract signed in 2019 with the US Department of Energy (DOE) Office of

Nuclear Energy."Centrus has completed all required HALEU Demonstration Program milestones to date and remains on track to complete the remaining milestones on time," the company said today. Programme completion is expected "no later than June 2022".

HALEU fuel is enriched to between 5% and 20% uranium-235 and will be required by many advanced reactor designs that are currently under development, but is not yet commercially available in the USA. Nine of the 10 reactor designs selected by the DOE for its Advanced Reactor Demonstration Program are expected to operate on HALEU, Centrus said. The objective of the Centrus contract is to demonstrate a technology that could be used for any type of reactor - including defence reactors - that require the use of HALEU fuel produced using US-origin technology.

<https://www.world-nuclear-news.org/Articles/US-HALEU-facility-set-for-2022-start-up>

## Swift action needed to rebuild world's energy system: Korsnick

*World Nuclear News, March 24, 2021*

Nuclear energy is the key to making climate commitments work and will play a critical role in meeting the Biden Administration's ambitious climate goals, Nuclear Energy Institute (NEI) President and CEO Maria Korsnick told the organisation's annual State of the Nuclear Energy Industry event yesterday. "There is no bigger opportunity in front of us than rebuilding the world's energy system around carbon-free sources," Korsnick said, adding that there is "no more debate about the need for swift action".

Over the last year, utilities, state governments, and the new Administration have made "concrete commitments" to bring carbon emissions from electricity generation close to zero by 2035 - even sooner than the 2050 target already acknowledged to be necessary to avoid the worst effects of climate change, she said. "Fortunately, as we strive to meet those



commitments, the US leads the world in producing a proven, carbon-free, scalable source of electricity, that enjoys bipartisan support," she said. "That source is nuclear energy. And there's no more serious debate: It's the key to making our climate commitments work."

<https://www.world-nuclear-news.org/Articles/Swift-action-needed-to-rebuild-world-s-energy-syst>

### **BWXT and X-Energy selected to develop Project Pele mobile microreactor**

*World Nuclear News, March 24, 2021*

The two teams have been selected through a preliminary design competition which began in April 2019. Three companies - BWX Technologies, Westinghouse Government Services and X-energy - were selected last year to begin preliminary design work for a prototype reactor. One of the remaining two companies may be selected to build and demonstrate a prototype after a final design review early next year, and the completion of an environmental analysis under the US National Environmental Protection Act, DOD said. Jeff Waksman, Project Pele programme manager, said: "We are confident that by early 2022 we will have two engineering designs matured to a sufficient state that we will be able to determine suitability for possible construction and testing."

The DOD uses about 30 TWh of electricity per year and more than 10 million gallons of fuel per day, and these are expected to increase due to anticipated electrification of the vehicle fleet and maturation of future energy-intensive capabilities, DOD said. A safe, small, transportable nuclear reactor could meet this demand with a resilient, carbon-free energy source that does not add to DOD's fuel needs, while supporting mission-critical operations in remote and austere environments, it said.

<https://www.world-nuclear-news.org/Articles/BWXT-and-X-Energy-selected-to-develop-Project-Pele>

### **US BWR to receive Framatome accident tolerant fuel**

*World Nuclear News, March 25, 2021*

PROtect EATF is more tolerant to loss of active cooling in the reactor core for longer periods because its reduced oxidation behaviour increases "coping time", the company said. The fuel also offers improved performance during normal operations, allowing operators greater flexibility and efficiency. The US Department of Energy has since 2012 supported the development of ATF concepts, including Framatome's, through its EATF programme. The PROtect EATF will be loaded into the reactor during this year's refuelling outage and delivery of reloads of ATRIUM 11 advanced BWR nuclear fuel will start in the spring of 2023.

The ATRIUM-11 design uses an 11x11 rod array and chromia-enhanced uranium oxide pellets. This allows operators to run plants with more flexibility in response to fluctuating power demands while improving uranium utilisation and plant efficiency, resulting in lower costs for utilities, Framatome said. The first lead fuel assemblies of ATRIUM 11 were inserted into plants in Europe in 2012 and in the USA in 2015, and the first reloads using the fuel were delivered and inserted in Europe in 2018 and in the USA in 2020.

<https://www.world-nuclear-news.org/Articles/US-BWR-to-receive-Framatome-accident-tolerant-fuel>

### **Lightbridge to prioritise SMR fuel development**

*World Nuclear News, March 25, 2021*

Lightbridge Corporation has decided to prioritise developing fuel for future small modular reactors rather than fuel for large reactor designs, President and CEO Seth Grae said in a business update ahead of a webcast and conference call to discuss the company's financial results. The company is also contemplating a zirconium-plutonium version of its fuel. Reston, Virginia-based Lightbridge has over the

course of the past year taken steps to reduce many of the risks associated with its business, he said. These include the recently announced settlement agreement with Framatome terminating their Enfission joint venture, allowing Lightbridge now to pursue “various promising opportunities” unencumbered by any constraints on the Lightbridge Fuel technology platform, Grae said.

In the webcast, Grae said the company had initially focused on large pressurised water reactors (PWRs). However, it now expects that Chinese and Russian companies will account for most of the net worldwide growth in large reactors in the period to 2050.

<https://www.world-nuclear-news.org/Articles/Lightbridge-to-prioritise-SMR-fuel-development>

### **Centrus expects to begin HALEU production in 2022**

*Nuclear Engineering, March 25, 2021*

US-based Centrus Energy Corp on 23 March provided an update on construction of the USA’s first production facility for High-Assay, Low-Enriched Uranium (HALEU) in Piketon, Ohio, saying it hoped to begin production next year. “Despite the impact of the pandemic and the extraordinary steps we have taken to protect our workforce – including limiting the number of people who can be on the construction site at any one time – we have kept construction on track and expect to begin producing HALEU by next year,” said Centrus President and CEO Daniel B Poneman. “We believe this first-of-a-kind facility can play a critical role in meeting both government and commercial requirements for HALEU, powering America’s nuclear leadership as the world turns to a new generation of advanced reactors and advanced nuclear fuels.”

<https://www.neimagazine.com/news/newscentrus-expects-to-begin-haleu-production-in-2022-8625820>

### **Ohio legislature sends bill revoking nuclear power subsidy to governor**

*Reuters, March 26, 2021*

Both houses of Ohio’s state legislature passed a bill that would repeal nuclear subsidies for Energy Harbor Corp’s Davis-Besse and Perry reactors in the state. House Bill 128 (HB128) now heads to the governor’s office for approval after the House passed an amended version on Thursday. The legislation would confirm what state courts have already done in halting collection of the subsidies under House Bill 6 (HB6). Ohio Governor Mike DeWine’s office said the governor intends to sign the bill but has not done so yet.

In 2019, the legislature passed HB6 to keep the money-losing nuclear plants in service to preserve jobs, tax revenues and because the reactors generate lots of energy without producing carbon dioxide emissions. But HB6, which would pay Energy Harbor about \$1 billion over six years, became tainted after it was revealed that it passed the legislature through alleged acts of bribery. HB6 passed when Energy Harbor was still known as FirstEnergy Solutions, a bankrupt unit of FirstEnergy Corp, which threatened to close the reactors unless the state provided financial support.

<https://www.reuters.com/article/idUSL1N2LO1UN>

### **U.S. senators push for broader Iran deal, not return to nuclear pact**

*Patricia Zengerle*

*Reuters, March 26, 2021*

Forty-three U.S. senators, many of whom opposed the 2015 nuclear agreement with Iran, appealed to President Joe Biden on Thursday to work toward an international agreement that addresses issues beyond just Tehran’s nuclear program. The letter was released as the Democrat Biden’s

administration explores ways to restore the nuclear pact that Iran signed with the United States and other world powers, but was abandoned in 2018 by then-President Donald Trump, a Republican who reimposed sanctions. Iran retaliated by breaching the terms of the accord in a step-by-step response. "Democrats and Republicans may have tactical differences, but we are united on preventing an Iranian nuclear weapon and addressing the wide range of Iranian behavior," the senators wrote in a letter to Biden.

<https://www.reuters.com/article/idUSKBN2BH31B>

### **U.S. condemns North Korea's ballistic missile launches as 'destabilizing'**

*Reuters, March 26, 2021*

The United States condemned North Korea's ballistic missile launches this week and said the country's nuclear and ballistic missile programs constituted serious threats to international peace and security. "The United States condemns (North Korea's) destabilizing ballistic missile launches," a State Department spokesman said. "These launches violate multiple U.N. Security Council resolutions and threaten the region and the broader international community." North Korea said earlier it test-fired a "newly developed new-type tactical guided projectile" on Thursday and the pair of weapons accurately hit a target 600 km (370 miles) away.

The State Department spokesman called North Korea's nuclear and ballistic missile programs "unlawful" and said they "constitute serious threats to international peace and security and undermine the global nonproliferation regime." He said the U.S. commitment to the defense of South Korea and Japan "remains ironclad."

<https://www.reuters.com/article/idUSKBN2BH3JH>

### **Biden warns of responses if North Korea escalates, but open to diplomacy**

*By David Brunnstrom, Jarrett Renshaw*

*Reuters, March 26, 2021*

President Joe Biden said on Thursday the United States remained open to diplomacy with North Korea despite its ballistic missile tests this week, but warned there would be responses if North Korea escalates matters.

Biden told his first White House news conference the missile tests by Pyongyang violated U.N. resolution 1718, a 2006 measure through which the world body imposed sanctions on North Korea for missile and nuclear tests. "We are consulting with our allies and partners, and there will be responses if they choose to escalate. We will respond accordingly," Biden said. "I'm also prepared for some form of diplomacy, but it has to be conditioned upon the end result of denuclearization," he added, referring to the U.S. effort to persuade North Korea to give up its nuclear weapons.

<https://www.reuters.com/article/idUSKBN2BH2Z2>

### **U.S. tries to break Iran nuclear deadlock with new proposal for Tehran**

*Nahal Toosi*

*Politico, March 29, 2021*

If President Joe Biden is serious about rejoining the Iran nuclear deal, then the next few weeks could prove make-or-break as the politics in both Washington and Tehran appear poised to intensify. Biden administration officials, mindful of the increasingly unfavorable calendar, plan to put forth a new proposal to jump-start the talks as soon as this week, two people familiar with the situation told politico.

The proposal asks Iran to halt some of its nuclear activities, such as work on advanced centrifuges and the enrichment of uranium to 20 percent purity, in exchange for some relief from U.S. economic sanctions, said one of the people, who stressed that the details are still being worked out. It's not at all certain that Iran will accept the terms. Earlier this year, Tehran rejected a U.S. proposal it deemed unacceptable, then offered its own idea that Biden's team declared a non-starter, two people familiar with the situation said.

<https://www.politico.com/news/2021/03/29/us-biden-iran-nuclear-deal-478354>

### *E. Europe*

#### **Swedish scientist near death after months in solitary confinement in Iran, say UN experts**

*Reuters, March 16, 2021*

Swedish-Iranian scientist Ahmadreza Djalali, sentenced to death in Iran on espionage charges, is in critical condition and near death after months of prolonged solitary confinement, U.N. human rights experts said. "Djalali's situation is truly horrific," the experts said. In an appeal calling on Iran to release him, they said he had been held in solitary confinement for more than 100 days, with prison officials shining bright lights in his cell round the clock to deprive him of sleep. "Medical issues have prevented him from eating properly, resulting in dramatic weight loss," said the experts, who include the U.N. special rapporteurs on the situation in Iran, arbitrary executions, arbitrary detentions and torture.

"His situation is so difficult that he reportedly has trouble speaking. We are shocked and distressed by the cruel mistreatment of Mr. Djalali." A call to the Iranian diplomatic mission in Geneva seeking comment was not immediately returned. Djalali, a medical doctor and lecturer at the Karolinska Institute in the Swedish capital Stockholm, was arrested in Iran in 2016 and later convicted of espionage, accused of providing information

to Israel to help it assassinate nuclear scientists. Iran's Supreme Court in 2017 upheld the death sentence. The U.N. experts said Djalali's conviction and sentence were based on a confession extracted under torture and after an unfair trial. His treatment was emblematic of Iran's systematic use of solitary confinement "to punish and pressurise detainees, including to make forced confessions," they said. Rights activists have accused Iran of jailing a number of dual nationals to try to win concessions from other countries. Tehran has regularly dismissed the accusations and says its judicial system is fair.

<https://www.reuters.com/article/idUSKBN2BA1A9>

#### **France's Macron admonishes Iran amid slow progress on nuclear talks**

*Reuters, March 18, 2021*

French President Emmanuel Macron accused Iran of continuing to violate a 2015 nuclear deal with world powers, and said Tehran should act responsibly. France, along with Britain, Germany and the European Union, is trying to bring the United States and Iran to the table for informal talks that would be a first step to reviving the 2015 deal, which lifted international sanctions on Tehran in exchange for curbs to its nuclear programme.

Both sides so far appear unwilling to compromise. The Iranian New Year this week and campaigning for the country's presidential election in June are also likely to complicate matters. "Iran must stop aggravating a serious nuclear situation with an accumulation of violations of the Vienna accord," Macron said alongside President Reuven Rivlin of Israel, an arch foe of Iran in the Middle East region. "Iran must make the expected gestures and behave in a responsible way," Macron added. Macron said Paris would continue to work to revive a credible process to end this crisis. "That means a return to control



and supervision of the nuclear programme, but also to integrating - as we have called for since 2017 - the control of Iran's ballistic missile activity," he added.

<https://www.reuters.com/article/idUSKBN2BA21W>

### **EDF trade unions call for new strike on April 8: union sources**

*Reuters, March 19, 2021*

Trade unions at French state-controlled power group EDF have called for a new strike on April 8, in protest at the "Project Hercules" restructuring planned for EDF, said two trade union sources. The restructuring is seen by EDF as key to boosting its revenues and investment plans and covering its costs. But France and the European Commission have been wrangling for months over the extent to which the nuclear power unit and various divisions at EDF need to be kept separate, in order to avoid creating a structure in which all its business would benefit from a form of state aid. Trade unions have also expressed concerns that the restructuring could lead to job cuts.

<https://www.reuters.com/article/idUSKBN2BB0WP>

### **French power supplies could be strained until 2024**

*Reuters, March 24, 2021*

The COVID-19 pandemic has delayed renewable energy projects and maintenance work at nuclear power plants in France, meaning electricity supplies could be tight until 2024, grid operator RTE said. RTE said it had revised down estimates for the availability of France's nuclear fleet for the next three winters, with the 2021-22 season requiring "special vigilance".

Renewable power plans have also been disrupted, with 2023 goals unlikely to be met for solar power and to a lesser extent for onshore wind, RTE said. It said security of supply should improve to a more

comfortable position in 2024-2026, with a clear improvement in 2026-2030.

<https://www.reuters.com/article/idUSKBN2BG1FV>

### **UK PM Johnson says nuclear warhead cap increase is for minimum deterrent**

*Reuters, March 24, 2021*

British Prime Minister Boris Johnson said on Wednesday the decision to raise the cap on the number of Britain's nuclear warheads by 40% was to ensure a minimal credible deterrent, but it was not a target. "It's crucial to stress that the number in question that's in the integrated review is a ceiling, it's not a target," he told lawmakers, referring to a security and defence review which said the cap on warheads would be raised to a maximum of 260. "We remain as a government committed to the minimum credible deterrent, it's very important for everybody to understand that as well."

<https://www.reuters.com/article/idUSKBN2BG2IT>

### **U.S., UK, Germany and France discuss peace initiatives for Yemen**

*Reuters, March 24, 2021*

U.S. Secretary of State Antony Blinken and foreign ministers of Britain, Germany and France met on Tuesday to discuss peace initiatives for Yemen, British foreign minister Dominic Raab said. "From pushing for peace in Yemen to preventing Iran from becoming a nuclear power, Britain, U.S., France, Germany stand together as force for good," Raab said in a tweet, using images of the flags of the four countries instead of naming them in words in his message.

<https://www.reuters.com/article/idUSKBN2BF30J>



## EU climate policy risks sidelining nuclear power, seven countries say

*Kate Abnett*

*Reuters, March 25, 2021*

France, Poland and five other countries have written to the European Commission, warning that EU climate change policies could hamper nuclear power's role in cutting CO2 emissions. The letter, dated March 19, arrived as Brussels is finishing landmark green finance legislation designed to steer cash into low-carbon projects, with the Commission yet to decide whether the EU rules will label nuclear power as a sustainable investment.

In the letter to the Commission, seen by Reuters, the countries said the EU should do more to put nuclear power on a level footing with other low-carbon technologies in climate policies, including the sustainable finance rules. "We are highly concerned that the Member State's right to choose between different energy sources and the right to determine the general structure of the energy supply is currently heavily limited by EU policy making, which excludes nuclear power from more and more policies," they said. It was signed by French President Emmanuel Macron and the Prime Ministers of Hungary, Poland, Czech Republic, Romania, Slovakia and Slovenia.

<https://www.reuters.com/article/us-energy-eu-nuclear/eu-climate-policy-risks-sidelining-nuclear-power-seven-countries-say-idUSKBN2BG2Y0>

## Czechs open preliminary round in nuclear project, keep Russia in for now

*Robert Muller, Jason Hovet*

*Reuters, March 25, 2021*

The Czech Industry Ministry has decided to invite four bidders including Russia to pre-qualify for a tender to build a new nuclear power plant, but a final decision on who will be allowed to bid will be made after an October election, it said. The plan to build a new 1,200 megawatt (MW) unit at the

Dukovany plant owned by state-controlled CEZ has been dogged by rifts over whether to allow Russia and China into the EU and NATO country's costly and strategically sensitive project. Security services and opposition parties, which have a chance of winning the election, have argued that it was not desirable that either of the two countries gain influence by leading the project worth at least 6 billion euros, plus inflation.

The government has agreed not to invite China but has wanted to keep in Russia's Rosatom, seen as a strong contender with the backing of pro-Russian President Milos Zeman. Other potential bidders are South Korea's KHNP, France's EDF and Westinghouse of the United States.

<https://www.reuters.com/article/idUSL1N2LN1WN>

## EU experts to say nuclear power qualifies for green investment label: document

*Kate Abnett*

*Reuters, March 27, 2021*

Experts tasked with assessing whether the European Union should label nuclear power as a green investment will say that the fuel qualifies as sustainable, according to a document reviewed by Reuters. The European Commission is attempting to finish its sustainable finance taxonomy, which will decide which economic activities can be labelled as a sustainable investment in the EU, based on whether they meet strict environmental criteria. Brussels' expert advisors last year split over whether nuclear power deserved a green label, recognising that while it produces very low planet-warming CO2 emissions, more analysis was needed on the environmental impact of radioactive waste disposal.

The Commission asked the Joint Research Centre (JRC), its scientific expert arm, to report on the issue. A draft of the JRC report, seen by Reuters and due to be published next week, said nuclear deserves

a green label. "The analyses did not reveal any science-based evidence that nuclear energy does more harm to human health or to the environment than other electricity production technologies," it said. Storage of nuclear waste in deep geologic formations is deemed "appropriate and safe", it said, citing countries including France and Finland in the advanced stages of developing such sites. Two expert committees will scrutinise the JRC's findings for three months, before the Commission takes a final decision.

<https://www.reuters.com/article/idUSKBN2BJ0F0>

### **Johnson and Biden share UK-US concern about Chinese response to sanctions - spokesman**

*Reuters, March 27, 2021*

Prime Minister Boris Johnson and U.S. President Joe Biden expressed concern on Friday about the Chinese response to the imposition of sanctions on its officials, and saying Iran had to come back into compliance with the nuclear deal. The United States and Britain together with the European Union and Canada imposed sanctions on Chinese officials over human rights abuses in Xinjiang, the first such coordinated action since Biden became president. China has responded by imposing sanctions itself on nine Britons, including lawmakers from Johnson's Conservative Party, along with EU lawmakers and other European institutes.

"The prime minister and president reflected on the significant action taken by the UK, U.S. and other international partners earlier this week to impose sanctions on human rights violators in Xinjiang and expressed their concern about retaliatory taken action by China," a spokesman for Johnson said in a statement after the leaders spoke. The statement said Biden and Johnson had also agreed there was a need for "Iran to come back into compliance with the nuclear deal" and they shared views on climate change.

<https://www.reuters.com/article/idUSKBN2BI2Y9>

### **Lebanon PM warns of 'dangerous chemicals' in southern oil facility**

*Reuters, March 27, 2021*

Lebanon's outgoing prime minister said on Friday that experts had found "dangerous chemicals" at a warehouse at the Zahrani oil installations in the south. Hassan Diab said the country's atomic energy authority identified the substances as "nuclear" after reviewing a report by German company Combi Lift, which Lebanon had tasked with clearing hazardous material at Beirut port. The comments came nearly eight months after a stockpile of chemicals detonated in Beirut, killing nearly 200 people in one of the largest non-nuclear explosions on record. The ammonium nitrate went up in flames after being stored unsafely at the port for years. A Combi Lift spokesman confirmed to Reuters that the firm was in talks with Lebanon over potential recovery projects in Tripoli and Zahrani refineries but said there were no concrete results yet. "We don't want to comment on possible finds," the spokesman said. Diab appealed for action, without elaborating.

Lebanon's oil directorate said the canisters, which totaled 1.2 kg (2.7 lb), were just used for research and would be transferred next week for safe storage. "We assure the Lebanese...there is no reason for any fear," the directorate said. Diab's cabinet has served in a caretaker capacity since resigning over the devastation that last August's explosion wreaked in much of the Lebanese capital, compounding an already acute financial crisis. After Lebanon hired Combi Lift in the wake of the blast, the German firm said it had found 58 containers at Beirut port that posed a threat to the city. Some of it had been there for more than a decade.

<https://www.reuters.com/article/idUSKBN2BI2YP>

## *F. Russia*

### **Putin offers Biden public talks after U.S. president says he thinks he is a killer**

*Andrew Osborn, Tom Balmfort*

*Reuters, March 18, 2021*

President Vladimir Putin said on Thursday that he and U.S. President Joe Biden should hold live online talks in coming days after Biden said he thought the Russian leader was a killer and diplomatic ties sank to a new post-Cold War low. Putin, speaking on television, cited a Russian children's playground chant to scathingly respond to Biden's accusation with the comment that "he who said it, did it." In an ABC News interview broadcast on Wednesday that prompted Russia to recall its Washington ambassador for consultations, Biden said "I do" when asked if he believed Putin was a killer.

Biden was quick to extend a nuclear arms pact with Russia after he took office. But his administration has said it will take a tougher line with Moscow than Washington did during Donald Trump's term in office, and engage only when there is a tangible benefit for the United States. Putin said he had last spoken to Biden by phone at the U.S. president's request and that he now proposed they had another conversation, on Friday or Monday, to be held by video-link and broadcast live. "I want to offer President Biden that we continue our discussion, but on the condition that we do it live, online, without any delays," Putin said, when asked in a television interview about Biden's comments. The two leaders last spoke by telephone on Jan. 26 days after Biden took office. White House spokeswoman Jen Psaki on Thursday said Biden had no regrets about calling Putin a killer and swatted away a question about Putin's request for an immediate call in public.

<https://www.reuters.com/article/idUSKBN2BA0S1>

### **Russian Navy to get three nuclear-powered submarines by year-end**

*TASS News Agency, March 19, 2021*

The Project Borei-A strategic underwater cruiser Knyaz Oleg and the Project Yasen nuclear-powered submarines Kazan and Novosibirsk will enter service with the Russian Navy until the end of this year, Navy Commander-in-Chief Admiral Nikolai Yevmenov said on Friday. "Until the end of the year, the Russian Navy will get the Project Borei-A strategic missile-carrying underwater cruiser Knyaz Oleg and the Yasen-class nuclear-powered underwater cruisers Kazan and Novosibirsk that are being built at the Sevmash Shipyard," the Navy chief said in an interview with the Defense Ministry's newspaper Krasnaya Zvezda.

The Knyaz Oleg is the improved Project 955A (Borei-A) first serial-produced fourth-generation submarine that was floated out on July 16 last year. The submarines of this class are designed to make the basis of Russia's seaborne strategic nuclear forces. They carry 16 Bulava intercontinental ballistic missiles as their basic armament. Yasen-class submarines carry Kalibr-PL and Oniks cruise missiles as their strike weapons.

<https://tass.com/defense/1267871>

### **Three Russian nuclear subs surface from under Arctic ice for first time, says Navy chief**

*TASS News Agency, March 26, 2021*

Three Russian nuclear-powered submarines simultaneously surfaced from under the ice at a distance of up to 300 meters from each other for the first time in history during Arctic drills, Navy Commander-in-Chief Admiral Nikolai Yevmenov reported to Russian President Vladimir Putin. "As part of the Arctic expedition, three nuclear-powered submarines surfaced from under the ice in a limited space with a radius of 300

meters for the first time in the history of the Russian Navy," he said. A comprehensive Arctic expedition, Umka-2021, is underway in the area of the Franz Josef Land archipelago, the Alexandra Land Island and the adjacent waters with the participation of the Russian Geographical Society, the admiral reported.

<https://tass.com/defense/1270875>

### Three Russian submarines surface and break Arctic ice during drills

*Reuters, March 26, 2021*

Three Russian nuclear ballistic missile submarines have surfaced simultaneously breaking the Arctic ice during drills, reported the commander-in-chief of the Russian fleet at a meeting with President Vladimir Putin via videolink. The commander, Nikolai Yevmenov, said the sophisticated manoeuvre was carried out by submarines "for the first time in the history of the Russian Navy". The submarines surfaced within a 300 meters radius and the ice they broke was 1.5 meter deep, the admiral added. The Kremlin has pushed to beef up defences in the Arctic, which Putin has touted as a vital region for Russian interests as climate change makes it more accessible.

The Russian defence ministry published footage of the submarines emerging from underneath the ice with loud noise. After one of them surfaced, a sailor showed up on top of it and waved at a camera with his hand. The drill was held near Franz Josef Land Archipelago in the Arctic Ocean and was aimed at testing Russian military hardware in extreme weather conditions. "The Arctic expedition... has no analogues in the Soviet and the modern history of Russia," Putin said.

<https://www.reuters.com/article/idUSKBN2BI2RZ>

### Russia amends terms for Belarus NPP loan agreement

*Nuclear Engineering, March 29, 2021*

Russian President Vladimir Putin has signed a law on the ratification of a protocol

amending the Russian-Belarusian intergovernmental agreement on the loan extended by Russia for the construction of the Belarus NPP. The document was published on 24 March on the Russian Official Internet Portal of legal information. The protocol was signed on 14 July 2020 and was approved by parliament earlier in March 2021. The protocol extends the period of use of the loan by two years - until the end of 2022. In addition, a fixed interest rate on the loan is set at 3.3% a year, and the start date of the repayment of the principal debt on the loan has been deferred from 1 April 2021 to 1 April 2023. If debt is not repaid on time, after 180 days, the entire amount, including any interest on the loan and its servicing, will be consolidated and must be repaid immediately, the document states.

The 2011 intergovernmental agreement on the construction of the Belarus nuclear power plant provides for cooperation in the design, construction and turnkey commissioning of two power units with a capacity of 1200MW each. For these purposes, Russia issued a loan of up to \$10 billion to Belarus. Funds were provided to finance 90% of the cost of the general contract for the construction of the plant, with 10% paid by Belarus. Repayment was supposed to begin six months after the power plant was put into operation, but no later than 1 April 2021. Repayment was to be in 30 equal shares every six months with 50% of the amount attracting interest at a rate of 5.23% a year and the rest at the LIBOR rate for 6-month deposits in US dollars, increased by a margin of 1.83% a year. Belarus asked for the loan to be restructured because of the decrease in the level of world prices for oil and gas, as well as the postponement of the commissioning of two units from 2018 to 2022.

<https://www.neimagazine.com/news/newsrussia-amends-terms-for-belarus-npp-loan-agreement-8633297>



## West Asia

### G. Iran

#### Iran's Zarif says time running out for U.S. to revive nuclear deal

*Reuters, March 15, 2021*

The United States should act quickly to revive Iran's nuclear deal, because once Iran's presidential election period kicks off it is unlikely much will happen until later this year, Iranian Foreign Minister Javad Zarif said on Monday. Speaking at the European Policy Centre think tank, Zarif repeated Tehran's longstanding demand that Washington return first to compliance by lifting sanctions. Former U.S. President Donald Trump abandoned the deal, known as the JCPOA, under which Iran accepted curbs to its nuclear programme in return for the lifting of sanctions. Since then, Washington has reimposed sanctions and Tehran has responded by violating some of the conditions of the deal.

President Joe Biden aims to restore the deal, but Tehran and Washington each want the other side to comply first. "The Europeans are used to compromise. Iran and the United States are not. The Americans are used to imposing, and we are used to resisting," Zarif said. "So now is the time to decide: will we both compromise and go back to the JCPOA, or will we go back to our own paths?" Zarif said that he had seen no change between the Biden administration and the Trump administration's policy of maximum pressure to force Iran back to the negotiating table. He said he saw no reason to hold preliminary talks, because the U.S. was making "extraneous" demands.

<https://www.reuters.com/article/idUSKBN2B70VV>

#### Iran says to cold test redesigned Arak nuclear reactor

*Reuters, March 19, 2021*

Iran will cold test its redesigned Arak nuclear reactor as prelude to fully commissioning it later in the year, Iran's Atomic Energy Organization said. Spokesman Behrouz Kamalvandi was

quoted by local media as saying the cold testing, which usually include the initial startup of fluid systems and support systems, will take place early in the Iranian new year that begins this Sunday. "In other words, we have advanced work in the field of fuel, storage, etc," Kamalvandi said. Iran has recently accelerated its breaches of the 2015 international nuclear deal in an apparent bid to pressure U.S. President Joe Biden to reverse his predecessor's abandonment of the agreement. Both sides are locked in a standoff over who should move first to save the deal.

Iran agreed to shut down the reactor at Arak - about 250 km (155 miles) southwest of Tehran - under the 2015 deal. It was allowed to produce a limited amount of heavy water and Tehran has been working on redesigning the reactor. It says it plans to make isotopes for medical and agricultural use. The International Atomic Energy Agency said in a report to member states earlier this week that Iran has started enriching uranium at its underground Natanz plant with a second type of advanced centrifuge, the IR-4, in a further breach of the deal. Last year Iran started moving three cascades, or clusters, of different advanced models of centrifuge from an above-ground plant at Natanz to its below-ground Fuel Enrichment Plant (FEP). It is already enriching underground with IR-2m centrifuges. The deal only lets it enrich there with first-generation IR-1 machines. Iran is enriching up to 20% purity at another plant, Fordow.

<https://www.reuters.com/article/idUSKBN2BB0K0>

#### Khamenei says U.S. promises have no credibility for Iran

*Reuters, March 21, 2021*

Iran does not trust U.S. promises on lifting sanctions and will only return to its commitments under a 2015 nuclear deal once Washington fully removes the measures, Iranian Supreme Leader Ayatollah Ali Khamenei said. The administration of U.S. President Joe Biden is exploring ways to restore the 2015



nuclear deal that Iran signed with major world powers, but which was abandoned in 2018 by President Donald Trump, who reimposed sanctions. Iran retaliated by breaching the terms of the accord in a step-by-step response.

“We trusted America at the time of (former U.S. President Barack) Obama and fulfilled our commitments. But they didn’t. The Americans said on paper that sanctions will be lifted, but they didn’t lift sanctions in practice,” Khamenei said in a speech on state TV. “Their promises have no credibility for us.”

<https://www.reuters.com/article/idUSKBN2BD0IN>

### **As Iran toughens stance, hopes for nuclear thaw before June diminish**

*John Irish, Parisa Hafezi, Arshad Mohammed*

*Reuters, March 26, 2021*

The odds of Washington and Tehran making progress to revive the 2015 nuclear deal before Iran’s June elections have dwindled after Iran opted to take a tougher stance before returning to talks, diplomats and officials said. U.S. President Joe Biden’s administration has said it is ready to talk to Iran about both nations resuming compliance with the accord, which scrapped broad economic sanctions against Iran in return for curbs intended to prevent it from acquiring nuclear weapons - something Iran says it does not want.

But the parties cannot agree who should make the first move. Foreign Minister Javad Zarif has said unless progress is made soon on restoring the deal, diplomacy would be halted for months by Iran’s presidential election scheduled for June 18. Iran’s nuclear policy is ultimately determined by Supreme Leader Ali Khamenei, who is not on the ballot. However, the privations suffered by voters could influence Iran’s approach by reducing turnout and bolstering those who believe the establishment must moderate its policy.

<https://www.reuters.com/article/idUSKBN2BH3DK>

### **Iran rejects ending 20% enrichment before U.S. lifts sanctions - state TV**

*Reuters, March 27, 2021*

Iran will not stop its 20% uranium enrichment before the United States lifts all sanctions, Iranian state TV quoted an unnamed official as saying on Tuesday, as Washington considered ways to jump-start nuclear talks. The Biden administration has been seeking to engage Iran in talks about both sides resuming compliance with the 2015 nuclear deal. The agreement removed economic sanctions on Tehran in return for curbs on Iran’s nuclear program to make it harder to develop a nuclear weapon - an ambition Tehran denies. “A senior Iranian official tells Press TV that Tehran will stop its 20-percent uranium enrichment only if the U.S. lifts ALL its sanctions on Iran first,” state-run Press TV said on its website.

“The official said Tehran will further reduce its commitments under the 2015 nuclear deal if the U.S. does not lift all sanctions, warning that Washington is rapidly running out of time,” it added. Separately, Iran’s United Nations mission tweeted: “No proposal is needed for the U.S. to rejoin the JCPOA (nuclear agreement). It only requires a political decision by the U.S. to fully and immediately implement all of its obligations under the accord...” Asked if it still planned to submit a proposal to bring Iran back to the table, White House press secretary Jen Psaki told reporters on Tuesday that, “we remain committed to pursuing a diplomatic process to determine a way forward; sometimes that takes some time.”

<https://www.reuters.com/article/idUSKBN2BI36U>

### **Iran and China sign 25-year cooperation agreement**

*Reuters, March 27, 2021*

China and Iran, both subject to U.S. sanctions, signed a 25-year cooperation

agreement on Saturday to strengthen their long-standing economic and political alliance. "Relations between the two countries have now reached the level of strategic partnership and China seeks to comprehensively improve relations with Iran," Chinese Foreign Minister Wang Yi was quoted by Iran's state media as telling his Iranian counterpart Mohammad Javad Zarif. "Our relations with Iran will not be affected by the current situation, but will be permanent and strategic," Wang said ahead of the televised signing ceremony. "Iran decides independently on its relations with other countries and is not like some countries that change their position with one phone call." The accord brings Iran into China's Belt and Road Initiative, a multi-trillion-dollar infrastructure scheme intended to stretch from East Asia to Europe.

The project aims to significantly expand China's economic and political influence, and has raised concerns in the United States. China has spoken out often against U.S. sanctions on Iran and partly contested them. Zarif called it "a friend for hard times". Wang met President Hassan Rouhani ahead of the signing in Tehran. The agreement was expected to include Chinese investments in sectors such as energy and infrastructure. Rouhani expressed appreciation of Beijing's support for Iran's position on its 2015 nuclear deal with world powers, in which it agreed to curb its nuclear programme in return for the lifting of international sanctions. "Cooperation between the two countries is very important for the implementation of the nuclear accord and the fulfilment of obligations by European countries," Rouhani said, according to his official website.

<https://www.reuters.com/article/idUSKBN2BJ0AY>

## H. UAE

### Testing begins at UAE's nuclear power plant - operator

*Reuters, March 23, 2021*

The United Arab Emirates's Barakah nuclear power plant testing will begin after the fuel load was completed at the second unit, as

part of the process to start up the reactor, the operator said on Tuesday on Twitter. The plant in the Al Dhafrah region of Abu Dhabi, one of the seven emirates making up the UAE and the nation's capital, is the first nuclear power station in the Arab world and part of the Gulf oil producer's efforts to diversify its energy mix. "Our teams have successfully ensured all of the fuel assemblies are safely loaded into Unit 2 of the Barakah plant," said the Emirates Nuclear Energy Corporation. "Testing will now begin as part of our process for reactor start-up."

<https://www.reuters.com/article/idUSD5N2JU018>

## East Asia

### I. North Korea

#### North Korea says U.S. attempt to initiate contact is 'cheap trick': KCNA

*Josh Smith*

*Reuters, March 18, 2021*

A top North Korean diplomat acknowledged that the United States had recently tried to initiate contact, but blasted the attempts as a "cheap trick" that would never be answered until Washington dropped hostile policies. The statement by Choe Son Hui, first vice minister of foreign affairs for North Korea, is the first formal rejection of tentative approaches by the new U.S. administration under President Joe Biden, who took office in January. It came as U.S. Secretary of State Antony Blinken was visiting South Korea alongside Defense Secretary Lloyd Austin, in a first overseas trip by top-level members of Biden's administration.

The attempts at contact were made by sending e-mails and telephone messages via various routes, including by a third country, Choe said in a statement carried by state news agency KCNA. She called the attempts at contact a "cheap trick" for gaining time and building up public opinion. "What has been heard from the U.S. since the emergence of the new

regime is only lunatic theory of 'threat from North Korea' and groundless rhetoric about 'complete denuclearisation,' Choe said. The White House said earlier this month it had reached out to North Korea, but received no response, and did not elaborate. Speaking in Seoul on Wednesday, Blinken accused North Korea of committing "systemic and widespread abuses" against its own people and said the United States and its allies were committed to the denuclearisation of North Korea. Choe criticized the United States for continuing military drills, and for maintaining sanctions aimed at pressuring Pyongyang. No dialogue would be possible until the United States rolled back its hostile policy toward North Korea and both parties were able to exchange words on an equal basis, she said.

<https://www.reuters.com/article/idUSKBN2B92ZQ>

### **North Korea says it tested new 'tactical guided projectile' on Thursday: KCNA**

*Josh Smith*

*Reuters, March 26, 2021*

North Korea launched a "newly developed new-type tactical guided projectile" on Thursday, state news agency KCNA reported on Friday, as the United States condemned the launches and warned of a threat to international peace and security. The launches, which were the country's first ballistic missile tests in nearly a year, underscored steady progress in its weapons programme amid stalled denuclearisation talks with the United States. Joe Biden said on Thursday the United States remained open to diplomacy with North Korea despite its missile tests this week, but warned there would be responses if North Korea escalates matters. The State Department later condemned the ballistic missile launches as destabilising. "These launches violate multiple U.N. Security Council resolutions and threaten the region and the broader international community," a State Department spokesman said.

The new weapon is based on existing technology that was improved to carry a 2.5-

ton warhead, KCNA reported. KCNA said the two weapons accurately struck a target 600 km (373 miles) off North Korea's east coast, which conflicts with estimates by South Korean and Japanese authorities who said the missiles flew about 420-450 km. "The development of this weapon system is of great significance in bolstering up the military power of the country and deterring all sorts of military threats," Ri Pyong Chol, the senior leader who oversaw the test, said, according to KCNA. Photos released by state media showed a black-and-white painted missile blasting off from a military launch vehicle. Missile specialists at the California-based James Martin Center for Nonproliferation Studies (CNS) said it appeared to be a missile that was unveiled at a major military parade in Pyongyang in October.

<https://www.reuters.com/article/idUSKBN2BH3CT>

### **North Korea missile launch tests Biden, alarms Japan ahead of Olympics**

*Josh Smith, Antoni Slodkowski*

*Reuters, March 25, 2021*

North Korea launched two suspected ballistic missiles into the sea near Japan on Thursday, underscoring steady progress in its weapons programme and ramping up pressure on the new U.S. administration as it reviews North Korea policy.

The apparent tests were reported by authorities in the United States, South Korea, and Japan, and coincided with the start of the Olympic torch relay in Japan. They would be the first ballistic missile tests by North Korea in nearly a year and the first reported since U.S. President Joe Biden took office in January. Analysts said the latest missile tests did not mean denuclearisation diplomacy was dead, but they highlight an inconvenient truth for the U.S. administration: Pyongyang's arsenal is advancing, posing new threats and increasing its potential bargaining power should talks resume.

<https://www.reuters.com/article/idUSKBN2BG3CO>

## Missile test propels North Korea to top of Biden's foreign agenda

*Josh Smith, David Brunnstrom*

*Reuters, March 26, 2021*

North Korea's claim on Friday that it had launched a new type of tactical short-range ballistic missile highlighted military advances by the nuclear-armed state and propelled it to the top of new U.S. President Joe Biden's foreign policy agenda. The United States condemned Thursday's launches, which came hours before Biden held his first White House press conference since taking office in January. When asked if he agreed that North Korea was the top foreign policy issue he faced, Biden replied: "Yes." Biden had previously left North Korea entirely out of his maiden foreign policy speech in February, and in outlining eight diplomatic priorities earlier in March, his secretary of state didn't focus on North Korea except to list it as one of several countries that pose a challenge.

The launches, which were North Korea's first ballistic missile tests in nearly a year, underscored steady progress in its weapons programme since denuclearisation talks with the United States floundered under former President Donald Trump. Biden said the United States remained open to diplomacy with North Korea despite its missile tests, but warned there would be responses if Pyongyang escalates matters. South Korea's President Moon Jae-in called the missile test "concerning," saying Seoul, Pyongyang and Washington should not create hurdles for talks.

<https://www.reuters.com/article/idUSKBN2BI02R>

## N. Korea says it test-fired new tactical guided missiles

*Yonhap*

*Korea Herald, March 26, 2021*

North Korea said Friday it test-fired new tactical guided missiles a day earlier, confirming the launch of ballistic missiles for the first time in about a year. South Korea's military said the North fired what appeared

to be two short-range ballistic missiles into the East Sea, raising concerns that the missiles banned under the UN Security Council resolutions could sharply escalate tensions. The latest launch came as the Joe Biden administration prepares to announce a new policy on the North. "The newly developed new-type tactical guided projectile is a weapon system whose warhead weight has been improved to be 2.5 tons with the use of the core technology of tactical guided projectile that was already developed," the official Korean Central News Agency (KCNA) said.

The Academy of Defence Science conducted the launch and was "very successful just as it had been confidently predicted," according to the KCNA. The two missiles "accurately hit the target" set in the water 600 kilometers off the East Coast, it said. The KCNA added that the "reliability of the improved version of solid fuel engine was confirmed through several engine ground jet tests and their test-firing processes, and that the irregular orbit features of low altitude gliding leap type flight mode already applied to other guided projectile were also re-confirmed."

[http://www.koreaherald.com/view.php?ud=20210326000110&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210326000110&ACE_SEARCH=1)

## North Korea says Biden administration took wrong first step over latest missile test

*Hyonhee Shin*

*Reuters, March 27, 2021*

North Korea said on Saturday that the administration of U.S. President Joe Biden had taken a wrong first step and revealed "deep-seated hostility" by criticising its self-defensive missile test. North Korea on Friday said it had launched a new type of tactical short-range ballistic missile. Biden said the test violated U.N. Security Council resolutions but he remained open to diplomacy with Pyongyang. Ri Pyong Chol, secretary of the North's ruling Worker's Party's Central Committee, said the test was self-defensive against threats posed by South Korea and the United



States with their joint military exercises and advanced weapons.

"We express our deep apprehension over the U.S. chief executive faulting the regular testfire, exercise of our state's right to self-defence, as the violation of U.N. 'resolutions' and openly revealing his deep-seated hostility," Ri said in a statement carried by the official KCNA news agency. Biden's remarks were an "undisguised encroachment on our state's right to self-defence and provocation," he said, adding Washington might face "something that is not good" if it continues to make "thoughtless remarks." "We are by no means developing weapons to draw someone's attention or influence his policy," Ri said. "I think that the new U.S. administration obviously took its first step wrong." He accused the Biden administration of "exploiting every opportunity" to provoke Pyongyang by branding it as a "security threat."

<https://www.reuters.com/article/idUSKBN2BI348>

### **UN takes no action on latest North Korea missile tests**

*Edith M. Lederer*

*AP News, March 31, 2021*

The U.N. Security Council took no action after a brief meeting Tuesday on North Korea's latest ballistic missile tests, the first since U.S. President Joe Biden took office on Jan. 20 and a violation of U.N. sanctions. Council diplomats said all 15 members encouraged dialogue and negotiations on North Korea's nuclear program but disagreed on the need for a statement. Last Friday, the council unanimously adopted a resolution to renew the mandate of U.N. experts monitoring sanctions against the North. Hours earlier, the 15 council members discussed Pyongyang's latest test firings at a sanctions committee meeting.

Russia and China both mentioned their proposed December 2019 resolution, U.N. diplomats said, speaking on condition of anonymity because the meeting was private. It would terminate sanctions on North

Korean exports such as textiles, seafood and statues, "with the intent of enhancing the livelihood of the civilian population." The Russia-China draft resolution has languished, and whether the Security Council takes any action remains to be seen. Russia's deputy U.N. ambassador Dmitry Polyansky told a group of reporters Tuesday "it's still a time of assessment" of the recent missile tests. U.S. Ambassador Linda Thomas-Greenfield said Monday the Biden administration is looking at "additional actions" that the United Nations might take to respond to the latest tests, but she wasn't specific about what those actions might entail. North Korea fired two short-range ballistic missiles into the sea in defiance of U.N. resolutions banning such launches. Some experts said the launches, the first of their kind in a year, were aimed at applying pressure on the Biden administration which is finalizing a review on how to approach the reclusive north Asian nation. North Korea accused the U.N. of a "double standard" over its reaction to the launches, warning of serious consequences.

<https://apnews.com/article/joe-biden-global-trade-north-korea-russia-china-6efedfb40b6523069d89d676a6ad3252>

### **Latest NK missile nuclear-tipped, hard to intercept: report**

*Choi Si-young*

*Korea Herald, March 31, 2021*

The two ballistic missiles North Korea tested a week ago could carry nuclear warheads and would be hard to intercept with South Korea's missile defense systems, a local security think tank said Tuesday in its latest report. "They could put a nuclear warhead on each KN-23," the Sejong Institute said, referring to the missiles. The report cited experts including Jefferey Lewis of the California-based Middlebury Institute of International Studies. He said the North could mount nuclear warheads. But the North has yet to fully miniaturize nuclear warheads so the missile carrying them could fly unhindered on its projected trajectory,

according to the report. The more the warheads weigh, the shorter the distance the missile can fly.

“North Koreans could make a warhead as light as 400 kilograms when the US and Russia can reduce it to as much as 110,” the report said. The UN and Japan had officially acknowledged the North had the technology to make warheads small. The report said the KN-23 could neutralize South Korea’s missile defense systems – a multilayered shield where the Patriot and Terminal High Altitude Area Defense systems target hostile fire at low and high altitudes, respectively. The KN-23 flies between 40 and 50 kilometers high, in a gap neither system can fully cover. But the report said the missile has drawbacks because it could give false signals. A KN-23 attack could be understood as a nuclear strike as opposed to a conventional strike, in which case North Koreans would have to expect a full-on nuclear retaliation, even if that was not what they had wanted.

[http://www.koreaherald.com/view.php?ud=20210331000851&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210331000851&ACE_SEARCH=1)

### **Steam detected at N. Korea’s plutonium reprocessing plant: US think tank**

*Yonhap*

*Korea Herald, March 31, 2021*

Recent satellite imagery showed steam from the plutonium reprocessing plant at North Korea’s Yongbyon nuclear complex, a US think tank said Wednesday, an indication of activity at the facility used to extract the key nuclear weapon ingredient. The imagery taken on Tuesday shows a plume of steam or smoke emanating from a small support building in the center of the reprocessing plant, known as the Radiochemical Laboratory, according to Beyond Parallel, a project of the Center for Strategic and International Studies think tank.

The facility is used to reprocess spent fuel rods to extract plutonium, a fissile material used to build nuclear weapons along with highly enriched uranium. About 6 kilograms

of plutonium is required to build a nuclear bomb.

[http://www.koreaherald.com/view.php?ud=20210331000316&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210331000316&ACE_SEARCH=1)

### **J. South Korea**

#### **Discussion of nuclearizing S. Korea may help denuclearize N. Korea: US lawmaker**

*Yonhap*

*Korea Herald, March 17, 2021*

Serious discussions on the nuclearization of South Korea and Japan may put pressure on China to finally step in and help denuclearize North Korea, a Republican member of the US House of Representatives said Tuesday. Rep. Steve Chabot from Ohio argued the only way to denuclearize the North is to have China put more pressure on Pyongyang. “The thing that scares the PRC, that keeps them awake at night, is a nuclear Japan or a nuclear South Korea,” said the ranking member of the House Subcommittee on Asia, the Pacific, Central Asia and Nonproliferation.

PRC stands for China’s official name, the People’s Republic of China. “I’m not suggesting that we ought to assist them in nuclearizing. But what I think we should do is, we ought to talk seriously with those two nations about that,” he added in a webinar, co-sponsored by the Washington Times Foundation and Universal Peace Federation’s International Association of Parliamentarians for Peace.

[http://www.koreaherald.com/view.php?ud=20210317000089&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210317000089&ACE_SEARCH=1)

#### **N. Korea says will ignore contact from US unless Washington withdraws hostile policies**

*Yonhap*

*Korea Herald, March 18, 2021*

North Korea said Thursday that it will continue to ignore any contact from the United States unless Washington

withdraws its hostile policies toward Pyongyang. North Korean First Vice Foreign Minister Choe Son-hui also confirmed in a statement that the US reached out to Pyongyang even the day before its combined exercises with South Korea from a “third country.” The statement came as the top US diplomat and the defense chief are in Seoul for talks with their South Korean counterparts to coordinate a joint approach toward North Korea and discuss other alliance issues.

“We have already declared our stand that no DPRK-US contact and dialogue of any kind can be possible unless the US rolls back its hostile policy towards the DPRK,” Choe said, referring to the North’s official name, the Democratic People’s Republic of Korea, in the statement carried by the official Korean Central News Agency. “Therefore, we will disregard such an attempt of the US in the future, too,” she said. Choe stressed that an “atmosphere for both parties to exchange words on an equal basis” must be created before any talks with Washington. Choe said that the US has made several attempts to reach out to the North through various channels since mid-February. Earlier, the White House said it has tried to contact North Korea for talks, but the North has remained unresponsive. She slammed the recent US attempts to reach out to the North as a “cheap trick” for Washington to buy time, and warned that it will not grant any more opportunities for talks, such as the Singapore summit in June 2018 and the Hanoi summit the following year.

[http://www.koreaherald.com/view.php?ud=20210318000202&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210318000202&ACE_SEARCH=1)

### **Korea, US set NK nuclear, missile issue as priority for alliance**

*Ahn Sung-mi*

*Korea Herald, March 18, 2021*

South Korea and the US on Thursday stressed that North Korea’s nuclear and ballistic missile issues are a “priority” for the alliance, while Washington renewed pressure on Beijing to use its influence to convince Pyongyang to denuclearize. The two allies issued a joint statement detailing

the pledge, after the “two-plus-two” talks at the Foreign Ministry in Seoul earlier in the day, which involved South Korea’s Foreign Minister Chung Eui-yong and Defense Minister Suh Wook, and US Secretary of State Antony Blinken and Secretary of Defense Lloyd Austin.

“The Ministers and Secretaries emphasized that North Korean nuclear and ballistic missile issues are a priority for the Alliance, and reaffirmed a shared commitment to address and resolve these issues,” the statement read. “They affirmed the importance of full implementation of relevant UN Security Council resolutions by the international community, including North Korea.” The officials also pledged to coordinate closely on all issues related to the Korean Peninsula, and to maintain high-level consultations on the US’ ongoing North Korea policy review, which Blinken said would be completed in the weeks ahead.

[http://www.koreaherald.com/view.php?ud=20210318000874&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210318000874&ACE_SEARCH=1)

### **S. Korea’s nuclear armament will only justify N. Korea’s nuclear ambition: Vincent Brooks**

*Yonhap*

*Korea Herald, March 23, 2021*

Arming South Korea with its own nuclear weapons against threats from North Korea would only help justify the North’s ongoing pursuit of nuclear weapons, and thus making it impossible to denuclearize the North, a former commander of US Forces Korea said. Vincent Brooks argued the US must instead periodically reaffirm its commitment to the joint defense of South Korea and strengthen its extended nuclear deterrence for South Korea. “My opinion is that the provision of nuclear weapons in South Korea would not be helpful,” Brooks said when asked if South Korea should have its own nuclear weapons.

“I think that it would further solidify North Korea’s lock in on their nuclear



weapons, which stays reticent to yield in the first place, to give up in the first place. How do you then resolve the fact that South Korea has them and that South Korea was allowed to have them?" he told a webinar hosted by Washington-based think tank, the Center for Strategic & International Studies (CSIS). The former Army four-star general also argued South Korea's nuclear armament would raise a number of questions from neighboring Japan and China that will only create a "more tangled Gordian knot for South Korea than it may anticipate." Some South Koreans, as well as Americans, have occasionally voiced a need for South Korea to have its own defense capabilities to counter North Korea's seemingly growing asymmetrical weapons. Pyongyang has so far staged six nuclear tests.

[http://www.koreaherald.com/view.php?ud=20210323000082&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210323000082&ACE_SEARCH=1)

## **N. Korea fires 2 short-range ballistic missiles into East Sea: JCS**

*Yonhap*

*Korea Herald, March 25, 2021*

North Korea fired what appeared to be two short-range ballistic missiles into the East Sea on Thursday, the Joint Chiefs of Staff (JCS) said, an apparent move pressing the United States as Washington prepares to announce a new policy on the North. The missiles were fired from the North's eastern town of Hamju, South Hamgyong Province, at 7:06 a.m and 7:25 a.m. and flew around 450 kilometers with an altitude of 60 km, the JCS said.

"South Korean and US intelligence authorities are analyzing the projectiles in detail, weighing the possibility that they could be short-range ballistic missiles," a JCS officer said. North Korea last fired a ballistic missile in March 2020. It was not immediately known whether the North's leader Kim Jong-un oversaw the firings. "Our military is maintaining a thorough readiness posture in preparation for additional provocations while closely monitoring related moves," the JCS said in a statement. The presidential office Cheong Wa Dae convened an emergency National

Security Council meeting and expressed "deep concern" over the North's latest projectile launch.

[http://www.koreaherald.com/view.php?ud=20210325000133&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210325000133&ACE_SEARCH=1)

## **S. Korean nuclear envoy discusses NK missile launches with US official**

*Yonhap*

*Korea Herald, March 25, 2021*

South Korea's chief nuclear envoy discussed North Korea's latest missile launches with a senior US official and plans to do the same with his Japanese counterpart, a foreign ministry official said. Noh Kyu-duk, the chief nuclear negotiator, spoke by phone with Sung Kim, acting US assistant secretary of state for East Asian and Pacific affairs, earlier in the day, the official said, hours after the North fired what appeared to be two ballistic missiles into the East Sea. "The two sides shared the concerns over North Korea's launches of short-range missiles and exchanged assessments on the recent Korean Peninsula situation," the ministry said in a release.

"While managing the situation in a stable manner, the two countries agreed to continue coordination to bring substantive progress toward the complete denuclearization of the Korean Peninsula and building lasting peace," it added.

[http://www.koreaherald.com/view.php?ud=20210325001133&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210325001133&ACE_SEARCH=1)

## **K. Taiwan**

### **Taiwan reports largest ever incursion by Chinese air force**

*Reuters, March 26, 2021*

Twenty Chinese military aircraft entered Taiwan's air defence identification zone on Friday, in the largest incursion yet reported by the island's defence ministry and marking a dramatic escalation of tension across the Taiwan Strait. The island's defence ministry said the air force



deployed missiles to “monitor” the incursion into the southwestern part of its air defence identification zone. It also said its planes warned the Chinese aircraft, including by radio.

It marked the largest incursion to date by the Chinese air force since Taiwan’s defence ministry began disclosing almost daily Chinese military flights over the waters between the southern part of Taiwan and the Taiwan-controlled Pratas Islands in the South China Sea last year. Some of the Chinese aircraft flew in the airspace to the south of Taiwan and passed through the Bashi Channel which separates the island from the Philippines, Taiwan’s defence ministry said in a statement.

<https://www.reuters.com/article/idUSKBN2BI24D>

### L. World/Misc

#### Canadian government invests in SMR project

*World Nuclear News, March 18, 2021*

Moltex Energy intends to build a 300 MW Stable Salt Reactor-Wasteburner (SSR-W) and Waste To Stable Salt (WATSS) facility at the Point Lepreau site in Saint John, New Brunswick, aiming for grid connection by the early 2030s. Dominic LeBlanc, president of the Queen’s Privy Council for Canada and Minister of Intergovernmental Affairs, announced the investment on behalf of Minister of Innovation, Science and Industry François-Philippe Champagne and Minister of Economic Development and Official Languages and Minister responsible for the Atlantic Canada Opportunities Agency (ACOA) Mélanie Joly. SMRs could represent the “next great opportunity” towards Canada’s goal of net-zero emissions by 2050, he said, and at the same time providing economic opportunities and jobs.

“This investment will help develop and validate SMR technology, secure the establishment of the industry here in New Brunswick, and also establish a first-of-a-kind, world-class clean energy system that

can be used in Canada but also around the world,” he said. Moltex’s reactor - which will recycle existing used nuclear fuel to produce clean energy - will also have the potential to reduce waste storage needs, he added.

<https://www.world-nuclear-news.org/Articles/Canadian-government-invests-in-SMR-project>

#### IMF lead evaluator: Aligning the stars for clean energy

*World Nuclear News, March 18, 2021*

Greening our economies is not just smart for the planet; most likely it is also the surest and cheapest route back to a prosperous global economy. This is the conclusion of a working paper the International Monetary Fund (IMF) will publish tomorrow, one of its co-authors said today during World Nuclear Association’s Strategic eForum on Sustainable Finance. The virtual conference examined the measures needed to ensure nuclear energy can make its fullest contribution to the twin goals of decarbonisation and economic recovery from the pandemic. Nicoletta Batini, lead evaluator in the IMF’s Independent Evaluation Office (IEO), produced the IMF working paper - Building Back Better: How Big Are Green Spending Multipliers? - with Mario Di Serio, Matteo Fragetta, Giovanni Melina, and Anthony Waldron.

Noting that, although IMF working papers do not necessarily represent the views of the IMF, its board or the IEO, Batini stressed these issues are central to the IMF’s outlook. There does not have to be a “trade-off”, she said, between investment in clean energy and rebuilding economies. “Some people thought that if you go green, you sacrifice economic growth, you sacrifice jobs. And so we were ready to explore this question and we prepared a working paper.”

<https://www.world-nuclear-news.org/Articles/IMF-lead-evaluator-Aligning-the-stars-for-clean-en>

## **New nuclear needs positive taxonomies, says Rothschild & Co executive**

*World Nuclear News, March 19, 2021*

On the role of government in nuclear new build, Vaughan described EDF's Sizewell C project in Suffolk, England. The proposed twin EPR development will be a replica of the French company's Hinkley Point C, under construction in Somerset. This is primarily financed by EDF on its own balance sheet, but for Sizewell C the expectation is that EDF will not play a major role on the financing side. Instead the company will take a small minority stake.

"The ambition for Sizewell C is to raise private financing and that means a big quantum of capital, in excess of GBP20 billion (USD28 billion). And of course that capital needs to be raised at low cost. We need the power output from Sizewell C to be competitive and we're targeting a power price of GBP40-60/MWh," Vaughan said, adding this requires "the deepest pools of capital to be available". Such a project cannot afford to face any impediments, which means the taxonomy and the environmental, social and corporate (ESG) reference points need to be positive.

<https://www.world-nuclear-news.org/Articles/New-nuclear-needs-positive-taxonomies-says-Rothsch>

## **Brazil to complete Angra 3 finance package in 18 months, says BNDES director**

*World Nuclear News, March 22, 2021*

Speaking as part of a high-level panel at World Nuclear Association's Strategic eForum on Sustainable Finance on 18 March, Mendes Cabral said BNDES is learning lessons from its previous involvement with the Angra 3 project. In addition, it is working to expand its issuance of green bonds to include nuclear energy within a wider, environmental, social, and governance (ESG) framework. Two nuclear power units - Angra 1 and 2 - supply about 3% of Brazil's electricity. The units are

operated by Eletrobras subsidiary Eletronuclear.

The Angra 3 project has a long history. Construction originally started in 1984 on a 1405 MWe (gross) pressurised water reactor designed by German company KWU, but this faltered two years later. At that stage some 70% of the plant's equipment was said to have already been purchased and delivered to the site. A return to construction was approved in 2007, and an industrial agreement for the unit's completion was signed with Areva in December 2008. The project was suspended again in mid-2015. In June last year, Brazil's Investment Partnership Programme (PPI) council approved a plan to complete the unit. Created by the government to expand and strengthen the relationship between the state and the private sector, the PPI's main objective is to generate jobs and growth for the country through new investments in infrastructure projects and privatisation.

<https://www.world-nuclear-news.org/Articles/Brazil-to-complete-Angra-3-finance-package-in-18-m>

## **UAE and Belarus Introduced Nuclear Power Last Year. Who is Next?**

*Matt Fisher*

*International Atomic Energy Agency, March 23, 2021*

With nuclear energy increasingly recognized as vital to supporting sustainable development and climate change mitigation, nations from Africa to Asia are eyeing its use. The IAEA is providing them with comprehensive support as they consider adding nuclear power to their energy mix.

"Sri Lanka is looking to reduce its dependence on fossil fuel imports and drive sustainable development – and nuclear power is an intriguing option," said Malinda Ranaweera, a Scientific Officer on Sri Lanka's Atomic Energy Board who took part in the weeklong

Technical Meeting on Topical Issues in the Development of Nuclear Power Infrastructure. Access to affordable, reliable and clean energy is crucial for achieving sustainable development goals, from eradicating poverty to advancing health and education, facilitating industrial development and reducing greenhouse gas emissions. Nuclear power can help provide the energy to achieve high living standards, good health, a clean environment and a sustainable economy. Some 30 countries are working with the IAEA as they consider or embark on nuclear power including Bangladesh and Turkey, which are building their first reactors.

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<https://www.iaea.org/newscenter/news/uae-and-belarus-introduced-nuclear-power-last-year-who-is-next>

### **Taxonomies must reflect climate goals, says Orano CEO**

*World Nuclear News, March 23, 2021*

Knoche, who is also the current chairman of World Nuclear Association, said this lack of consensus on environmental, social and governance (ESG) frameworks was out of sync with the recommendations of the

Independent Panel on Climate Change and of the International Energy Agency (IEA). Regarding the EU taxonomy on sustainable finance, he said: “We are facing the risk of a non-technology-neutral taxonomy, or ESG classification, being put forward, which would be a total contradiction of the aim of citizens and governmental institutions to fight climate change. If we go to the experts on climate, the Independent Panel on Climate Change, the vast majority of their scenarios to meet the Paris Agreement targets require all low-carbon technologies to be mobilised. It’s the same with the International Energy Agency.”

Referring to other panellists on the webinar, he added: “And we’ve just heard a major institution, the IMF, and the NGFS, talk about the need to have all low-carbon technologies, including nuclear, to meet the scenarios and the targets. The clear answer is, and as Fatih Birol, the head of the IEA, put it: We can’t afford the luxury of excluding one low-carbon technology, be it nuclear or another, from our scenarios because if we do, then we will fail. “We will fail because finance is a major link between the ambition of meeting the Paris Agreement and the projects in the energy industry, which is capital intensive. Fossil, renewables, and nuclear, all these projects need a lot of capital, and the link between the ambition and a project is finance.”

<https://www.world-nuclear-news.org/Articles/Taxonomies-must-reflect-climate-goals-says-Orano-C>

### **Regulators must learn from each other, says head of ASN**

*World Nuclear News, March 24, 2021*

“We are working on issues for which we should never rely on certainties and this has to do with a questioning attitude, which is one of the bases of safety culture,” Gupta said. “We have to expect to be challenged, and again it has to do with openness, and that’s also a reason why I very much like having international exchanges. I think they too are a



cornerstone of nuclear safety. Even if you belong to an advanced nuclear country, then you are prepared to change your practices, your regulations, if you identify a better practice, a better way to regulate, in another country.”

Magwood asked whether it is part of ASN’s role to instill such humbleness in operators as well. Gupta said licensees and operators themselves, inside their own organisations, must have this same kind of questioning attitude and openness to what’s happening abroad. “That’s an essential part of nuclear safety and we have to check that as regulators.”

The public often perceive regulators as having an enforcement role, he said, but actually their primary function with licensees is influence. “I often like to say that, as regulators, we have the licensees we deserve. For myself, I want licensees that fully meet their responsibilities in terms of safety. And that’s one of the reasons we have, at least in France, regulation that is objective-based rather than means-oriented and prescriptive.” This shows licensees that they should not wait for the regulator to tell them what they should do; they should know what is necessary to ensure a good level of nuclear safety. “They are not there to please us,” he said.

<https://www.world-nuclear-news.org/Articles/Regulators-must-learn-from-each-other-says-head-of>

### **UNECE workshop hears nuclear has key role in hydrogen production**

*World Nuclear News, March 25, 2021*

Nuclear energy can be used to produce low-carbon hydrogen via several efficient processes, King Lee of the World Nuclear Association told a workshop yesterday organised by the United Nations Economic Commission for Europe (UNECE). Speaking as chairman of the UNECE Group of Experts on Cleaner Electricity Systems, Lee said nuclear energy will play an important role as part of a low-carbon energy mix for the transition to net zero.

In a breakout session on hydrogen production during UNECE’s workshop on *Attaining Carbon Neutrality: The Role of Hydrogen*, Lee presented an overview of the production of clean hydrogen from nuclear energy. More than 200 participants attended the online discussion that explored the production, transport, storage and use of hydrogen as a zero-carbon energy medium.

Lee noted that nuclear energy can generate low-carbon hydrogen via a number of different ways. These include: low-temperature water electrolysis using nuclear electricity; steam electrolysis using nuclear-generated electricity and heat; and thermochemical processes using nuclear heat. He said another process - steam reforming of methane - is not low-carbon, but the use of nuclear heat to provide the thermal energy needed would reduce natural gas consumption by about 30%.

<https://www.world-nuclear-news.org/Articles/UNECE-workshop-hears-nuclear-has-key-role-in-hydro>

### ***M. Op-ed***

#### **USA**

### **Denuclearisation of what? U.S. switch on North Korea wording raises debate**

*Josh Smith*

*Reuters, March 18, 2021*

Officials with U.S. President Joe Biden’s administration have begun emphasising the “denuclearisation of North Korea”, rather than the whole peninsula, in a subtle but noticeable shift from wording embraced in previous talks with Pyongyang. In speeches, policy documents, and other communications, senior leaders including Secretary of State Antony Blinken have regularly adopted the phrase in a break from the “denuclearisation of the Korean peninsula”. The “peninsula” wording has been used for a decade in many United



Nations Security Council resolutions and international agreements, including the declaration signed by North Korean leader Kim Jong Un and former U.S. President Donald Trump in Singapore in 2018.

Blinken did not respond to a question about the wording during a briefing in Seoul on Thursday, but his South Korean counterpart, Foreign Minister Chung Eui-yong said emphasising the peninsula was “more correct”, highlighting a possible point of difference between the two allies. “It means that to North Korea we are showing that South Korea has already denuclearised... that we have to go along together,” Chung said. “If we can say ‘denuclearisation of the Korean Peninsula,’ we are more confident that we can convince North Korea to follow our suit.” The night before, South Korea’s Ministry of Defense said the allies had “reaffirmed the common goal of denuclearising the Korean Peninsula”, while the Pentagon said they “noted a commitment to supporting diplomatic efforts to achieve the denuclearisation of North Korea.”

<https://www.reuters.com/article/idUSKBN2BA0E0>

## Russia

### Russia’s Crazy Nuclear War Strategy: Escalation...to De-escalate?

*Mark Episkopos*

*National Interest Blog, March 19, 2021*

The recent round of tensions in the consistently difficult relationship between Russia and the U.S. has prompted a renewed focus on the Kremlin’s nuclear posture. For years, Western analysts have posited that Moscow adheres to what is often called an “escalate to de-escalate” approach. But what does this mean in concrete policy terms, and is it an accurate description of Russia’s nuclear doctrine? The phrase “escalate to de-escalate” first surfaced in the summer of 2015. As noted by Kevin Ryan, associate fellow at Harvard Kennedy School’s Belfer Center, the phrase

originated in American—rather than Russian—defense discourse. The core idea behind “escalate to de-escalate” is, simply, that Russia is now willing to engage in a limited nuclear war in order to win—that is, end—a conventional conflict.

Deputy Secretary of Defense Robert Work and the vice chairman of the Joint Chiefs of Staff, Adm. James Winnefeld, invoked “escalate to de-escalate” during a testimony to the House Committee on Armed Services: “Russian military doctrine includes what some have called an ‘escalate to deescalate’ strategy—a strategy that purportedly seeks to deescalate a conventional conflict through coercive threats, including limited nuclear use. We think that this label is dangerously misleading. Anyone who thinks they can control escalation through the use of nuclear weapons is literally playing with fire. Escalation is escalation, and nuclear use would be the ultimate escalation.”

<https://nationalinterest.org/blog/buzz/russia%E2%80%99s-crazy-nuclear-war-strategy-escalation-to-de-escalate-180680>

## East Asia

### Is nuclear peace with North Korea possible?

*Korea Herald, March 16, 2021*

North Korea’s recent public displays of new intercontinental and submarine-launched ballistic missiles have raised fresh concerns about the risks the regime in Pyongyang poses to the US mainland. As President Joe Biden’s administration reviews US policy toward the DPRK over the past four years and draws what lessons it can from Donald Trump’s nuclear summitry with North Korean leader Kim Jong-un, it should consider a new arms-control approach.

The failure of Trump’s efforts should surprise no one. After all, prior US administrations’ initiatives to stop North Korea’s nuclear-arms program – including Bill Clinton’s “Agreed Framework,” the six-party talks during George W. Bush’s

administration, and Barack Obama's "Leap Day" agreement – came to naught. Quite the contrary: North Korea withdrew from the Nuclear Non-Proliferation Treaty in 2003, and has failed to abide by a 1992 accord with South Korea pledging to keep the Korean Peninsula free of nuclear weapons. All this diplomatic activity leading nowhere raises a fundamental question: Does nuclear-arms control have a future on the peninsula? It does, but not as currently practiced. It should be clear by now that Kim will not abolish his nuclear arsenal, or permit a verifiable nuclear freeze, as some have called for. The reason is simple: as with all nuclear-armed countries today, nuclear weapons remain the regime's ultimate security blanket. The bomb also provides Kim with leverage over South Korea. The challenge, then, is to ensure that North Korea never uses its nuclear arsenal.

[http://www.koreaherald.com/view.php?ud=20210311000232&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210311000232&ACE_SEARCH=1)

### **Asia trip by Blinken, Austin successful, will help advance N. Korea policy: Knapper**

*Yonhap*

*Korea Herald, March 19, 2021*

US Secretary of State Antony Blinken's trip to Japan and South Korea has provided a chance to hear from the allies about their interests and approaches to North Korea, which will help boost the chance of success in denuclearizing the North, a senior US official said. Marc Knapper, deputy assistant secretary of state for Korea and Japan, said the US remains realistic but will strive for success in ridding North Korea of its nuclear ambitions. "One of our goals is to try and increase the chance of success," the US diplomat said in a virtual press conference organized by the Foreign Press Center in Washington, citing "these very close, ongoing consultations with our allies" as a way to increase the chance of success. His remark follows a four-day trip by the top US diplomat to Tokyo and Seoul this week.

[http://www.koreaherald.com/view.php?ud=20210319000110&ACE\\_SEARCH=1](http://www.koreaherald.com/view.php?ud=20210319000110&ACE_SEARCH=1)

## **N. Think Tanks**

### **Around the halls: Experts react to high-level meetings between American and Asian officials**

*David Dollar, Michael E. O'Hanlon, and Mireya Solís*

*Brookings, March 19, 2021*

This week, foreign policy officials from the Biden administration made their first trip overseas. On March 15, Secretary of State Antony Blinken and Secretary of Defense Lloyd Austin met with officials in Japan; on March 17, they met with officials in South Korea. On March 18, Blinken and National Security Advisor Jake Sullivan traveled to Alaska to meet with Chinese officials. What were the key takeaways from the meetings, and what might come next? Below, Brookings experts weigh in.

<https://www.brookings.edu/blog/order-from-chaos/2021/03/19/around-the-halls-experts-react-to-high-level-meetings-between-american-and-asian-officials/>

### **Future Defense Spending: Nuclear Modernization**

*James M. Acton*

*Carnegie, March 23, 2021*

Nuclear weapons appear to help deter nuclear aggression and prevent large-scale conventional conflict in a small number of high-consequence contingencies. Ensuring the efficacy of nuclear deterrence, therefore, is in the national security interests of the United States and its allies – so too are cooperative efforts to reduce the risks of escalation and arms racing and to create the political and security conditions under which nuclear weapons could be safely eliminated. For appropriators, the most salient nuclear policy questions are those with financial implications – in particular, how should the United States maintain and modernize its nuclear forces and their supporting infrastructure?

<https://carnegieendowment.org/2021/03/23/future-defense-spending-nuclear-modernization-pub-84147>

## It is time to negotiate global treaties on artificial intelligence

*John R. Allen and Darrell M. West*

*Brookings March 24, 2021*

The U.S. National Security Commission on Artificial Intelligence recently made the news when its members warned that America faces a national security crisis due to insufficient investment in artificial intelligence and emerging technologies. Commission Vice Chair Robert Work argued “we don’t feel this is the time for incremental budgets. This will be expensive and requires significant change in the mindset at the national, and agency, and Cabinet levels.” Commission Chair Eric Schmidt extended those worries by saying “China is catching the US” and “competition with China will increase.”

This is not the first time the country has worried about the economic and national security ramifications of new technologies. In the aftermath of World War II, the United States, Soviet Union, China, France, Germany, Japan, the United Kingdom, and others were concerned about the risk of war and the ethical aspects of nuclear weapons, chemical agents, and biological warfare. Despite vastly different worldviews, national interests, and systems of government, their leaders reached a n

<https://www.brookings.edu/blog/techtank/2021/03/24/it-is-time-to-negotiate-global-treaties-on-artificial-intelligence/>

## North Korea’s new nuclear gambit and the fate of denuclearization

*Evans J.R. Revere*

*Brookings, March 26, 2021*

In March 2012, North Korean Foreign Minister Ri Yong-ho told a group of U.S. experts and former officials that North Korea would not denuclearize until the United States removed its “threat.” He defined this as the U.S.-South Korea alliance, the presence of U.S. troops in South Korea, and the U.S. nuclear umbrella defending South Korea and Japan. “If you remove the threat,” Ri said, “we will feel more secure,

and in 10 or 20 years we will be able to consider denuclearization.” “In the meantime,” he declared, “we can sit down and engage in arms control talks as one nuclear power with another.”

Faced with a new U.S. president whose North Korea policy remains unclear, Kim Jong Un has decided to pre-empt the outcome of the ongoing U.S. policy review by ending all prospects of denuclearization and expanding his nuclear and missile capabilities instead. In doing so, Kim hopes to compel Washington to engage in “arms control talks” if it hopes to slow the North’s nuclear program. Kim’s gambit to change the main topic of U.S.-North Korea dialogue from denuclearization to arms control was hiding in plain sight in his January 2021 address to the Korean Workers Party Congress. He described North Korea’s nuclear weapons development as the nation’s “strategic and predominant goal” and an “exploit of greatest significance in the history of the Korean nation.” Declaring North Korea a “responsible nuclear weapons state,” Kim’s message was that the regime is now a permanent nuclear power and Washington must deal with it as such.

<https://www.brookings.edu/blog/order-from-chaos/2021/03/26/north-koreas-new-nuclear-gambit-and-the-fate-of-denuclearization/>

## Biden administration needs to get real on North Korea

*Michael E. O’Hanlon*

*Brookings, March 29, 2021*

The Biden administration is reportedly completing its new strategy for how to handle the dangerous, nuclear-armed dictatorship of Kim Jong Un in North Korea. In his press conference on March 25, President Biden called North Korea the nation’s greatest national security threat. Addressing that threat is a daunting task. Several of Biden’s predecessors have failed completely on the goal of winding back North Korea’s nuclear weapons programs.

Soon after Donald Trump defeated Hillary Clinton in November of 2016, Barack

Obama hosted him at the White House for a private chat. Reportedly, one message Obama conveyed was to watch out for North Korea. Obama acknowledged that his own policy of “benign neglect” hadn’t worked out so well. Indeed, on Obama’s (and Biden’s) watch, North Korea conducted four nuclear tests and built about a half dozen nuclear bombs per year.

<https://www.brookings.edu/blog/order-from-chaos/2021/03/29/biden-administration-needs-to-get-real-on-north-korea/>

### **How the Biden administration can secure real gains in nuclear arms control**

*Sharon Squassoni*

*Bulletin of Atomic Scientists, March 30, 2021*

Less than two months into his term of office, President Joseph R. Biden signaled a renewed commitment to US arms control leadership. As expected, he extended the New START Treaty by executive action in his first week in office, securing a five-year cap on the number of deployed strategic nuclear weapons in the US and Russian arsenals. More surprisingly, the White House issued an Interim National Security Strategy Guidance in early March that planted arms control firmly in the Biden administration’s national security strategy:

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<https://thebulletin.org/2021/03/how-the-biden-administration-can-secure-real-gains-in-nuclear-arms-control/>



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Indian Pugwash Society welcomes research articles from students, researchers and faculties on Space, Missile, nuclear technology, WMD proliferation, arms control, disarmament, export controls and other related issues. Articles should be crisply written and should address contemporary debates in the policy arena. Manuscripts submitted for the consideration of the Indian Pugwash Society should be original contributions and should not have been submitted for consideration anywhere else. For further assistance, please contact us at : indianpugwashsociety@gmail.com

The Indian Pugwash Society aims to promote the study, discussion, and knowledge of and to stimulate general interest in, and to diffuse knowledge in regards to problems relating on WMD proliferation, arms control, disarmament, space security, export controls, nuclear technology and other related issues. This newsletter is part of the project "Emerging Nuclear Order in Asia: Implications for India" sanctioned to us by Department of Atomic Energy-Board of Research in Nuclear Sciences (DAE-BRNS).

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