

# Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the Indian Pugwash Society

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- Is Indian Navy's submarine development losing edge over Pakistan?



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- Union Minister Dr Jitendra says, ISRO through its commercial arms has successfully launched 177 foreign satellites belonging to 19 countries during the last five years
- Union Minister Dr Jitendra says, Government proposes to set up more nuclear power plants for augmenting production of clean energy
- Union Minister Dr Jitendra says, security arrangements are in place to secure India's nuclear power plant systems from cyber-attack
- Union Minister Dr Jitendra says, four units of 1000 MW each of Kudankulam Nuclear Power Plant will be completed by 2027
- Union Minister Dr Jitendra says, Nuclear Power Corporation of India Limited (NPCIL) has so far spent about Rs. 663 crores on its CSR programmes, of which about 70% was incurred on development of infrastructure facilities in the villages around nuclear power plant sites
- Union Minister Dr Jitendra says, India is not reliant on China for accessing rare earth minerals
- India to commission 20 new Nuclear Power Plants by 2031: Govt
- India to fire up nuclear power production in green shift
- Nuclear plants are 'well protected' from all types of intrusions: Govt
- Russia releases video of nuclear-capable ICBM being loaded into silo, following reports that US is preparing to send Patriot missiles to Ukraine
- India's renewed nuclear energy thrust is for the world to emulate

## B. Russia

- Nuclear war risk, no need for new mobilization: what Putin said at Human Rights Council
- Russia not sure Kiev is ready to show sound approach to security zone around ZNPP
- US readiness to settle issues of Russian inspectors' trip is to be committed to paper
- Russia maintains nuclear deterrence forces at high level, senior diplomat says
- NATO was aware of Kiev's plans to attack Russian airfields, Russian diplomat says
- Russia to respond quickly, effectively to US-induced missile risks – MFA spokeswoman
- Volunteers collect in Arctic more than 3,000 tons of waste, high-ranking official says
- Kiev shamelessly ignores presence of IAEA officials at ZNPP – Russian MFA
- France bought 153 tons of enriched uranium from Russia in 2022 – magazine
- Russia to design spacecraft engine that can travel to Solar System's border
- Clean Arctic project plans 40 missions for year 2023
- Restoration of INF treaty not on agenda for now – Kremlin spokesman
- SCO, CIS countries to pool efforts to ward off biological risks – Shoigu
- Russia may borrow US idea of disarming strike – Putin
- IAEA experts carry out inspections at Khmelnitskaya and Rovenskaya NPPs
- Fourth team of IAEA experts arrives at Zaporozhye NPP – statement
- Russia in talks with IAEA to prevent Zaporozhye plant from posing any threat – envoy
- Zaporozhye NPP's management interested in cooperation with IAEA, director says
- Kremlin doesn't plan to change nuclear doctrine quickly – spokesman
- Zaporozhye NPP director refutes reports about deployment of Grad systems
- ZNPP came under shelling by Ukrainian troops on December 11
- EU urges Iran not to ship drones, missiles to Russia, to stop supporting regional allies
- IAEA to deploy its security missions in 'all of Ukraine's nuclear power plants' – Grossi

- Clean Arctic plans mission on Spitsbergen for spring
- Rosatom embarks on bid to build Saudi Arabia's first nuclear station
- Russia's global market share of low-power nuclear plants to hit 20% by 2030, says Novak
- Kremlin shoots down Macron's 'false' claim of heavy weapons at Zaporozhye station
- Russia to further boost export potential of nuclear sector in future, says Novak
- IAEA to ensure continuous presence of experts at all of Ukraine's NPPs
- IAEA chief, Ukrainian PM make progress on topic of security zone around ZNPP – IAEA
- Zaporozhye NPP security zone is within IAEA, Russia and Ukraine's competence – diplomat
- US accuses five Russians of unlawfully procuring electronic components for Russia
- Russia and IAEA can only discuss safe operation of Zaporozhye NPP – Rosenergoatom
- Safety zone around Zaporozhye plant realistic, demilitarization unacceptable – politician
- Ukrainian mole seeking to pass data on ZNPP discovered at power plant, says official
- Rosatom launches series production of Li-ion batteries
- Work to establish safety zone around ZNPP moves ahead – official
- UK chief of defense staff sees more threat in Russia, than in China
- Russian nuclear-powered sub undergoing upgrade at Far Eastern Shipyard, says source
- Omsk Polytechnic University to develop method of decontaminating radioactive sites
- Dispute Review Board considers Hanhikivi 1 NPP contract termination wrongful – Rosatom

### C. China

- Chinese firm prepares to send world's first methane-fuelled rocket into space
- US debuts new B-21 nuclear stealth bomber in defence race with China
- Huge nuclear arms push by China would worry neighbours, analysts warn, as US report sees 1,500 warheads by 2035
- US' latest arms sale proposal to Taiwan island may hinder China-US military exchanges; little help for secessionists to gain a military edge
- China completes first seaborne hot launch with carrier rocket sending 14 satellites to orbit
- China and Saudi Arabia pledge to widen ties to 'all fields' and work together on Iran nuclear programme
- China's new high-altitude, high-speed demonstrator drone makes first flight
- Why US calls for China to act over North Korean missiles may test limits of Beijing's influence
- New US B-21 stealth bomber heightens strike gap with China – but missiles may help close it
- China looks to hypersonic ski-jump technology for space travel
- US succeeds in hypersonic missile test launch, technology China has long mastered
- Stronger Taiwan air force hangars seen to be no match for Chinese military's new ballistic missiles

## D. Pakistan

- Pakistan's new ISPR chief is son of Osama-linked scientist who said djinns can make electricity
- US blacklists Pakistan firms over nuclear activities
- Nuclear deterrence in South Asia
- US 'Punctures' Pakistan's Attempts To Black Market Its Nuclear Weapons Tech; Calls It One Of World's 'Most Dangerous' Nations: OPED
- Pakistan seeks talks to limit arms build-up
- Pakistan Is a Responsible Nuclear Power

## E. Europe

- Mint Explainer: The UK-Japan-Italy fighter jet will shake the defence market

## F. France

- France dims the lights as nuclear energy crisis bites
- EDF to start Penly 2 fix in Jan as more reactors ramp up
- France copes with high power demand on nuclear supply ramp-up
- France's Iter project on nuclear fusion may hold key to sustainability
- France's Restart of Nuclear Reactors Eases Blackout Fears

## G. Germany

- Why Germany Won't Go Nuclear
- Risk of Russia using nuclear weapons has lessened, says Germany's Scholz
- Germany ramps up power generation from coal amid energy crisis: Report
- Germany at a crossroads: what a nuclear power station tells us about its energy dilemma
- UK and US nuclear missile submarines send message to Russia
- Further runtime extension for German nuclear plants no longer possible - EnBW
- Germany clinches \$8 billion purchase of 35 F-35 aircraft from the US

## H. IAEA

- Update 134 - IAEA Director General Statement on Situation in Ukraine
- Update 135 - IAEA Director General Statement on Situation in Ukraine
- Update 136 - IAEA Director General Statement on Situation in Ukraine

## I. Ukraine

- Ukraine war: Kyiv displays dummy nuclear-capable missile fired by Russia
- Russia hits Ukraine with missiles, warns of "clash between nuclear powers" as drones target Russian bases
- Ukraine still fears another Chernobyl-size disaster at Europe's largest nuclear plant
- IAEA to base staff at all Ukraine's nuclear power plants
- U.S. to send \$275 million in military aid to Ukraine; NATO chief worries war could become wider conflict

## J. United Kingdom

- A Promising Sign for Nuclear Power in the United Kingdom
- UK and US announce new energy partnership
- Defence Secretary joins AUKUS partners in landmark first meeting
- AUKUS members say plans on track for US and UK to help Australia acquire nuclear-powered submarine fleet
- £102 million government backing for nuclear and hydrogen innovation in the UK

## K. United States of America

- Joint Statement Following the Meeting Between President Biden and President Macron
- US Air Force unveils new B-21 Raider nuclear stealth bomber
- US Navy shows its prowess, shares submarine's 'undetected' port visit, docking in Indian Ocean
- Austin Says Progress Made on Developing Australia's Nuclear-Powered Subs
- US slams 'loose talk' on nuclear weapons after Putin musings
- New Mexico seeks tougher provisions for US nuclear dump
- US Defense Secretary: Russia, China 'Expanding' Nuclear Arsenals
- U.S. expected to announce major breakthrough in quest for zero-carbon nuclear fusion energy
- US scientists reach long-awaited nuclear fusion breakthrough, source says

## L. East Asia

- Japan, S Korea, US slap sanctions on N Korea over missile tests
- Crumbling nuclear plant may fuel Philippines after 36-year delay
- South Korea, US, Japan Cement Trilateral Response to North Korea's Nuclear Threats

## M. Japan

- Fukushima gets ready to discharge treated water into the sea
- Tokyo's 'counterstrike' fist is sound, but lacks nuclear punch
- Kishida aims for nuclear abolition talks at Hiroshima G7 summit
- Japan Calls China Unprecedented Challenge in Security Shift

## N. South Korea

- Seoul places new sanctions on North Korea over arms buildup
- South Korea seeks to strike balance between nuclear and renewables
- U.S. Space Force sets up South Korean HQ to monitor N Korean missiles
- South Korean APR-1400 starts commercial operation

## O. North Korea

- North Korea Fires Artillery Near Border With South Korea
- North Korea claims successful rocket test that could bolster its ICBM force



## A. India

### Does India's Navy Need More Nuclear Submarines?

*The National Interest, December 1, 2022*

The deployment of a squadron of nuclear-powered attack submarines – also known as Submersible Ship Nuclear (SSN) – near the coast of India and throughout the Indian Ocean represents a potential threat to the regional ambitions of the Chinese Navy. Diesel-electric submarines are less expensive and more suited for coastal defense but SSNs are a considerable investment for India's meager defense budget. The Indian government authorized the construction of six nuclear-powered attack submarines in 2015. Construction is expected to begin next year and the first submarine is slated to enter service in 2032. The Indian Navy recently operated a single Russian *Akula*-class attack submarine, the INS *Chakra*, on a ten-year lease.

<https://nationalinterest.org/blog/buzz/does-india-s-navy-need-more-nuclear-submarines-205974>

### Kudankulam unit 3 reactor building dome installed

*World Nuclear News, December 1, 2022*

The lower part and the top part of the 281-tonne dome for the reactor building at unit 3 of India's Kudankulam nuclear power plant was preassembled on the ground before being lifted 62 metres and installed in the design position. The lifting, by a Liebherr LR 11350 heavy crane, took place on Wednesday in an operation that took about one hour and fifteen minutes. Rosatom added that preassembling on the ground, with the installation of one structure instead of two, "made it possible to reduce the duration of construction and installation works at the reactor building by almost one month".

<https://www.world-nuclear-news.org/Articles/Kudankulam-unit-3-reactor-building-dome-installed>

### India mostly used force defensively when threatened, almost always within its own borders: Jaishankar

*The Hindu, December 2, 2022*

If India is threatened tomorrow, there is no ambiguity that it will use force, External Affairs Minister S. Jaishankar said on Thursday. However, he also stated that the country has been cautious on the use of force, noting that over the last 75 years since Independence, India has "mostly used force defensively when it was threatened, almost always within its own borders." To a question on the application of force outside the national jurisdiction, posed at a book launch, Dr. Jaishankar said that India had relatively limited experience of that. "One is Sri Lanka in 1987. It was a very difficult, very troubling and end of the day a very counter-productive experience. That did scar policy makers for a generation. Don't get sucked into endless, open-ended commitments," he said.

<https://www.thehindu.com/news/national/india-mostly-used-force-defensively-when-threatened-almost-always-within-its-own-borders-jaishankar/article66211292.ece>

### Union Minister Dr Jitendra Singh describes India as a key Global Player in the Space sector and says, India is keen to take its Space cooperation with the UAE to newer heights

*PIB, December 5, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh today described India as a key Global Player in the Space sector and reiterated that under Prime Minister Narendra Modi, India is keen to take its Space cooperation with the United Arab Emirates (UAE) to newer heights. Addressing the Opening Ceremony of the UAE summit, "Abu Dhabi Space Debate", Dr Jitendra Singh acknowledged the

presence of the UAE President, Sheikh Mohamed Bin Zayed at the Opening Ceremony and conveyed PM Modi's warm greetings to him and the people of UAE.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1880942>

## **Is China's rapid nuclear expansion a threat to India?**

*Money Control, December 5, 2022*

India and issues relating to the country figure large in the latest US Department of Defense (Pentagon) report to Congress released on Tuesday. It needs to be emphasised that this is a report of a major US department which spends a great deal of money on ensuring the security of the United States (US). The money is appropriated by the US Congress, and therefore, there is often a tendency to overstate threats or to make them sound more immediate than they actually are. At the same time, while the Pentagon may be guilty of overstatement, its assessments are not figments of their imagination, but extrapolations of actual developments on the ground. The headline takeaway from the 2022 report is that China could triple its nuclear arsenal by 2035. This is something that has significant implications for India.

<https://www.moneycontrol.com/news/opinion/is-chinas-rapid-nuclear-expansion-a-threat-to-india-9650221.html>

**Union Minister Dr Jitendra says, the Department of Space is in the process of establishing a predictable, forward-looking, enabling regulatory regime for space activities in the country, through a comprehensive, well-defined policy for the entire gamut of such activities**

*PIB, December 7, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh said, the Department of Space

is in the process of establishing a predictable, forward-looking, enabling regulatory regime for space activities in the country, through a comprehensive, well-defined policy for the entire gamut of such activities. In a Statement laid on the table of the Lok Sabha in reply to a question regarding launch of Vikram-S Rocket, Dr Jitendra Singh said, the NewSpace India Limited (NSIL) a Public Sector Enterprise under Department of Space, has been empowered to bring a commerce-oriented approach to space activities. These initiatives shall go a long way in expanding the nation's share in global space economy and strengthen India's position as a leading space power, he added.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881377>

## **Chinese Spy Ships May Complicate India's Missile Test Plans In Indian Ocean For The Second Month In A Row**

*Swarajya, December 7, 2022*

Chinese spy ships may complicate India's plans to test missiles in the Indian Ocean region for the second month in a row. A Chinese intelligence-gathering ship, Yuan Wang 5, entered the Indian Ocean earlier this month, just weeks ahead of a likely missile test by India in the region. India has notified a no-fly zone, indicative of a missile test, in a large part of the Indian Ocean for 15 and 16 December. The notification suggests that the missile likely to be tested will fly to a maximum distance of 5,400 kilometers in the Indian Ocean. It is believed that India is getting ready to test its K-4 submarine-launched ballistic missile (SLBM) or land-based Agni-V ballistic missile.

<https://swarajyamag.com/news-brief/chinese-spy-ships-may-complicate-indias-missile-test-plans-in-indian-ocean-for-the-second-month-in-a-row>

## Centre informs that the usage of Indian Regional Navigation Satellite System (NaviC system) has increased in India

*PIB, December 7, 2022*

The Centre today informed that the usage of Indian Regional Navigation Satellite System (NaviC system) has increased in India. In a written reply to a question in the Lok Sabha, Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh said, NavIC finds utilisation in national projects like public vehicle safety, power grid synchronisation, real-time train information system, fishermen safety, etc. Other upcoming initiatives viz. common alert protocol-based emergency warning, time dissemination, geodetic network, unmanned aerial vehicles, etc. are in the process of adopting NavIC system, the Minister informed.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881427>

## Union Minister Dr Jitendra says, ISRO will develop "Spatial Data Infrastructure geoportal 'Geo-Ladakh' for UT-Ladakh"

*PIB, December 7, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh today informed that Government of UT - Ladakh has approached the Indian Institute of Remote Sensing (IIRS), a unit of Indian Space Research Organisation (ISRO) for developing "Spatial Data Infrastructure geoportal 'Geo-Ladakh' for UT-Ladakh". In a written reply to a question in the Lok Sabha today, Dr Jitendra Singh said, the project encompasses spatial database generation (water resources, vegetation and energy potential) using remote sensing, geospatial techniques and the development of a Geo-portal for hosting this database.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881469>

## India announces plans to build more nuclear power plants

*Power Technology, December 8, 2022*

The Indian government has said it intends to build more nuclear power plants to boost the country's clean energy generation. Union Minister of State for Science and Technology Jitendra Singh said that the government has, in principle, given approval for five new locations for building nuclear power plants in the future.

Singh's statement was given as a written reply to a question in Lok Sabha, the lower house of the Indian Parliament. The government has given administrative and financial approval for building ten locally designed, pressurised heavy water reactors (PHWRs) in fleet mode. These PHWRs are planned to be built over the next three years and each PHWR will have 70MW of capacity, amounting to a total capacity of 700MW.

<https://www.power-technology.com/news/india-nuclear-power-plants/>

## US blacklists Pakistani companies for supporting Islamabad's 'un-safeguarded' nuclear activities

*WION, December 8, 2022*

The United States has blacklisted half a dozen Pakistani companies for supporting Islamabad's "un-safeguarded nuclear activities". The companies have been put on the American export control list by the Bureau of industry and security (BIS) which comes under the US department of commerce which restricts access for these companies to commodities, software and technologies. The US statement said many of these companies have been added to the list as they have been "found to supply or attempt to supply items...to Pakistan's un-safeguarded nuclear activities and ballistic missile program".

<https://www.wionews.com/south-asia/us-blacklists-pakistani-companies-for-supporting-islamabads-un-safeguarded-nuclear-activities-541399>



## **Union Minister Dr Jitendra says, Government proposes to widen the participation of private players in space domain, by allowing them to undertake end-to-end space activities**

*PIB, December 8, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh said, Government proposes to widen the participation of private players in space domain, by allowing them to undertake end-to-end space activities. In a written reply to a question in the Rajya Sabha today, Dr Jitendra Singh said, a single-window agency, INSPACE - Indian National Space Promotion & Authorization Centre, has been created in this regard to promote, handhold and authorize space activities of Non-Government Entities (NGEs). The Minister also informed that in parallel, NewSpace India Limited (NSIL), a Central Public Sector Enterprise under Department of Space mandated to carry out operational and commercial activities, so far largely conducted by ISRO.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881774>

## **Security in place to secure India's nuclear power plants from cyber-attacks: Singh**

*Livemint, December 8, 2022*

Security arrangements are in place to secure India's nuclear power plant systems from cyber-attack, said Union Minister of state for Science and Technology, Jitendra Singh. In a written reply to a question in Rajya Sabha, the minister said these security measures include authorisation, authentication & access control mechanisms, strict configuration control and surveillance. Singh added that nuclear power plant systems are also isolated from Internet and are not accessible from administrative network. "Several measures have been taken to strengthen information security in administrative networks in nuclear power plants like, hardening of internet and administrative intranet

connectivity, restriction on removable media, blocking of websites & IPs."

<https://www.livemint.com/news/india/security-in-place-to-secure-india-s-nuclear-power-plants-from-cyber-attacks-singh-11670489850008.html>

## **The U.S., Canada, and the Indian Nuclear Program, 1968-1974**

*National Security Archive, December 9, 2022*

Canadian inspectors visiting the Canada-Indian Reactor (CIR) at Trombay during June 1968 were "unsettled" by data suggesting that India was heading toward the "development of a nuclear device," according to a recently declassified U.S. State Department telegram obtained by the National Security Archive. Canadian nuclear experts later told U.S. diplomats that the reactor fuel had been irradiated at a level low enough to produce "weapons grade plutonium" and that, if India was seeking to produce plutonium, the reactor could generate up to 12 kilograms a year. The document is among a new collection of declassified records published here today that shed light on the early years of the Indian nuclear program and U.S. policy toward India's nuclear ambitions in the years before its first nuclear test in May 1974.

<https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2022-12-09/us-canada-and-indian-nuclear-program-1968-1974>

## **PM Modi to skip annual summit with Russia amid Vladimir Putin's nuclear threat to Ukraine**

*Livemint, December 9, 2022*

As a result of Vladimir Putin's threat to use nuclear weapons in the conflict in Ukraine, Prime Minister Narendra Modi, will not be hosting their yearly face-to-face summit. Since the relationship was elevated to a strategic partnership in 2000, it would be just the second occasion when the leaders of Russia and India haven't personally interacted. The summit, which is typically held in December, was only

postponed once, in the midst of the pandemic, in 2020. A senior official with knowledge of the situation, who asked not to be named due to the sensitivity of the matter, said that although the relationship between India and Russia is still strong, boasting about the friendship now might not be advantageous for Modi.

<https://www.livemint.com/news/india/pm-modi-to-skip-annual-summit-with-russia-amid-vladimir-putin-s-nuclear-threat-to-ukraine-11670580311232.html>

### **India's power giant NTPC will turn to nuclear fleet in climate goal chase**

*The Economic Times, December 8, 2022*

NTPC Ltd., India's top power producer, is planning to build a massive nuclear fleet that'll aid the nation's push to shift away from coal and curb emissions to hit net-zero by 2070. The state-run company aims to install 20 to 30 gigawatts of nuclear capacity by 2040, according to a person familiar with the plans, who requested anonymity to discuss the private proposals and said the target remains tentative. India currently has 22 operational reactors with about 6.8 gigawatts of capacity. New Delhi-based NTPC is considering deploying small-scale modular reactors, known as SMRs, as part of the strategy, according to multiple people with knowledge of the company's plans. The producer has an overall power fleet of 70 gigawatts, of which more than 80% is coal-fired.

<https://economictimes.indiatimes.com/industry/renewables/indias-power-giant-ntpc-will-turn-to-nuclear-fleet-in-climate-goal-chase/articleshow/96074775.cms>

### **Why New Zealand should back India's bid to join the Nuclear Suppliers Group | The Strategist**

*ASPI The Strategist, December 12, 2022*

India has long been interested in joining the Nuclear Suppliers Group (NSG) that was established in 1975, after India's 'peaceful nuclear explosion' in the previous year, to

prevent misuses of transferred nuclear technology and materials. In 2008, the NSG controversially decided to grant India a 'clean waiver' from its strict rules linked to the Nuclear Non-Proliferation Treaty (NPT). The US position, ultimately accepted by most other supplier countries, was that there were significant non-proliferation benefits to bringing India inside the tent of safeguarded nuclear commerce and export controls, that putting most of India's nuclear reactors under international safeguards was better than having none under such controls and that India's nuclear weapons program would continue regardless of international civil cooperation. Yet, the 2008 India-specific exemption raised questions of consistent treaty interpretation and application of NSG guidelines. Many criticised it as a particularly egregious example of moral hazard that rewarded India for its twin bad behaviours of not signing the NPT and building nuclear bombs.

<https://www.aspistrategist.org.au/why-new-zealand-should-back-indias-bid-to-join-the-nuclear-suppliers-group/>

### **Union Minister Dr Jitendra says, ISRO has taken initiatives for feasibility studies on missions to Venus as well as Aeronomy studies**

*PIB, December 14, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh today informed that ISRO has taken initiatives for feasibility studies on missions to Venus as well as Aeronomy studies. The term "aeronomy," coined and introduced about 60 years ago, refers to the scientific study of the upper atmospheric regions of the Earth and other solar system bodies. It covers the chemistry, dynamics and energy balance of both neutral and charged particles. In a written reply to a question in the Lok Sabha, Dr Jitendra Singh said, both these missions are being conceptualized and the scientific scopes are being deliberated

nationally with participation of science community.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1883322>

### **Is Indian Navy's submarine development losing edge over Pakistan?**

*India Today, December 14, 2022*

Indian submariners, on December 8, took to social media to wish everyone on the occasion of Indian Submarine Day. It was on this very day in 1967 that the Indian Navy's first submarine, INS *Kalvari*, was commissioned at the Soviet era seaport of Riga. But celebrations aside, submariners and Navy veterans are also concerned about the depleting underwater warfare capabilities of the Indian Navy, thanks to a submarine crunch. The Indian Navy, on December 20, received the fifth Scorpene-class submarine *Vagir*. The submarine was built at the Mazagon Dock Shipbuilders Limited (MDL) in Mumbai in collaboration with the Naval Group of France, under the Indian Navy's Project-75, which entails indigenously producing six Scorpene submarines.

<https://www.indiatoday.in/india-today-insight/story/is-indian-navys-submarine-development-losing-edge-over-pakistan-2311980-2022-12-21>

### **Union Minister Dr Jitendra says, ISRO through its commercial arms has successfully launched 177 foreign satellites belonging to 19 countries during the last five years**

*PIB, December 15, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh today said, ISRO through its commercial arms has successfully launched 177 foreign satellites belonging to 19 countries during the last five years. In a written reply to a question in the Rajya Sabha, Dr Jitendra Singh said, from January 2018 to November 2022, ISRO has successfully launched 177 foreign satellites belonging to countries like Australia, Brazil,

Canada, Colombia, Finland, France, Israel, Italy, Japan, Lithuania, Luxembourg, Malaysia, Netherlands, Republic of Korea, Singapore, Spain, Switzerland, United Kingdom and USA, on-board PSLV and GSLV-MkIII launchers under commercial agreement. Dr Jitendra Singh informed that Forex generated through launching of these 177 foreign satellites from January 2018 to November 2022 is approximately 94 million USD and 46 million Euro.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1883677>

### **Union Minister Dr Jitendra says, Government proposes to set up more nuclear power plants for augmenting production of clean energy**

*PIB, December 7, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh said, Government proposes to set up more nuclear power plants for augmenting production of clean energy. In a written reply to a question in the Lok Sabha, Dr Jitendra Singh said, in addition to the eleven (11) reactors (8700 MW) under construction, the Government has accorded administrative approval and financial sanction for construction of ten (10) indigenous 700 MW Pressurized Heavy Water Reactors (PHWRs) to be set up in fleet mode.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881375>

### **Union Minister Dr Jitendra says, security arrangements are in place to secure India's nuclear power plant systems from cyber-attack**

*PIB, December 8, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh said, security arrangements are in place to secure India's nuclear power plant systems from cyber-attack. In a written reply to a question in the Rajya



Sabha, Dr Jitendra Singh said, these security measures include authorization, authentication & access control mechanisms, strict configuration control and surveillance. Additionally, the nuclear power plant systems are isolated from internet and are not accessible from administrative network. Several measures have been taken to strengthen Information Security in administrative networks in nuclear power plants like, hardening of internet and administrative intranet connectivity, restriction on removable media, blocking of websites & IPs.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881733>

### **Union Minister Dr Jitendra says, four units of 1000 MW each of Kudankulam Nuclear Power Plant will be completed by 2027**

*PIB, December 8, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh said, at present, Kudankulam Nuclear Power Plant Units 1&2 of 1000 MW capacity each are already in operation and the remaining four units of 1000 MW each are under construction. On their progressive completion, the full capacity of Kudankulam site of 6000 MW is expected to be reached by the year 2027.

In a statement laid on the table of the Rajya Sabha in reply to a question, Dr Jitendra Singh said, the projected installed capacity of Kudankulam site is 6000 MW, comprising of six nuclear power reactors of 1000 MW capacity each. The first two units i.e. KKNPP-1&2 (2X1000 MW) are in operation and the remaining four units i.e. KKNPP-3&4 (2X1000 MW) and KKNPP-5&6 (2X1000 MW) are under construction.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881734>

### **Union Minister Dr Jitendra says, Nuclear Power Corporation of India Limited (NPCIL) has so far spent about Rs. 663 crores on its CSR**

### **programmes, of which about 70% was incurred on development of infrastructure facilities in the villages around nuclear power plant sites**

*PIB, December 8, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh said, measures for safe storage and management of Spent Fuel and nuclear & radioactive wastes are in place at all nuclear power plant sites including Kalpakkam and Kudankulam in Tamilnadu. In a written reply to a question in the Rajya Sabha, Dr Jitendra Singh said, after its use in reactor, spent fuel is kept in water-filled storage pools and is under continuous monitoring. In case of Kudankulam, as the fuel is under IAEA safeguards, security of stored spent fuel is also ensured by IAEA inspectors. Spent fuel storage pools are designed as per AERB guidelines, which is in line with international regulatory practices.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1881736>

### **Union Minister Dr Jitendra says, India is not reliant on China for accessing rare earth minerals**

*PIB, December 14, 2022*

Union Minister of State (Independent Charge) Atomic Energy and Space, Dr Jitendra Singh today said that India is not reliant on China for accessing rare earth minerals. In a written reply to a question in the Lok Sabha, Dr Jitendra Singh said, in India, capacity and capabilities in terms of mining, processing, extraction, refining and production of high pure RE oxides is adequately available. Dr Jitendra Singh said, the production of Monazite the primary source of rare earth mineral in India is around 4000 MT per annum. Though IREL(India) Limited, formerly India Rare Earths Limited has installed capacity to process about 10,000 MT of rare earth bearing mineral, the production is capped on account of non-grant of mining leases, environment clearance,



CRZ clearance from MoEF & CC, Consent to Operate, restrictions on account of Forest and uncontrolled inhabitation etc.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1883492>

*India to commission 20 new Nuclear Power Plants by 2031: Govt*

*The Dispatch, December 14, 2022*

India plans to commission 20 nuclear power plants by 2031, adding nearly 15,000 MW in power generating capacity, the government told the Lok Sabha on Wednesday. The first of these 20 nuclear power plants, a 700 MW unit, is expected to be commissioned in 2023 at Kakrapar in Gujarat, which already has three atomic power generating units operational. According to a written reply by Minister of State in the PMO Jitendra Singh, the 500 MW Prototype Fast Breeder Reactor at Kalpakkam is likely to be operational in 2024, followed by two 1,000 MW units at Kudankulam in 2025.

<https://www.thedispatch.in/india-to-commission-20-new-nuclear-power-plants-by-2031-govt/>

### **India to fire up nuclear power production in green shift**

*Economic Times, December 15, 2022*

India is working on a plan to fire up nuclear power production to supplement the country's renewable energy programme as it looks for ways to meet climate change targets. The policy interventions could include incentives for the private sector for setting up nuclear power plants in public-private partnership mode. The thrust will be on small modular nuclear reactors (SMRs) that require less space at capital costs lower than traditional nuclear power plants. A senior government official told ET that the Niti Aayog will start stakeholder consultations shortly and a policy will be put in place soon to invite the private sector to set up these small nuclear power plants.

<https://economictimes.indiatimes.com/industry/energy/power/india-to-fire-up-nuclear-power-production-in-green-shift/articleshow/96238451.cms>

### **Nuclear plants are 'well protected' from all types of intrusions: Govt**

*The Economic Times, December 15, 2022*

The government on Thursday asserted that nuclear plants in the country are "well protected" from intrusions including from cyber-attacks. Minister of State (Independent Charge), Department of Atomic Energy, Jitendra Singh also said the government has entered into Inter-Government Agreements with the Russian Federation for setting up Kudankulam Nuclear Power Project. He was asked about the steps being taken by the government to prevent cyber-attacks on nuclear plants.

[https://economictimes.indiatimes.com/news/india/nuclear-plants-are-well-protected-from-all-types-of-intrusions-govt/articleshow/96253451.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/news/india/nuclear-plants-are-well-protected-from-all-types-of-intrusions-govt/articleshow/96253451.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

### **Russia releases video of nuclear-capable ICBM being loaded into silo, following reports that US is preparing to send Patriot missiles to Ukraine**

*Business Insider, December 15, 2022*

Russia's defense ministry shared a video of a intercontinental ballistic missile being loaded into a launch silo, days after reports surfaced that the US is preparing to send an advanced Patriot air defense system to Ukraine. The Russian ministry shared the video on Telegram on Thursday, saying that it showed the loading of an "intercontinental ballistic missile into silo launcher" in Kozelsk, a town in western Russia. It claimed the missile was a "Yars," which has a nuclear warhead. Russia previously fired a Yars missile in October, as part of a test conducted by the country's nuclear forces.

<https://www.businessinsider.in/international/news/russia-releases-video-of-nuclear-capable-icbm-being-loaded-into-silo-following-reports-that-us-is-preparing-to-send-patriot-missiles-to-ukraine/articleshow/96255627.cms>

## India's renewed nuclear energy thrust is for the world to emulate

*Reuters, December 15, 2022*

Nuclear power has always been part of India's plans. But there's a new impetus to the nuclear strategy, given energy security concerns in the wake of the/ Ukraine War. Jitendra Singh, the Minister of State for Science and Technology, has stated in the Lok Sabha that five new locations have been earmarked for building nuclear power facilities and funds have been sanctioned for setting up 10 new/ Pressurized Heavy Water Reactors (PHWRs), each with a capacity of 700 MW. The 10 new plants will deploy indigenous technology in "fleet mode". The same blueprint will be rolled out at the 10 plants, within five years from start of construction. India currently has/ 22 nuclear reactors with an aggregated capacity of 6780 MW (6.8 GW), contributing about 3 per cent of total grid-connected capacity. The PSU power generator, NTPC, has plans to add another 20-30 GW (Gigawatt) of nuclear by 2040.

<https://www.livemint.com/opinion/online-views/indias-renewed-nuclear-energy-thrust-is-for-the-world-to-emulate-11670915477117.html>

### B. Russia

## Nuclear war risk, no need for new mobilization: what Putin said at Human Rights Council

*TASS, December 8, 2022*

There is no need for any additional military call-up in Russia, as half of the draftees are still undergoing training, Russian President Vladimir Putin said at a meeting with members of the Civil Society and Human Rights Council on Wednesday. The president warned about an increasing risk of nuclear war, but pointed out that Moscow did not intend to "brandish nuclear weapons like a razor." He said the cases of desertion among Russian soldiers were few, while the West's disregard for the interests of people of Donbass was a latent form of Russophobia. Out of the 300,000 mobilized soldiers, 150,000 are deployed to the area of the special military operation, and 50% of

them are deployed to combat units, while the rest remain "in the second, third lines" or are undergoing additional training.

<https://tass.com/politics/1547445>

## Russia not sure Kiev is ready to show sound approach to security zone around ZNPP

*TASS, December 8, 2022*

Russia is not sure that Kiev is ready to show a sound approach to the issue of the establishment of a security zone around the Zaporozhye nuclear power plant (ZNPP), Russian Deputy Foreign Minister Sergey Ryabkov said in an interview with the Izvestia daily, which came out on Thursday. "The main unclarified problem for us is that we are not sure that Kiev is ready to demonstrate a sound approach to this matter. We cannot establish a zone, which would augment the risks for the ZNPP, and, as a matter of fact, Kiev and its sponsors are geared up for that. They want us to leave the plant under the pretext of settling this matter in contact with the IAEA. In this case, the plant, naturally, will be seized immediately. We cannot do it, cannot agree with that," he stressed. He noted that a compromise concerning the security of the Zaporozhye nuclear power plant (ZNPP) will be impossible in case Kiev tries to "win anything" from Moscow.

<https://tass.com/politics/1547505>

## US readiness to settle issues of Russian inspectors' trip is to be committed to paper

*TASS, December 8, 2022*

The United States says that it is ready to settle with its allies logistics issues for Russian inspections of nuclear facilities, but such agreements should be 'committed to paper,' Russian Deputy Foreign Minister Sergey Ryabkov said in an interview with the Izvestia daily, which came out on Thursday. "As for the regimes of inspections, various signals came from the United States. They hinted that they would agree with their allies, who have

closed their airspace for our flights. They sent other signals hinting that everything will be regulated," he said. "But it should be operating like clock-work. It should be committed to paper, recorder in a document, the more so as there are a lot of other topics along with the problem of flights," he noted, adding that in the process of preparations for the postponed session of the bilateral consultative commission, the Americans reduced everything to the topic of inspections.

<https://tass.com/politics/1547507>

### **Russia maintains nuclear deterrence forces at high level, senior diplomat says**

*TASS, December 8, 2022*

Russia's nuclear deterrence forces are maintained at a high level, which ensures the country's security, Deputy Foreign Minister Sergey Ryabkov said on Thursday. "The Russian leadership has repeatedly stressed and this is what the president does, we have covered a long way in modernizing the strategic nuclear triad and our nuclear deterrence forces are maintained at a high level, which is admitted by our enemies, and so security is ensured in all its components, both nuclear and conventional," the senior Russian diplomat said in a live broadcast on the Rossiya-24 TV Channel. "In any case, all these figure hikes have no effect on us, our resolve and firmness in safeguarding our own interests, protecting our security and ensuring its complete and 100% provision," Ryabkov said, commenting on the US new defense budget for 2023.

<https://tass.com/politics/1547665>

### **NATO was aware of Kiev's plans to attack Russian airfields, Russian diplomat says**

*TASS, December 8, 2022*

NATO was aware of the Armed Forces of Ukraine's preparations for drone attacks on Russian airfields, head of Russia's delegation to the Vienna talks on military security and arms control Konstantin Gavrillov said. "Provocations against Russia's Dyagilevo

and Engels strategic airfields, which involved Tu-141 Strizh jet combat drones, could have created serious nuclear security threats," the diplomat pointed out at a plenary session of the OSCE Forum on Security Cooperation. "NATO was aware of the preparations for the recent Ukrainian attacks on Russian military airfields. We immediately responded to them by conducting a massive strike on Ukraine's military command system, defense industry facilities and related energy sites. No one should have any doubts that this is what will happen every time if Ukraine continues to carry out terrorist attacks," Gavrillov added.

<https://tass.com/politics/1547693>

### **Russia to respond quickly, effectively to US-induced missile risks – MFA spokeswoman**

*TASS, December 8, 2022*

Russia adheres to its moratorium on the deployment of intermediate and shorter-range missiles, but it will not ignore new missile risks due to the actions of the US and will respond quickly to the emergence of such threats, Foreign Ministry Spokeswoman Maria Zakharova told a briefing on Thursday. "It is clear that Russia will not ignore the emergence of new missile risks. Nevertheless, at present, we remain committed to our unilaterally declared moratorium on the deployment of land-based intermediate and shorter-range missiles, until similar US-made weapons appear in the respective regions. If that happens, we will have to respond swiftly, effectively and forcefully to any threats that emerge to our security," the diplomat stressed.

<https://tass.com/politics/1547775>

### **Volunteers collect in Arctic more than 3,000 tons of waste, high-ranking official says**

*TASS, December 8, 2022*

The Clean Arctic project's volunteers collected more than 3,000 tons of waste in Arctic cleanup missions, Minister for

Development of the Far East and Arctic Alexey Chekunov told an Arctic forum on Thursday. "In 2022, one and a half times more volunteers [have participated in the project] and collected more than 3,000 tons [of waste], which is twice more than what they collected in 2021," he told the Arctic: Present and Future forum. During the presentation, the minister said 1,500 volunteers joined the project in 2021. The project, he said, is being implemented throughout the Russian Arctic - from Murmansk to Anadyr.

<https://tass.com/economy/1547855>

### **Kiev shamelessly ignores presence of IAEA officials at ZNPP – Russian MFA**

*TASS, December 8, 2022*

Kiev is blatantly ignoring the presence of representatives from the International Atomic Energy Agency (IAEA) at the Zaporozhye NPP, while the main goal of a security zone around the facility, being discussed at the moment, is a stop to Ukraine's bombardments, Russian Foreign Ministry spokeswoman Maria Zakharova told a news briefing on Thursday. "As far as the Zaporozhye nuclear power plant is concerned, the main goal that the creation of such a zone pursues is the guaranteed prevention of bombardments by Ukraine's military. These shellings can result in a man-made disaster with unpredictable consequences, which we have warned of more than once. The Ukrainian authorities, at the instigation of their Western patrons, are certain about their complete impunity and shamelessly ignore the presence of IAEA officials at the power plant," Zakharova said.

<https://tass.com/politics/1547859>

### **France bought 153 tons of enriched uranium from Russia in 2022 – magazine**

*TASS, December 8, 2022*

The French energy corporation EDF (Electricite de France) purchased 153 tons of enriched uranium from Russian

contractors in 2022. This is according to the data the Point magazine published on Thursday. In total, since the beginning of the year, EDF has purchased 7,000 tons of uranium ore for its nuclear power plants. The publication clarifies that this includes not only the ore mined in Russia - direct mining for France is also carried out in Kazakhstan, Canada, Niger and Uzbekistan. However, in accordance with long-term contracts concluded with Russian nuclear corporation Rosatom, the French send part of the uranium ore for enrichment to Russia. Enriched uranium is returned to France or other countries, where it is already being converted into fuel for nuclear power plants. The EDF subsidiary Framatome has a fuel cell plant in Germany, as well as in the French commune of Romans-sur-Isere.

<https://tass.com/economy/1547951>

### **Russia to design spacecraft engine that can travel to Solar System's border**

*TASS, December 9, 2022*

A project to design an engine that can bring a spacecraft to the Solar System's boundaries is currently under way at Russia's Fakel design bureau, the enterprise's chief Gennady Abramenzov has told TASS. "The Fakel design bureau, with scientific guidance of the Kurchatov Institute, is developing a high-power ion thruster," he said. "It will require a nuclear source of power and will be used during interplanetary space missions, with the potential of travelling to the boundaries of the solar system." According to the official, the project will be a lengthy effort, since it employs previously untested physical principles and processes.

<https://tass.com/science/1548113>

### **Clean Arctic project plans 40 missions for year 2023**

*TASS, December 9, 2022*

The Clean Arctic federal project plans about 40 expeditions for the coming year - to remove the waste, remaining in the



Arctic zone since the Soviet times, the project's COB Ruslan Gubaidullin told TASS. "[This year we had] more than 30 expeditions, and we plan more than 40 missions for the coming year," he said on sidelines of the 12th international forum Arctic: Present and Future. An average expedition continues for one week, he said, however, a few expeditions in 2022 continued for one month or for 45 days. Representatives from all Russian regions have participated in the project, he added.

<https://tass.com/economy/1548203>

### **Restoration of INF treaty not on agenda for now – Kremlin spokesman**

*TASS, December 9, 2022*

The possibility of restoring the operation of the Intermediate-Range Nuclear Forces Treaty (INF Treaty) between Russia and the United States has not yet been discussed, Russian Presidential Spokesman Dmitry Peskov said in an interview with the daily Izvestia, published on Friday. "Not for the time being," Peskov replied to the corresponding question. The Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles was signed by the General Secretary of the CPSU Central Committee Mikhail Gorbachev and US President Ronald Reagan in Washington on December 8, 1987. The INF Treaty became the first ever document on the elimination of an entire class of weapons. Its signatories pledged to eliminate all ground-based ballistic and cruise missiles of medium range (from 1,000 to 5,500 kilometers) and short range (from 500 to 1,000 kilometers). Also, they agreed not to produce or test new INF missiles.

<https://tass.com/politics/1548285>

### **SCO, CIS countries to pool efforts to ward off biological risks – Shoigu**

*TASS, December 9, 2022*

The member-countries of the Shanghai Cooperation Organization (SCO) and the

Commonwealth of Independent States (CIS) will join forces to ward off biological threats, Russian Defense Sergey Shoigu said after a meeting of the SCO and CIS defense ministers on Friday. "The importance of combining efforts to prevent dangerous factors and biological risks posed by activities in circumvention of international obligations regarding the non-proliferation of nuclear, biological and chemical weapons was emphasized," he said. Shoigu also stressed that the meeting participants strongly condemned any attempts at rehabilitating and glorifying Nazism, fascism and militarism, falsifying history, and revising the causes and results of World War II. The defense ministers spoke out against the revival of old radical, inhuman and extremist ideologies that could once again lead the world to disaster and the emergence of new ones.

<https://tass.com/politics/1548435>

### **Russia may borrow US idea of disarming strike – Putin**

*TASS, December 9, 2022*

Russian President Vladimir Putin has said that Russia might give thought to borrowing some US ideas on how to ensure its security, including the tactic of delivering a disarming strike. "First, the United States has a pre-emptive strike theory," Putin told the media on Friday. "Second, they are developing a disarming strike system. What is that? It is a system of attacking command and control centers with modern high-tech means with the aim to incapacitate them, and so on." Putin said that in particular he was referring to cruise missiles, including ground-based ones, which Moscow once agreed to scrap. "We eliminated ours, while the Americans were smarter at that time," he continued. "They scrapped the ground-based missiles, but retained the air- and sea-launched ones. They still have them, upgraded and even more efficient."

<https://tass.com/politics/1548711>

## **IAEA experts carry out inspections at Khmelnytskaya and Rovenskaya NPPs**

*TASS, December 10, 2022*

The International Atomic Energy Agency (IAEA) inspected the Khmelnytskaya and Rovenskaya nuclear power plants, located in Ukraine, this week, according to the statement published on the IAEA website on Friday. "The International Atomic Energy Agency (IAEA) carried out nuclear safety and security missions at Ukraine's Khmelnytsky and Rivne (Khmelnytskaya and Rovenskaya - TASS) Nuclear Power Plants (NPPs) this week as part of its ongoing and intensifying activities to help avert the danger of a nuclear accident during the current armed conflict in the country," the statement said.

<https://tass.com/world/1548823>

## **Fourth team of IAEA experts arrives at Zaporozhye NPP – statement**

*TASS, December 10, 2022*

The International Atomic Energy Agency (IAEA) has carried out a fourth rotation of its experts at the Zaporozhye nuclear power plant, the agency said in a statement on Friday. "At the Zaporizhzhya (Zaporozhye - TASS) NPP this week, a new team of IAEA experts arrived at the site, replacing those who had been there for the past several weeks. It is the fourth IAEA team at Europe's largest NPP since the IAEA Support and Assistance Mission to Zaporizhzhya (ISAMZ) was established on 1 September," the statement said.

<https://tass.com/world/1548819>

## **Russia in talks with IAEA to prevent Zaporozhye plant from posing any threat – envoy**

*TASS, December 12, 2022*

Russia is holding substantive discussions with the International Atomic Energy Agency (IAEA) on the Zaporozhye nuclear power plant so that the facility won't pose any threat due to the reckless steps by Ukraine, a senior Russian diplomat told

reporters on Monday. Commenting on the latest round of political consultations between Russia and Turkey that recently concluded in Istanbul, Russian Deputy Foreign Minister Sergey Vershinin said, "As for the Zaporozhye NPP, which is located on Russian soil and is under Russia's control, we have been in very close contact with the IAEA. Substantive discussions are underway so that this peaceful nuclear facility won't pose any threat to civilians both in the region and elsewhere due to Ukraine's reckless actions. Everybody realizes how dangerous the recent reckless steps by Ukraine have been."

<https://tass.com/politics/1549245>

## **Zaporozhye NPP's management interested in cooperation with IAEA, director says**

*TASS, December 12, 2022*

The Zaporozhye Nuclear Power Plant's management is interested in cooperation with the International Atomic Energy Agency's (IAEA) employees, the plant's Director Yuri Chernichuk told the Rossiya-24 TV channel on Monday. "Two days ago, another rotation took place and two representatives of the agency arrived here," he noted. "I initially said that the plant is fully open to provide the international community with all the information about the situation at the facility, we are the ones who are the most interested in this," Chernichuk said. "We communicate with [IAEA] representatives twice a day, we hold meetings every morning and evening, where we discuss all issues and I provide them with information," the nuclear power plant's director added.

<https://tass.com/society/1549331>

## **Kremlin doesn't plan to change nuclear doctrine quickly – spokesman**

*TASS, December 12, 2022*

The Kremlin doesn't plan to change the Russian nuclear doctrine quickly, but is

comparing it with provisions that are adopted by the US, Kremlin Spokesman Dmitry Peskov said on Monday. "It's not about some quick moves in that regard," he said, when asked by TASS whether Russia could revise its nuclear doctrine. "It's about the fact that there's a nonstop thinking process, a collation of doctrinal tenets, a regular analysis of that by experts, including from the perspective of how the broader situation is unfolding," he said. Last week, Russian President Vladimir Putin said Moscow could consider "adopting" Washington's ideas for maintaining its security, including the disarming strike tactics.

<https://tass.com/politics/1549401>

### **Zaporozhye NPP director refutes reports about deployment of Grad systems**

*TASS, December 12, 2022*

Director of the Zaporozhye nuclear power plant Yury Chernichuk has refuted reports about the deployment of Grad multiple rocket launchers on the plant's territory. "The information about Grad systems <...> is untrue. Neither I nor my personnel have ever seen any Grad systems on the plant's territory," he said in an interview with the Rossiya-24 television channel on Monday. Ukraine's energy company Energoatom said earlier that the Russian military had allegedly deployed Grad systems on the territory of the Zaporozhye NPP.

<https://tass.com/defense/1549419>

### **ZNPP came under shelling by Ukrainian troops on December 11**

*TASS, December 12, 2022*

Ukrainian troops shelled the industrial zone of the Zaporozhye nuclear power plant (ZNPP) from Uragan multiple rocket launchers on Sunday, Renat Karchaa, an adviser to the head of Russia's Rosenergoatom nuclear power engineering company, said on Monday. "Yesterday, Ukrainian troops shot the industrial zone from an Uragan system. A shell hit the territory of the transport shop. Luckily, no

one was hurt," he said, adding that a garage with buses used to carry the plant's employees was damaged.

<https://tass.com/politics/1549547>

### **EU urges Iran not to ship drones, missiles to Russia, to stop supporting regional allies**

*TASS, December 12, 2022*

The EU called on Iran not to ship drones and missiles to Russia, not to work on development of nuclear weapons, not to support its allies in the region, protect the rights of minorities, abolish death penalty and comply with all its "international obligations" in the European Council statement on Iran, adopted Monday. "The European Union strongly condemns and considers unacceptable any type of Iran's military support, including deliveries of unmanned aerial vehicles (UAVs - 'drones'), to Russia's [special military operation in] Ukraine," the statement reads. "The European Union strongly cautions Iran against any new deliveries of weapons to Russia, in particular any steps towards possible transfers of short-range ballistic missiles to Russia."

<https://tass.com/world/1549561>

### **IAEA to deploy its security missions in 'all of Ukraine's nuclear power plants' – Grossi**

*TASS December 13, 2022*

Director General of the International Atomic Energy Agency (IAEA) Rafael Grossi has discussed establishing a security zone at the Zaporozhye nuclear power plant and the agency's next missions at a Paris meeting with Ukrainian Prime Minister Denis Shmygal. "We agreed to deploy IAEA safety and security missions in all of Ukraine's nuclear power plants. Work on the establishment of the Zaporozhye NPP protection zone continues," Grossi wrote on Twitter on Tuesday. The Zaporozhye nuclear plant located in the town of Enerгодar is the largest in Europe. In late February, the Zaporozhye facility was placed under the

Russian army's control. The plant continued to operate normally. An IAEA mission led by Grossi visited it in early September. After the delegation left the site, the agency's staff remained there as observers. Later, the IAEA published a report calling for the creation of a safety zone around the plant to prevent emergencies due to hostilities.

<https://tass.com/politics/1549711>

### **Clean Arctic plans mission on Spitsbergen for spring**

*TASS, December 13, 2022*

The Clean Arctic federal project plans to begin a cleanup mission on Spitsbergen in spring, 2023, the project's COB Ruslan Gubaidullin told TASS. "From May, we will be able to begin working there (on Spitsbergen - TASS)," he said on sidelines of the 12th international forum Arctic: Present and Future. Foreign volunteers will be able to participate in the mission on Spitsbergen, he added. Earlier, Minister for Development of the Far East and Arctic Alexey Chekunov said Spitsbergen's future is not in coal. The archipelago attracts tourists and this direction requires investments. Russia has been working on Spitsbergen for more than 90 years. The ArcticUgol Company, organized in 1931, produces 120,000 tons of coal a year.

<https://tass.com/society/1549743>

### **Rosatom embarks on bid to build Saudi Arabia's first nuclear station**

*TASS, December 13, 2022*

Rosatom has submitted documents to take part in a tender for constructing Saudi Arabia's first nuclear power plant (NPP), Russian Deputy Prime Minister Alexander Novak revealed in an article for the Energy Policy magazine. "The documents have been handed in for the tender on the NPP's construction in Saudi Arabia," he affirmed.

Earlier reports said Rosatom intended to file the corresponding documents. Novak hoped then that cooperation between Russia and Saudi Arabia in the sector would intensify

not only in the construction of the nuclear power plant itself, but in the use of nuclear technologies for peaceful purposes as well.

<https://tass.com/economy/1549843>

### **Russia's global market share of low-power nuclear plants to hit 20% by 2030, says Novak**

*TASS, December 13, 2022*

Moscow plans to boost the share of nuclear energy in Russia's total energy balance to 25% by 2040, while its share of low-power nuclear plants will reach 20% by 2030, Deputy Prime Minister Alexander Novak revealed in an article for the Energy Policy magazine. "As of today, the share of nuclear generation in Russia stands at around 20%, whereas in the European part [of the country] it is almost 40%, this being the largest source of clean energy nationwide. Russia intends to boost the share of nuclear energy in the country's total energy balance to 25% by 2040," he said.

<https://tass.com/economy/1549769>

### **Kremlin shoots down Macron's 'false' claim of heavy weapons at Zaporozhye station**

*TASS, December 13, 2022*

There are no and have never been any heavy weapons at the Zaporozhye nuclear power plant, and inspectors of the International Atomic Energy Agency (IAEA) on a mission there can confirm that, Kremlin Spokesman Dmitry Peskov reiterated on Tuesday, echoing the words of Russian President Vladimir Putin. Commenting on a remark by French President Emmanuel Macron, who announced there was an agreement to remove heavy weapons from the nuclear facility, Peskov said: "I'd like to remind you of President Putin's words that there have never been and are no heavy weapons at the station itself." "And those IAEA employees who are there day and night can clearly confirm that," he added.



The Kremlin spokesman also lauded cooperation with the IAEA and pledged efforts to continue it.

<https://tass.com/politics/1549945>

### **Russia to further boost export potential of nuclear sector in future, says Novak**

*TASS, December 13, 2022*

Nuclear energy has regained the attention of a number of countries, particularly due to the influence of the energy crisis, as the sector is firmly returning its key positions in the energy sector and sweepingly expanding its prospects in the global energy balance, Russian Deputy Prime Minister Alexander Novak wrote in an article for the Energy Policy magazine, adding that the country could take advantage of the situation and boost the export potential of its nuclear industry. Russia is already one of the global leaders in the nuclear sector, boasting enormous technological and scientific potential in this area, he said. "The increasing trend of the expanding use of peaceful nuclear energy may trigger further improvement of the country's sector and an expansion of its export potential," the Deputy PM added.

<https://tass.com/economy/1550079>

### **IAEA to ensure continuous presence of experts at all of Ukraine's NPPs**

*TASS, December 14, 2022*

The International Atomic Energy Agency (IAEA) will ensure the continuous presence of its nuclear security experts at Ukraine's nuclear power plants, the agency said in a press statement after its Director General Rafael Grossi's talks with Ukrainian Prime Minister Denis Shmygal. "Director General Rafael Mariano Grossi and Ukraine's Prime Minister Denis Shmygal have agreed that the International Atomic Energy Agency (IAEA) will establish a continuous presence of nuclear safety and security experts at all of the country's nuclear power plants as part of stepped-up efforts to help prevent a nuclear accident during the current armed conflict," it said. Grossi and Shmygal held

talks at an international conference of financial aid to Ukraine in Paris.

<https://tass.com/world/1550159>

### **IAEA chief, Ukrainian PM make progress on topic of security zone around ZNPP – IAEA**

*TASS, December 14, 2022*

Director General of the International Atomic Energy Agency (IAEA) Rafael Grossi and Ukrainian Prime Minister Denis Shmygal "made progress" on the issue of establishing a security zone around the Zaporozhye Nuclear Power Plant, the IAEA said in a press statement on Tuesday.

"During a two-hour meeting in Paris that ended early on Tuesday morning, Director General Grossi said he and Prime Minister Shmygal also made progress in ongoing discussions about setting up a nuclear safety and security protection zone around the Zaporozhye Nuclear Power Plant (ZNPP), where the IAEA deployed a permanent expert mission more than three months ago," it said.

<https://tass.com/economy/1550171>

### **Zaporozhye NPP security zone is within IAEA, Russia and Ukraine's competence – diplomat**

*TASS, December 14, 2022*

The parameters of the security zone around the Zaporozhye nuclear power plant (NPP) remain an exclusive competence of the International Atomic Energy Agency (IAEA), Russia and Ukraine, a high-ranking Russian diplomat said in response to remarks about an agreement to withdraw heavy weaponry from the NPP. "It is not worthy of a French leader to release untrue assertions into the global media space. Moreover, the process of determining parameters of the 'protective zone' around the ZNPP, actively promoted by IAEA Director General Rafael Grossi, is within the exclusive competence of the IAEA, Russia and Ukraine," Russia's Permanent

Representative to the Vienna-based international organizations Mikhail Ulyanov said on Tuesday, commenting on French President Emmanuel Macron's latest remarks.

<https://tass.com/politics/1550189>

### **US accuses five Russians of unlawfully procuring electronic components for Russia**

*TASS, December 14, 2022*

The United States has filed charges against seven people, five of them citizens of Russia, of purchasing electronic components and equipment for Russia's defense industry, bypassing US sanctions, the US Department of Justice has said. "According to the indictment, the defendants unlawfully purchased and exported highly sensitive and heavily regulated electronic components, some of which can be used in the development of nuclear and hypersonic weapons, quantum computing and other military applications," the department said. Among the defendants are five citizens of Russia (Yevgeniy Grinin, Aleksey Ippolitov, Boris Livshits, Svetlana Skvortsova and Vadim Konoshchenok), and two US residents - Alexey Brayman and Vadim Yermolenko. They are suspected of having ties with Moscow-based companies Serniya Engineering and Sertal, allegedly controlled by Russian special services. The US also suspects Konoshchenok of being an agent of Russia's Federal Security Service (FSB).

<https://tass.com/emergencies/1550197>

### **Russia and IAEA can only discuss safe operation of Zaporozhye NPP – Rosenergoatom**

*TASS, December 14, 2022*

Russia and the International Atomic Energy Agency (IAEA) can only discuss the safe operation of the Zaporozhye nuclear power plant as protection issues should be addressed to Ukraine, Renat Karchaa, an adviser to the head of the Rosenergoatom concern, said on Wednesday during a Soloviev Live broadcast. "We can talk about guarantees related to nuclear safety, this is

normal, but these guarantees are given in the context of the operation of the Zaporozhye nuclear power plant. And the IAEA, in fact, is a nuclear safety organization. Such consultations, meetings, negotiations are quite normal. But everything that is beyond the territory of the Russian Federation and our competence, <...> at the end of the day, talks on this subject should be conducted with the Ukrainian regime," he said.

<https://tass.com/politics/1550249>

### **Safety zone around Zaporozhye plant realistic, demilitarization unacceptable – politician**

*TASS, December 14, 2022*

Moscow deems the demilitarization of the Zaporozhye nuclear power plant (ZNPP) to be inadmissible because this would allow Ukraine's militants to take over the nuclear facility, so the establishment of a security zone is warranted, Vladimir Rogov, chairman of the We Are Together with Russia movement, said commenting on remarks by Director General of the International Atomic Energy Agency (IAEA) Rafael Grossi. On December 10, in an interview with Al Jazeera, Grossi said that, in his opinion, the nuclear station faces "enormous dangers". He said that he was negotiating for the establishment of a protective safety and security zone around the plant and was in talks "with Ukraine and with Russia which is effectively in control of the plant." The IAEA boss explained that this was a comprehensive concept unrelated to the talks on a ceasefire or on a demilitarized zone.

<https://tass.com/politics/1550441>

### **Ukrainian mole seeking to pass data on ZNPP discovered at power plant, says official**

*TASS, December 14, 2022*

An agent of the Ukrainian armed forces has been exposed, planted at the Zaporozhye Nuclear Power Plant as a repair crew worker to pass important data

on the NPP, Renat Karchaa, adviser to the chief executive of Russia's Rosenergoatom nuclear power plant operator, said on Wednesday. "They [the Ukrainian armed forces] are trying to plant people from outside: a contracting organization was engaged for repair and construction work. And so, a finger man or an accomplice to saboteurs, I don't know how to call him, was identified," he told the Solovyov Live TV channel. The main task of the Ukrainian agent was to covertly film the station's security systems.

<https://tass.com/politics/1550469>

### **Rosatom launches series production of Li-ion batteries**

*TASS, December 14, 2022*

A plant for series production of Li-ion batteries for electric vehicles and stationary energy storage systems, organized by Re nera company on the site of the Moscow polymetal plant [both belong to TVEL, a Rosatom affiliate - TASS] has started operations in Moscow on Wednesday. Capacity of a new production facility is about 150 MWh, which is equivalent to almost 2,000 traction batteries for electric vehicles. "We are moving step by step to creation of an entirely new sector in Russia - the large-scale vertically integrated production of energy storage units. This is of key significance for strengthening the national technology sovereignty in the electric transport sphere. In our turn, we see prospects for even wider participation of Rosatom in the production chain of electric cars. Nuclear sector plants are capable to produce 60% of all electric car components already now," President of Tvel Natalia Nikipelova said at the plant opening ceremony.

<https://tass.com/economy/1550485>

### **Work to establish safety zone around ZNPP moves ahead – official**

*TASS, December 14, 2022*

Work to establish a safety zone around the Zaporozhye NPP is steadily moving ahead,

Mikhail Ulyanov, Russia's permanent representative to international organizations in Vienna, said on Wednesday. "As a matter of fact, there are no agreements yet [to establish a safety zone around ZNPP], although the work continues. It's going slowly, unfortunately, but is still moving ahead," he said on Rossiya-24 television. Commenting on French President Emmanuel Macron's statement that the International Atomic Energy Agency achieved a withdrawal of light and heavy weapons from the ZNPP, Ulyanov said none of it was true. "No heavy weaponry has ever been deployed there, while a limited number of light weapons is absolutely necessary, and the presence of armored personnel carriers has nothing to do with security, nuclear security," the diplomat said.

<https://tass.com/world/1550591>

### **UK chief of defense staff sees more threat in Russia, than in China**

*TASS, December 15, 2022*

Admiral Sir Tony Radakin, who heads the United Kingdom's Armed Forces, said on Wednesday that China was not a threat in the same vein as Russia, Iran or North Korea. "Head further East and we have <...> North Korea, seeking to smuggle artillery shells to Russia," he said. "This should not come as a surprise. This is nuclear North Korea. Pouring bile and anger on its neighbor and mixing rhetoric with over 60 ballistic missile launches this year. 23 of these were on a single day. In a 'normal year' that would astonish the world," he added. Addressing an audience at the Royal United Services Institute (RUSI), Radakin said, "And then there is China. Not a threat in the same vein as Russia or Iran or North Korea. But a tacit supporter of Russia, whether at the United Nations or taking advantage of cheap energy."

<https://tass.com/world/1550729>

## Russian nuclear-powered sub undergoing upgrade at Far Eastern Shipyard, says source

TASS, December 15, 2022

The Pacific Fleet's Project 949A (Antey-class) nuclear-powered submarine Tomsk is undergoing repairs and upgrading at a Far Eastern Shipyard, a source in the domestic shipbuilding industry told TASS on Thursday. "The submarine Tomsk is now undergoing repairs and upgrading at one of the enterprises of the Far Eastern Shipbuilding and Repair Center," the source said. The source was tight-lipped on the scope of the ongoing work, but according to reports, two submarines of this class are being repaired and upgraded to the Project 949AM level at the Far Eastern Zvezda Shipyard. In particular, the Far Eastern shipbuilders are repairing and upgrading the Project 949A submarine Chelyabinsk to the Project 949AM level.

<https://tass.com/defense/1550787>

## Tomsk Polytechnic University to develop method of decontaminating radioactive sites

TASS, December 15, 2022

A new technology for decontaminating building structures of nuclear power facilities that are being decommissioned is being developed at Tomsk Polytechnic University (TPU). Scientists suggest using electric pulses for this purpose, the university told TASS on Thursday. While operating nuclear power facilities, for example, a nuclear reactor or radiochemical production, there is a radiation contamination of building structures occurs, contaminating the site's safety barriers as well as biological protection. This is especially typical for the so-called "nuclear legacy" - nuclear- and radiation-hazardous facilities created during the formative stage of the nuclear industry.

<https://tass.com/science/1551055>

## Dispute Review Board considers Hanhikivi 1 NPP contract termination wrongful – Rosatom

TASS, December 15, 2022

The Dispute Review Board recognized termination of the contract for the Hanhikivi 1 nuclear power plant (NPP) construction as wrongful, the Russian state nuclear corporation Rosatom said on Thursday. "The Dispute Review Board (DRB) issued a verdict, whereby the unilateral termination of the contract for the Hanhikivi 1 NPP construction by Finnish Fennovoima was recognized as wrongful," Rosatom said. DRB also recognized as unlawful the refusal of Fennovoima to accept work performed by RAOS Project [a Rosatom's company - TASS] as the supplier under the contract. The Board established that the unlawful termination of contract is the material breach of contract terms, conferring the right to RAOS Project to demand collection of inflicted damages from Fennovoima. Further proceedings will determine the amount of damages.

<https://tass.com/economy/1551093>

### C. China

## Chinese firm prepares to send world's first methane-fuelled rocket into space

Ling Xin

South China Morning Post, December 02, 2022

China is aiming to send the world's first methane-fuelled rocket into space, with a launch planned in the next two weeks, according to a source with knowledge of the matter. The rocket - known as the Zhuque-2 and developed by Beijing-based start-up Landspace - is expected to be launched between December 4 and 15 from the Gobi Desert in Inner Mongolia, the source told the South China Morning Post. If successful it will be the first methane-burning rocket sent into orbit. Landspace is in a race with US rivals SpaceX and Relativity Space, which are



also hoping to launch methane rockets soon. Methane is the primary component of natural gas. As a rocket fuel, it is more efficient, easier to produce and more environmentally friendly than traditional fuels such as refined kerosene.

<https://www.scmp.com/news/china/science/article/3201834/chinese-firm-prepares-send-worlds-first-methane-fuelled-rocket-space>

### **US debuts new B-21 nuclear stealth bomber in defence race with China**

*South China Morning Post, December 03, 2022*

America's newest nuclear stealth bomber is making its public debut after years of secret development and as part of the Pentagon's answer to rising concerns over a future conflict with China. The B-21 Raider is the first new American bomber aircraft in more than 30 years. Almost every aspect of the programme is classified. Ahead of its unveiling on Friday at an Air Force facility in Palmdale, California, only artists' renderings of the warplane have been released. Those few images reveal that the Raider resembles the black nuclear stealth bomber it will eventually replace, the B-2 Spirit. The bomber is part of the Pentagon's efforts to modernise all three legs of its nuclear triad, which includes silo-launched nuclear ballistic missiles and submarine-launched warheads, as it shifts from the counterterrorism campaigns of recent decades to meet China's rapid military modernisation.

<https://www.scmp.com/news/world/united-states-canada/article/3201915/us-debuts-new-b-21-nuclear-stealth-bomber-defence-race-china>

### **Huge nuclear arms push by China would worry neighbours, analysts warn, as US report sees 1,500 warheads by 2035**

*Kristin Huang*

*South China Morning Post, December 03, 2022*

An exponential increase in China's nuclear arsenal and military power would trigger concerns among its neighbours, even though

Beijing has valid reasons for security build-up, military analysts said. This came as the United States in its latest China Military Power Report called China "the most consequential and systemic challenge to our [US] national security and to a free and open international system". The annual Pentagon report on Chinese military might and strategy, said the country currently has about 400 nuclear warheads, and the number could reach 1,500 by 2035. According to the US defence department, an important element of China's strategy is "a determined pursuit to amass and expand its national power" to transform aspects of the international system to make it more favourable to the Chinese political system and national interests.

<https://www.scmp.com/news/china/military/article/3201856/huge-nuclear-arms-push-china-would-worry-neighbours-analysts-warn-us-report-sees-1500-warheads-2035>

### **US' latest arms sale proposal to Taiwan island may hinder China-US military exchanges; little help for secessionists to gain a military edge**

*Global Times, December 06, 2022*

The provocative arms sale to China's Taiwan region will make it more difficult to restore China-US military cooperation and exchanges, Chinese experts warned, following reports that Washington has proposed arms sale to the secessionist Taiwan authorities, less than a month after two heads of state met face-to-face in Bali, when US President Joe Biden reaffirmed that the US does not support "Taiwan independence," and has no intention to engage in conflict with China. Given the absolute military advantage of the Chinese mainland over Taiwan island, the US arms sales to Taiwan would be more about political provocation than a military support in practice, experts said. They also urged the US to be true to its words and deeds, take concrete actions to stop provocations against China's core interests on the Taiwan question and refrain from sending wrong signals to Taiwan

secessionists after their fiasco in the recent local elections.

<https://www.globaltimes.cn/page/202212/1281266.shtml>

### **China completes first seaborne hot launch with carrier rocket sending 14 satellites to orbit**

*Fan Anqi and Deng Xiaoci*

*Global Times, December 09, 2022*

China's commercial carrier rockets have welcomed a new member to the family, after the Smart Dragon-3, or Jielong-3, made its successful maiden flight from the waters of the Yellow Sea, sending 14 satellites precisely into their designated orbit. Its debut further expanded the spectrum of China's launch vehicles and marked the country's first hot seaborne launch, filling multiple technical gaps in China's domestic aerospace industry. The vehicle, developed and manufactured by the state-owned China Academy of Launch Vehicle Technology (CALT), is a four-stage solid-propellant carrier rocket with a total length of about 31 meters and a diameter of up to 2.65 meters. It weighs about 140 tons. Smart Dragon-3 is capable of sending a 1.5-ton payload to the 500-kilometer Sun-synchronous orbit, has a larger nose cone with a diameter of 3.35 meters that provides more space for payloads and diversified launch modes, and is more cost-efficient, the Global Times learned.

<https://www.globaltimes.cn/page/202212/1281509.shtml>

### **China and Saudi Arabia pledge to widen ties to 'all fields' and work together on Iran nuclear programme**

*Kawala Xie and Teddy Ng*

*South China Morning Post, December 09, 2022*

China and Saudi Arabia pledged to further expand their cooperation to areas such as technology, security and Iran in a joint declaration during President Xi Jinping's visit to the kingdom. The declaration stressed the

importance of continuing cooperation in "all fields" and deepening their relations within the framework of a comprehensive strategic partnership established in 2016. Xi and King Salman agreed to enhance the comprehensive strategic partnership to include a biannual meeting between the two heads of state, and upgrade regular high-level talks from vice-premier to premier level. The declaration included a joint statement on Iran, Riyadh's long-time rival and a strategic partner of Beijing. The two agreed to work together to guarantee the "peaceful nature" of Iran's nuclear programme and called on Iran to maintain a "non-proliferation regime" while emphasising "respect" for the principles of "good-neighbourliness".

<https://www.scmp.com/news/china/diplomacy/article/3202656/china-saudi-ties-upgraded-xi-pledges-priority-status-riyadh>

### **China's new high-altitude, high-speed demonstrator drone makes first flight**

*Liu Xuanzun*

*Global Times, December 09, 2022*

China recently carried out the maiden flight for a type of new high-altitude, high-speed demonstrator drone, which can help test and verify a number of new technologies including artificial intelligence, loyal wingman and drone swarm, the aircraft's maker announced. Independently developed by the flight test center of the state-owned Aviation Industry Corporation of China (AVIC), the Liuxing-260 successfully completed its first flight, AVIC said in a statement released on social media. During the flight, which took place in the desert in Northwest China, the Liuxing-260 high-altitude, high-speed, high-maneuver drone took off from a launcher vehicle, conducted several maneuvers including diving, rolling and circling, before descending to a preset position for a parachute recovery, AVIC said.

<https://www.globaltimes.cn/page/202212/1281488.shtml>

## Why US calls for China to act over North Korean missiles may test limits of Beijing's influence

*Jack Lau and Kawala Xie*

*South China Morning Post, December 11, 2022*

North Korea's latest missile tests have prompted the United States and South Korea to renew their efforts to get China to rein in its ally, but according to Chinese analysts, there are limits to what Beijing can do. North Korea this year launched more missiles than ever before but China has said little beyond its boilerplate calls for dialogue and a "political solution", even after North Korea launched the new Hwasong-17 intercontinental ballistic missile last month, which Japan said could reach the continental United States. It was the 63rd ballistic missile launch this year. Despite Chinese President Xi Jinping telling North Korean leader Kim Jong-un that he was willing to work together for regional peace, Pyongyang still fired more than a hundred rounds of artillery into the sea near its border last week in response to the South's military drills with the US.

<https://www.scmp.com/news/china/diplomacy/article/3202840/why-us-calls-china-act-over-north-korean-missiles-may-test-limits-beijings-influence>

## New US B-21 stealth bomber heightens strike gap with China - but missiles may help close it

*Kristin Huang*

*South China Morning Post, December 11, 2022*

America's newest stealth bomber, the B-21 Raider, will pose a challenge for China's air defence systems but the country's long-range missiles may help close the strike gap, according to analysts. America unveiled its first strategic bomber in more than three decades at an air force base in California earlier this month, after years of secret development. Seen as part of the answer to rising concerns over a possible future conflict with China, the bomber "is proof of the [defence] department's long-term

commitment to building advanced capabilities that will fortify America's ability to deter aggression, today and into the future", according to US Defence Secretary Lloyd Austin.

<https://www.scmp.com/news/china/military/article/3202714/new-us-b-21-stealth-bomber-heightens-strike-gap-china-missiles-may-help-close-it>

## China looks to hypersonic ski-jump technology for space travel

*Stephen Chen*

*South China Morning Post, December 12, 2022*

Chinese researchers say they have repurposed the traditional ski-jump method of launching a plane at sea for the hypersonic age, aiming to develop it for easier, safer space travel. Wang Yunpeng, an associate professor with the Chinese Academy of Sciences' Institute of Mechanics in Beijing, and his team used scaled-down versions of an orbital plane - similar to the space shuttle - and a hypersonic carrier to test the method at seven times the speed of sound. In a paper published in peer-reviewed journal *Acta Aeronautica et Astronautica Sinica* on December 8, the researchers said the results proved ski-jump technology - regarded as obsolete in modern aircraft carriers - could be adapted for orbital launches from near space.

<https://www.scmp.com/news/china/science/article/3202975/china-develops-hypersonic-ski-jump-technology-space-travel>

## US succeeds in hypersonic missile test launch, technology China has long mastered

*Liu Xuanzun*

*Global Times, December 13, 2022*

After a series of failures, the US Air Force announced that it has finally succeeded in the test launch of its air-launched hypersonic missile, a technology China has long mastered and even put on public display at a recent air show. The US'



scheme is to use the hypersonic missile and the recently revealed B-21 stealth bomber to penetrate China's air defense, but the Chinese People's Liberation Army (PLA) has what it takes to defend the country, experts said. A full prototype of the Air-launched Rapid Response Weapon, also known as the AGM-183A missile, was launched from a B-52 bomber off the coast of California, and all of the objectives of the test were met, CNN reported, citing a statement from the US Air Force.

<https://www.globaltimes.cn/page/202212/1281763.shtml>

### **Stronger Taiwan air force hangars seen to be no match for Chinese military's new ballistic missiles**

*Minnie Chan*

*South China Morning Post, December 15, 2022*

Taiwan's plans to build stronger hangars for its fighter jets may be in vain, as the Chinese military has developed short-range guided missiles capable of piercing any reinforced aircraft base, experts said. "[Mainland] China's ballistic missiles and multiple launch rocket system (MLRS) now use the BeiDou satellite navigation and terminal infrared image guidance systems, enabling them to hit any reinforced aircraft hangar and penetrate it precisely," said Andrei Chang, editor-in-chief of Canada-based military magazine Kanwa Asian Defence. Chang cited a promotional video for the People's Liberation Army's (PLA) export version M20, also called the DF-12 surface-to-surface short-range tactical missile, to explain his point. He said the four-tonne (8,820 pounds) Dongfeng (DF) missile could be armed with "fuel-air warheads", which use oxygen from the surrounding air to generate a high-temperature explosion to completely destroy targets.

<https://www.scmp.com/news/china/military/article/3203323/stronger-taiwan-air-force-hangars-seen-be-no-match-chinese-militarys-new-ballistic-missiles>

### **D. Pakistan**

#### **Pakistan's new ISPR chief is son of Osama-linked scientist who said djinns can make electricity**

*The Print, December 6, 2022*

The father of the head of Pakistan's powerful military public-relations organisation is a nuclear scientist sanctioned by the United Nations for providing the Taliban and al-Qaeda "with information about chemical, biological and nuclear weapons", government sources have told ThePrint.

Sultan Bashiruddin Mahmood, father to Major General Ahmed Sharif, is also known for his eccentric views on science, among other things, proposing djinns could be used to generate electricity. Sharif was appointed to lead the Inter-Services Public Relations last month by Pakistan's new army chief, General Asim Munir. Sharif replaced Lieutenant General Babar Iftikhar, who was accused by former Pakistani Prime Minister Imran Khan of interfering in politics.

<https://theprint.in/world/pakistans-new-ispr-chief-is-son-of-osama-linked-scientist-who-said-djinns-can-make-electricity/1249730/>

#### **US blacklists Pakistan firms over nuclear activities**

*The Express Tribune, December 7, 2022*

The Biden administration on Wednesday added 24 companies and other entities to an export control list for supporting Russia's military or defence industrial base, Pakistan's nuclear activities or for supplying an Iranian electronics company.

The entities, based in Latvia, Pakistan, Russia, Singapore and Switzerland, were added over US national security and foreign policy concerns, the Commerce Department said. The companies include Fiber Optic Solutions in Latvia, which produces fiber optic gyroscopes and other equipment and Russia's AO Kraftway



Corporation PSC, which calls itself one of the biggest Russian IT companies. The company says it builds and sells a wide range of IT solutions, including hardware manufacturing.

<https://tribune.com.pk/story/2389921/us-black-lists-pakistan-firms-over-nuclear-activities>

## Nuclear deterrence in South Asia

*The Express Tribune, December 9, 2022*

Leaving Russia's current posturing aside, the nuclear standoff in South Asia has widely been considered the most dangerous flashpoint for the past two decades. The dynamics of the nuclear arms race, as well as nuclear deterrence, within South Asia are unique and bear little semblance to the Cold War or even current nuclear posturing between the West and its evident adversaries including Russia and China. Pakistan's former National Security Advisor Moeed Yusuf has written about how the nuclear standoff in South Asia could be best understood by keeping in view the role of major powers, especially America and China, to de-escalate tensions. However, in recent years, the growing acrimony between China and the US has made this informal mediation role less reliable.

<https://tribune.com.pk/story/2390118/nuclear-deterrence-in-south-asia>

## US 'Punctures' Pakistan's Attempts To Black Market Its Nuclear Weapons Tech; Calls It One Of World's 'Most Dangerous' Nations: OPED

*Eurasian Times, December 12, 2022*

Then, propelled by the 1965 and 1971 India-Pakistan Wars and, more urgently, by India's first nuclear weapon test in 1974, senior Pakistani officials tapped into the country's pool of young nuclear scientists and engineers and molded them into a motivated cadre committed to building the 'ultimate weapon.' The tenacity of this group and the central place of its mission in Pakistan's national identity allowed the program to outlast the perennial political crises of the next 20 years, culminating in the test of a

nuclear device in 1998, wrote the Amazon while introducing the 552-page book *Eating Grass: The Making of the Pakistani Bomb* authored by Feroz Khan and published in 2013.

<https://eurasianimes.com/us-punctures-pakistans-attempts-to-black-market-its-nukes/>

## Pakistan seeks talks to limit arms build-up

*Dawn, December 15, 2022*

Pakistan urged the UN Security Council on Wednesday to support negotiations to limit and control the build-up of nuclear and conventional weapons. In his address to the Security Council in New York, Foreign Minister Bilawal Bhutto-Zardari also supported the call for expanding the council but opposed adding new permanent members. "This council should support negotiations in the relevant bodies to limit and control the nuclear and conventional arms build-up at the global and regional level, including the development and deployment of new weapons and military technologies," he said. The nuclear weapons states, he said, must provide binding assurances to non-nuclear states against the use or threat of use of nuclear weapons.

<https://www.dawn.com/news/1726405>

## Pakistan Is a Responsible Nuclear Power

*Muhammad Muhammadi*

*Asso. Director, CISS, Islamabad*

*National Interest, December 7, 2022*

In recent weeks, certain politically motivated lobbies have been propagating unwarranted perceptions and concerns about Pakistan's nuclear security regime. These need to be addressed directly, as Pakistan is firmly devoted to nuclear safety and security. Pakistan has long vigorously engaged with the international community to make it aware of its nuclear safety and security mechanisms. The country's nuclear regime is grounded in a clear national legislative, regulatory, and

administrative framework, which includes a robust nuclear command and control system and National Command Authority (NCA) established in 2001 to strengthen nuclear security, comprehensive export controls, and international cooperation.

<https://nationalinterest.org/feature/pakistan-responsible-nuclear-power-205986>

## *E. Europe*

### **Mint Explainer: The UK-Japan-Italy fighter jet will shake the defence market**

*Mint December 14, 2022*

Japan, the United Kingdom and Italy have announced a major effort to design and build a sixth-generation fighter aircraft. This development, which marks the first trilateral defence project of this magnitude between the three countries, reflects a major shift in the global defence market.

<https://www.livemint.com/opinion/online-views/mint-explainer-the-uk-japan-italy-fighter-jet-will-shake-the-defence-market-11670830496730.html>

## *F. France*

### **France dims the lights as nuclear energy crisis bites**

*CGTN, December 3, 2022*

The French nuclear industry is in crisis, with a quarter of its 56 civil nuclear reactors undergoing maintenance and the fear that in turn could lead to power outages over the winter. While EDF, the largely state-owned company which runs the plants has publicly stated it can resolve the problems, the French prime minister Elisabeth Borne is preparing a strategy to deal with possible blackouts. Nuclear power is France's fuel lifeline, delivering up to 70 percent of its daily electricity needs and turning it into Europe's biggest exporter of electricity.

But since the discovery last year of major corrosion issues in some of its aging reactors, output is currently down by a third.

<https://newseu.cgtn.com/news/2022-12-03/France-dims-the-lights-as-nuclear-energy-crisis-bites-1fsYAcas6sw/index.html>

### **EDF to start Penly 2 fix in Jan as more reactors ramp up**

*Reuters, December 9, 2022*

France's EDF (EDF.PA) aims to start corrosion repairs at its Penly 2 nuclear reactor in mid January, pending regulatory approval of its plans next week, as the power utility battles to recover from an unprecedented number of outages.

<https://www.reuters.com/business/energy/french-electric-utility-edf-extends-outage-cattenom-4-nuclear-reactor-2022-12-09/>

### **France copes with high power demand on nuclear supply ramp-up**

*Reuters, December 12, 2022*

France on Monday avoided a strain on its power grids in the face of rising demand as Paris recorded sub-zero temperature, thanks to a ramp-up in supply in nuclear as well as hydro power and strong imports from neighbouring countries. Demand rose above 80 gigawatts (GW) during peak morning hours for the first time this winter, according to a spokesperson for RTE, the country's transmission system operator. France's nuclear availability was able to supply above 40 GW as its plants returned to levels last seen in early March over the weekend. That combined with more than 15 GW of hydropower accounted for over 75% of the total supply.

<https://www.reuters.com/business/energy/france-cope-with-high-power-demand-nuclear-supply-ramp-up-2022-12-12/>

### **France's Iter project on nuclear fusion may hold key to sustainability**

*The Sunday Times, December 14, 2022*

In the foothills of the French Alps, stands a parallel universe. One where Russians, Chinese, Americans and Europeans are spending day after day working together on one shared goal: to find a new way of powering the Earth. The International Thermonuclear Experimental Reactor

(Iter) project, a collaboration between 35 countries, is one of the world's most important science experiments. Physicists are attempting to prove that nuclear fusion – the process that powers the sun and stars – can create a source of clean, abundant power that could be a long-term solution to energy security and climate change.

<https://www.thetimes.co.uk/article/frances-iter-project-on-nuclear-fusion-may-hold-key-to-sustainability-9cs9r05pz>

### France's Restart of Nuclear Reactors Eases Blackout Fears

*Wall Street Journal, December 15, 2022*

French officials have been racing to restart the reactors after a rash of outages pushed the country's nuclear generation to the lowest level in decades, compounding the energy crisis facing Europe after Russia slashed natural-gas deliveries in the wake of its invasion of Ukraine. The government of President Emmanuel Macron warned last month that it might have to impose targeted power cuts during periods of peak demand this winter to avoid widespread blackouts. The discovery of corrosion on pipes near some of the reactor cores led authorities to take 30 of France's 56 reactors offline earlier this year. Now 41 of them are online. Since last week, France's nuclear generation has exceeded 41,000 megawatts with the restart of the five reactors, just above the 40,000-megawatt threshold below which France's power-grid manager says the country would be at risk of power cuts.

<https://www.wsj.com/articles/frances-restart-of-nuclear-reactors-eases-blackout-fears-11671102996>

#### G. Germany

### Why Germany Won't Go Nuclear

*The National Interest, December 5, 2022*

Stephen Szabo's provocative article in *The National Interest* presents what we as former intelligence analysts would characterize as a "what if" or "low probability/high impact" scenario. "What if" exercises are useful to challenge the conventional

wisdom, if only to demonstrate that the underlying conditions for current assessments remain solid. In this case, we believe that the counterargument for Germany remaining a non-nuclear ally within NATO is much stronger than the case for Germany exiting the Nuclear Non-proliferation Treaty (NPT) or even seriously considering developing its own nuclear capability.

<https://nationalinterest.org/feature/why-germany-won't-go-nuclear-205966>

### Risk of Russia using nuclear weapons has lessened, says Germany's Scholz

*BBC, December 8, 2022*

The risk of nuclear weapons being used in the Ukraine conflict has lessened "for the time being", says German Chancellor Olaf Scholz. "Russia has stopped threatening to use nuclear weapons in response to the international community marking a red line," Mr Scholz said. On Wednesday, Russia's Vladimir Putin suggested that Moscow would only use nuclear weapons in retaliation. But the US denounced the comments as "loose talk". Russia's capacity to use nuclear weapons has come under increased scrutiny since it invaded Ukraine in February. In an address to the nation in September, Mr Putin said his country had "various weapons of destruction" and would "use all the means available to us", adding: "I'm not bluffing."

<https://www.bbc.com/news/world-europe-63900195>

### Germany ramps up power generation from coal amid energy crisis: Report

*Business Standard, December 8, 2022*

More than a third of electricity produced and fed into the grid in Germany in the third quarter (Q3) of 2022 was generated by coal-fired power plants, according to a report based on provisional results and published by the Federal Statistical Office (Destatis).

Amid the energy crisis, coal-generated electricity in Europe's largest economy increased by 13.3 per cent year-on-year, according to Destatis on Wednesday. Germany still aims to phase out coal as a power source by 2030. In order to ensure security of energy supply during winter, the German government has decided to temporarily return to coal-fired power plants. The first plant was already reactivated in early August, Xinhua news agency reported.

[https://www.business-standard.com/article/international/germany-ramps-up-power-generation-from-coal-amid-energy-crisis-report-122120800068\\_1.html](https://www.business-standard.com/article/international/germany-ramps-up-power-generation-from-coal-amid-energy-crisis-report-122120800068_1.html)

### **Germany at a crossroads: what a nuclear power station tells us about its energy dilemma**

*The Guardian, December 9, 2022*

On a slope above the river Neckar in southwest Germany, about 25 miles (40km) from Stuttgart, stands the village of Neckarwestheim, its red terracotta roofs surrounded by vineyards and farmers' fields, with streets leading to a central market square. So far, so typical for a rural community in the German state of Baden-Württemberg. However, this settlement of 4,200 residents has one defining characteristic: it is located right next to one of Germany's three remaining nuclear power stations. The challenges facing this picturesque village illustrate how the energy crisis is affecting Europe's largest economy, as Russia's weaponisation of the gas supply has complicated Germany's planned transition away from nuclear.

<https://www.theguardian.com/world/2022/dec/09/neckarwestheim-delay-phasing-out-nuclear-power-dividing-german-village>

### **UK and US nuclear missile submarines send message to Russia**

*UK Defence Journal, December 13, 2022*

U.S. Navy Ohio-class ballistic missile submarine USS Tennessee and Royal Navy Vanguard-class nuclear submarine, both armed with Trident nuclear missiles,

featured in a rare photoshoot in the North Atlantic. A U.S. Navy image shows the submarines plus an American E-6B Mercury assigned to the 'Shadows' of Fleet Air Reconnaissance Squadron 4 and an MH60R Sea Hawk helicopter attached to the 'Proud Warriors' of Helicopter Maritime Strike Squadron 72. The event was, say the U.S. Navy, designed to conduct bi-lateral at sea training "to validate tactics, techniques, and procedures which strengthen the relationship between uniquely close Allies in support of deterrence and collective security".

<https://ukdefencejournal.org.uk/uk-and-us-nuclear-missile-submarines-send-message-to-russia/>

### **Further runtime extension for German nuclear plants no longer possible - EnBW**

*Clean Energy Wire, December 15, 2022*

A second runtime extension for Germany's remaining nuclear power plants beyond April 2023 is technically unfeasible and thus no option for stabilising the country's power grid in the winter of 2023-2024, EnBW board member Georg Stamatelopoulos told *Süddeutsche Zeitung* in an interview. "It's too late for another runtime extension," he said, arguing that operator companies that had initially planned to shut down their reactors at the end of December this year lack nuclear fuel rods, staff and logistical preparations to uphold operations beyond the extension granted until spring. "This industry simply no longer exists in Germany, as we've built it back for over ten years." The board member of the energy company operating the Neckarwestheim nuclear plant in southwestern Germany warned that a nuclear reactor "is not a toy train that you turn on and off and it always works," adding that he was "astounded" by the lack of technical understanding in public debates.

<https://www.cleanenergywire.org/news/further-runtime-extension-german-nuclear-plants-no-longer-possible-enbw>



## Germany clinches \$8 billion purchase of 35 F-35 aircraft from the US

*Defense News, December 15, 2022*

German government leaders on Wednesday announced a deal to buy 35 F-35 fighter jets from the United States, a package pegged at \$8.4 billion by the Pentagon in its offer from the summer. Signature of the letter of acceptance caps Berlin's years-long quest to replace the portion of its aging Tornado fleet tasked with carrying out NATO's doctrine of nuclear weapons sharing. German officials had decided on the Lockheed Martin-made jet in the spring, setting in motion the purchasing process for the aircraft, weapons and spares.

<https://www.defensenews.com/global/europe/2022/12/14/germany-clinches-8-billion-purchase-of-35-f-35-aircraft-from-the-us/>

### H. IAEA

## Update 134 – IAEA Director General Statement on Situation in Ukraine

*IAEA, December 2, 2022*

The International Atomic Energy Agency (IAEA) carried out a nuclear safety and security mission to the South Ukraine Nuclear Power Plant (SUNPP) this week as it steps up its efforts to help prevent a nuclear accident during the current armed conflict in the country, Director General Rafael Mariano Grossi said today. Requested by Ukraine, it was part of a suite of IAEA missions to provide on-site assistance and support in nuclear safety and security to the country's nuclear power plants (NPPs), including the SUNPP as well as the Rivne and Khmelnytsky NPPs, and the Chornobyl site to which the IAEA sent a mission last week.

<https://www.iaea.org/newscenter/pressreleases/update-134-iaea-director-general-statement-on-situation-in-ukraine>

## Update 135 – IAEA Director General Statement on Situation in Ukraine

*IAEA, December 9, 2022*

The International Atomic Energy Agency (IAEA) carried out nuclear safety and security missions at Ukraine's Khmelnytsky and Rivne Nuclear Power Plants (NPPs) this week as part of its ongoing and intensifying activities to help avert the danger of a nuclear accident during the current armed conflict in the country, Director General Rafael Mariano Grossi said today. Requested by Ukraine, the two expert missions took place a week after the IAEA went to the South Ukraine Nuclear Power Plant to also provide on-site assistance and support in nuclear safety and security, and two weeks after a similar mission to the Chornobyl site. The IAEA has a permanent presence at the country's largest NPP, Zaporizhzhya, since early September.

<https://www.iaea.org/newscenter/pressreleases/update-135-iaea-director-general-statement-on-situation-in-ukraine>

## Update 136 – IAEA Director General Statement on Situation in Ukraine

*IAEA, December 13, 2022*

Director General Rafael Mariano Grossi and Ukraine's Prime Minister Denys Shmyhal have agreed that the International Atomic Energy Agency (IAEA) will establish a continuous presence of nuclear safety and security experts at all of the country's nuclear power plants as part of stepped-up efforts to help prevent a nuclear accident during the current armed conflict.

During a two-hour meeting in Paris that ended early on Tuesday morning, Director General Grossi said he and Prime Minister Shmyhal also made progress in ongoing discussions about setting up a nuclear

safety and security protection zone around the Zaporizhzhya Nuclear Power Plant (ZNPP), where the IAEA deployed a permanent expert mission more than three months ago. Ukraine's Energy Minister, Herman Haluschenko, also participated in the meeting.

<https://www.iaea.org/newscenter/pressreleases/update-136-iaea-director-general-statement-on-situation-in-ukraine>

## I. Ukraine

### Ukraine war: Kyiv displays dummy nuclear-capable missile fired by Russia

*BBC, December 1, 2022*

It displayed what it said were fragments of Soviet-made X-55 cruise missiles - designed for nuclear use - found in Ukraine's two western regions. The rockets are being launched to "exhaust the air-defence system of our country," a Ukrainian official said. He said tests on the fragments did not show abnormal levels of radioactivity. Ukrainian military experts say Russia may have significantly depleted its vast missile arsenal after carrying out wave after wave of massive strikes on Ukraine's critical infrastructure in recent weeks. Moscow is now resorting to using blunt projectiles that still cause devastation, they say. A UK intelligence report in November came to similar conclusions. Russia - which launched a full-scale invasion of Ukraine on 24 February - has made no public comments on the issue.

<https://www.bbc.com/news/world-europe-63826082>

### Russia hits Ukraine with missiles, warns of "clash between nuclear powers" as drones target Russian bases

*CBS News, December 7, 2022*

Russia retaliated in brutal fashion this week after drone strikes targeted three airfields - including two deep inside its territory. The last strike came Tuesday morning, against a Russian airport just across the border

from Ukraine, but it was preceded by two others on Monday that saw drones penetrate hundreds of miles into Russia. The first strikes - which Ukraine has not claimed responsibility for, vaguely calling it karma for Russia's invasion and air assault that began in February - drew a new barrage of missiles from Russian forces, taking aim at dozens of targets in Ukraine. Russia has been trying to demoralize Ukrainians and their army by knocking out power and water infrastructure. Monday's frenzied attack on cities and towns across the country saw more than 70 missiles fired, according to Ukrainian officials. Kyiv's governor said about 40% of the capital region was left in the dark, but the impact from Moscow's assault could have been far worse were it not for Ukraine's missile defenses.

<https://www.cbsnews.com/news/ukraine-news-russia-war-drones-russian-air-bases-lavrov-nuclear-powers-warning/>

### Ukraine still fears another Chernobyl-size disaster at Europe's largest nuclear plant

*NPR, December 11, 2022*

Sophia Arkadiyivna remembers when the Soviet Union built the Chernobyl Nuclear Power Plant in 1977, just 20 miles from the village where she served as mayor. After years of atomic energy powering big Russian cities like Moscow, Leningrad and Voronezh, the USSR was finally ready to expand the technology to other Soviet republics like Ukraine. Soviet propaganda promised easier jobs and cleaner air. "We didn't have a reason to distrust the government. They showed us how good things could be," she says. Or so she thought at the time. It didn't take long for Arkadiyivna to turn skeptical. She heard from friends and relatives who worked at the Chernobyl plant that authorities would cut corners and pump up power production for the USSR to export to other Eastern bloc countries.

<https://www.npr.org/2022/12/11/1138382531/ukraine-fears-nuclear-disaster-zaporizhzhia-chernobyl-memories>

## IAEA to base staff at all Ukraine's nuclear power plants

*World Nuclear News, December 14, 2022*

The International Atomic Energy Agency (IAEA) is going to establish a permanent presence at all operating nuclear power plants in Ukraine, as well as at Chernobyl, with the move seen as particularly important "at a time when Ukraine's energy infrastructure is facing unprecedented challenges as a result of the war and in the middle of winter". It means the Khmelnytsky, Rivne and South Ukraine plants will have permanent IAEA staffing, which is already the case at the Zaporizhzhia plant which is under Russian military control. The announcement came after talks in Paris between IAEA Director General Rafael Mariano Grossi and Ukraine's Prime Minister Denys Shmyhal, with Grossi saying: "Our mission at the Zaporizhzhia nuclear power plant has shown the vital importance of the IAEA being there to monitor the situation and give technical advice. Thanks to this presence, the IAEA is providing the world with impartial, technical and factual information about developments on the ground."

<https://www.world-nuclear-news.org/Articles/IAEA-basing-staff-at-all-Ukraine's-nuclear-power-p>

## U.S. to send \$275 million in military aid to Ukraine; NATO chief worries war could become wider conflict

*CNBC, December 12, 2022*

Russian President Vladimir Putin said that Moscow could adopt what he described as a U.S. concept of using preemptive military strikes, noting it has the weapons to do the job, in a blunt statement amid rising Russia-NATO tensions over Ukraine. "We are just thinking about it. They weren't shy to openly talk about it during the past years," Putin said, referring to the U.S. policy, as he attended a summit in Kyrgyzstan of a Moscow-dominated economic alliance of ex-Soviet nations. For years, the Kremlin has expressed concern about U.S. efforts to develop the so-called Conventional Prompt Global Strike capability that envisions hitting

an adversary's strategic targets with precision-guided conventional weapons anywhere in the world within one hour.

<https://www.cnn.com/2022/12/09/russia-ukraine-live-updates.html>

## J. United Kingdom

### A Promising Sign for Nuclear Power in the United Kingdom

*The Heritage Foundation December 1, 2022*

The Times in the U.K. just reported that Rolls-Royce is in early talks with the global industrial firm Ineos to provide industrial power for a Scottish oil refinery. These sorts of uses are exactly what makes nuclear energy so attractive. That's because refineries need constant power and unlike most renewable sources, nuclear produces that power 24 hours a day and seven days a week. Even the U.S. Department of Energy acknowledges that nuclear power is by far the most reliable energy source we have. Last year Rolls-Royce announced that it had established a new Small Modular Reactor business and that it raised nearly \$235 million in investments toward developing its new 440-megawatt reactor designs. The consortium led by Rolls-Royce secured a further \$250 million from the publicly-funded United Kingdom Research and Innovation.

<https://www.heritage.org/nuclear-energy/commentary/promising-sign-nuclear-power-the-united-kingdom>

### UK and US announce new energy partnership

*Gov.uk, December 7, 2022*

The UK and US will work together to increase energy security and drive down prices, as part of an initiative announced by the Prime Minister and US President Biden today (7th December). Under the new 'UK-US Energy Security and Affordability Partnership', the UK and US will drive work to reduce global dependence on Russian energy exports, stabilise energy markets and step up collaboration on energy efficiency, nuclear

and renewables. The initiative will be steered by a new UK-US Joint Action Group, led by senior officials from the UK Government and the White House. This new partnership follows the Prime Minister and President Biden's meeting at the G20 Summit in Indonesia, where they agreed to take forward work to address our short-term energy needs and spearhead efforts to speed up our energy transition.

<https://www.gov.uk/government/news/uk-and-us-announce-new-energy-partnership>

### **Defence Secretary joins AUKUS partners in landmark first meeting**

*Gov.uk, December 7, 2022*

Defence Secretary Ben Wallace met with US Secretary of Defense Lloyd Austin and Deputy Prime Minister and Defence Minister of Australia Richard Marles today for the first meeting of the AUKUS defence ministers. AUKUS is a trilateral security partnership announced in September 2021, comprising Australia, the United Kingdom, and the United States. Meeting at the Pentagon in Washington D.C., all three nations reiterated their shared commitment to the partnership and reviewed progress on identifying a conventionally armed, nuclear powered submarine for the Royal Australian Navy.

They also agreed plans for joint military exercises in 2023 and 2024 which will further enhance partners' abilities to operate together.

<https://www.gov.uk/government/news/defence-secretary-joins-aukus-partners-in-landmark-first-meeting>

### **AUKUS members say plans on track for US and UK to help Australia acquire nuclear-powered submarine fleet**

*ABC News, December 8, 2022*

Deputy Prime Minister Richard Marles says Australia will be able to acquire nuclear-powered submarines by the deadline set out in the AUKUS alliance without imposing any new taxes on

Australians to fund it. Representatives from Australia, the United States and the United Kingdom gathered in Washington DC for the first AUKUS defence ministers' meeting since the security pact was signed last year. A key goal of the AUKUS agreement is to map out a pathway for Australia to acquire nuclear-powered submarines.

<https://www.abc.net.au/news/2022-12-08/us-australia-and-uk-meet-in-washington-for-aukus/101746970>

### **£102 million government backing for nuclear and hydrogen innovation in the UK**

*Gov.uk, December 13, 2022*

The UK government is today (13 December 2022) announcing new funding to support clean energy production in the UK, following Russia's illegal invasion of Ukraine and the subsequent impact on global energy prices. Today's funding includes £77 million to bolster nuclear fuel production and support the development of the next generation of advanced nuclear reactors, along with £25 million for technologies that can produce hydrogen from sustainable biomass and waste, while removing carbon dioxide from the atmosphere. The government is today committing to new and innovative nuclear energy with the announcement of funding worth up to £60 million to kick start the next phase of research into the new cutting-edge high temperature gas reactor (HTGR), a type of advanced modular reactor (AMR), which could be up and running by the early 2030s.

<https://www.gov.uk/government/news/102-million-government-backing-for-nuclear-and-hydrogen-innovation-in-the-uk>

### **K. United States of America**

### **Joint Statement Following the Meeting Between President Biden and President Macron**

*The White House, December 1, 2022*

The United States and France reaffirm that nuclear deterrence remains essential for



their national security and a core component of NATO's overall capabilities for deterrence and defense. They reaffirm that the fundamental purpose of NATO's nuclear capability is to preserve peace, prevent coercion, and deter aggression against the Alliance. They reaffirm the importance of the Treaty on the Non-Proliferation of Nuclear Weapons and their opposition to the Treaty on the Prohibition of Nuclear Weapons, which does not reflect the increasingly challenging international security environment and is at odds with the existing non-proliferation and disarmament architecture. The United States and France also reaffirm support for their Mutual Defense Agreement and intend to expand their technical cooperation on a wide range of strategic risk reduction topics.

<https://www.whitehouse.gov/briefing-room/statements-releases/2022/12/01/joint-statement-following-the-meeting-between-president-biden-and-president-macron/>

### **US Air Force unveils new B-21 Raider nuclear stealth bomber**

*BBC, December 3, 2022*

The US Air Force has unveiled its newest nuclear stealth bomber, the B-21, which will gradually replace aircraft first flown in the Cold War. The first new bomber in 30 years could cost nearly \$700m (£569m) each and can carry nuclear and conventional weapons. As expected, specific details of the aircraft remain shrouded in secrecy. But US Defence Secretary Lloyd Austin said it was "a testament to America's enduring advantages in ingenuity and innovation".

The B-21 Raider was unveiled during a ceremony on Friday at manufacturer Northrop Grumman's facility in California.

Mr Austin said the plane would offer significant advances over existing bombers in the US fleet, stating that "even the most sophisticated air defence systems will struggle to detect the B-21 in the sky".

<https://www.bbc.com/news/world-us-canada-63845082>

### **US Navy shows its prowess, shares submarine's 'undetected' port visit, docking in Indian Ocean**

*WION News, December 4, 2022*

In a rare move, the US military informed its allies as well as adversaries of the docking of a US Navy nuclear-powered ballistic missile submarine for the first time at the remote island of Diego Garcia, located in the Indian Ocean, as part of the months-long deployment. The Navy, in its message, revealed the USS West Virginia's docking in the Indian Ocean and its visit to the port from October 25 to 31. When Navy submarines are at sea, their specific movements remain highly classified, so the submarines would have got the required time to transit to a different location in the Indian Ocean because of the delayed announcement.

<https://www.wionews.com/world/us-navy-informs-its-adversaries-of-a-rare-submarine-port-visit-in-indian-ocean-539848>

### **Austin Says Progress Made on Developing Australia's Nuclear-Powered Subs**

*US Department of Defense, December 7, 2022*

Australian, United Kingdom and U.S. officials met today to discuss AUKUS, the security pact between the three allies. Australian Defense Minister Richard Marles and British Defense Secretary Ben Wallace met with Secretary of Defense Lloyd J. Austin III and Chairman of the Joint Chiefs of Staff Army Gen. Mark A. Milley at the Pentagon. Since September 2021 when the trilateral security partnership was announced, progress has been made toward Australia acquiring conventionally armed, nuclear-powered submarines, Austin said. The United States is committed to ensuring that Australia acquires this capability at the earliest possible date and in adherence with the highest nonproliferation standards, Austin added.

<https://www.defense.gov/News/News-Stories/Article/Article/3238880/austin-says-progress->

*made-on-developing-australias-nuclear-powered-sub/s/*

## **US slams ‘loose talk’ on nuclear weapons after Putin musings**

*France 24, December 7, 2022*

Putin, who has previously hinted at use of small “tactical” weapons in his war in Ukraine, said at a Kremlin meeting that “such a threat is rising” but he was evasive on Russia’s policy. “Russia will under no circumstances use them first,” Putin said. “But if it does not use them first under any circumstances, then it will not be the second to use them either, because the possibilities of using them in the event of a nuclear strike against our territory are very limited,” Putin said. US State Department spokesman Ned Price, asked about Putin’s remarks, declined to reply directly but said, “We think any loose talk of nuclear weapons is absolutely irresponsible.”

*<https://www.france24.com/en/live-news/20221207-us-slams-loose-talk-on-nuclear-weapons-after-putin-musings>*

## **New Mexico seeks tougher provisions for US nuclear dump**

*APN News, December 9, 2022*

New Mexico officials outlined new conditions Thursday for a proposed permit for the U.S. government to continue the disposal of nuclear waste in the southeast corner of the state, part of a multibillion-dollar federal cleanup program. As a hedge against becoming the nation’s only permanent dumping ground, New Mexico wants to raise the bar with its proposal by demanding federal officials produce a full accounting of materials still needing to be cleaned up and shipped to the Waste Isolation Pilot Plant, or WIPP. The state also is putting Congress on notice that the permit would be revoked if lawmakers expand the type of waste accepted at WIPP. Currently, the repository is licensed to take what is known as transuranic waste, or waste generated by the nation’s nuclear weapons program that is contaminated with

radioactive elements heavier than uranium.

*<https://apnews.com/article/business-new-mexico-nuclear-weapons-united-states-government-climate-and-environment-e5441c9cfb9ce005c699baa39f31bcfe>*

## **US Defense Secretary: Russia, China ‘Expanding’ Nuclear Arsenals**

*VOA News, December 10, 2022*

Russia and China are “modernizing and expanding” their nuclear weapons arsenals, Secretary of Defense Lloyd Austin warned Friday, amid increasing tensions with Moscow over Ukraine and with Beijing over Taiwan. Speaking at the headquarters of U.S. Strategic Command, the military command in charge of America’s nuclear weapons arsenal, Austin said the United States is “on the verge of a new phase” where two major nuclear powers are “strategic competitors.” The U.S. defense secretary criticized Russian President Vladimir Putin for what he referred to as “deeply irresponsible nuclear saber-rattling” since invading Ukraine in February. “Nuclear powers have a profound responsibility to avoid provocative behavior, and to lower the risk of proliferation and to prevent escalation and nuclear war,” he said.

*<https://www.voanews.com/a/us-defense-secretary-russia-china-expanding-nuclear-arsenals/6870706.html>*

## **U.S. expected to announce major breakthrough in quest for zero-carbon nuclear fusion energy**

*CBS News, December 12, 2022*

The U.S. Department of Energy said Sunday it would announce a “major scientific breakthrough” this week, after media reported a federal laboratory had recently achieved a major milestone in nuclear fusion research. The Financial Times reported Sunday that scientists in the California-based Lawrence Livermore

National Laboratory (LLNL) had achieved a “net energy gain” from an experimental fusion reactor. That would represent the first time that researchers have successfully produced more energy in a fusion reaction - the same type that powers the Sun - than was consumed during the process, a potentially major step in the pursuit of zero-carbon power.

<https://www.cbsnews.com/news/nuclear-fusion-energy-breakthrough-us-expected-announcement-zero-carbon-power/>

### **US scientists reach long-awaited nuclear fusion breakthrough, source says**

*CNN, December 13, 2022*

For the first time ever, US scientists at the National Ignition Facility at the Lawrence Livermore National Laboratory in California successfully produced a nuclear fusion reaction resulting in a net energy gain, a source familiar with the project confirmed to CNN. The US Department of Energy is expected to officially announce the breakthrough Tuesday. The result of the experiment would be a massive step in a decadeslong quest to unleash an infinite source of clean energy that could help end dependence on fossil fuels. Researchers for decades have attempted to recreate nuclear fusion - replicating the fusion that powers the sun.

<https://edition.cnn.com/2022/12/12/politics/nuclear-fusion-energy-us-scientists-climate/index.html>

### **L. East Asia**

#### **Japan, S Korea, US slap sanctions on N Korea over missile tests**

*Aljazeera, December 2, 2022*

Japan, South Korea and the United States have imposed sanctions on North Korean officials connected to the country’s illicit weapons programmes, with Washington saying Pyongyang’s ballistic missiles “pose grave risks to the region and the entire world”. The US Treasury Department on Thursday named the individuals as Jon Il

Ho, Yu Jin, and Kim Su Gil, all of whom the European Union designated for sanctions in April. The sanctions freeze any US-based assets of the individuals and bar dealings with them but appear largely symbolic. South Korea’s foreign ministry announced sanctions on seven other individuals, including a Singaporean and a Taiwanese person, and eight entities. All are already under US sanctions imposed between January 2018 and October 2022, the ministry said.

<https://www.aljazeera.com/news/2022/12/2/us-s-korea-japan-slap-sanctions-on-n-korea-over-missile-tests>

#### **Crumbling nuclear plant may fuel Philippines after 36-year delay**

*The Japan Times, December 13, 2022*

A nuclear power plant on the Philippines’ western coast has sat idle for nearly four decades, costing billions of dollars and never producing a watt of electricity. Now, it’s at the center of debate over whether the nation should finally adopt atomic energy.

Dictator Ferdinand Marcos ordered construction of the 620-megawatt Bataan facility in response to the oil shock in the 1970s, the first and only one of its kind in Southeast Asia. Beset with safety concerns and corruption allegations, the completed project was ultimately mothballed after Marcos was ousted in 1986. The six presidents who followed all decided against commissioning it, deterred by nuclear disasters, local politics and court cases.

<https://www.japantimes.co.jp/news/2022/12/13/asia-pacific/philippines-nuclear-plant-restart-debate/>

#### **South Korea, US, Japan Cement Trilateral Response to North Korea’s Nuclear Threats**

*The Diplomat, December 14, 2022*

Kim Gunn, the South Korean special representative for Korean Peninsula peace and security affairs, met his U.S. and

Japanese counterparts – Sung Kim and Funakoshi Takehiro – on Tuesday in Jakarta, Indonesia. The talks came three months after their last meeting in Tokyo, Japan. The representatives discussed North Korea's recent actions, including its missile launches, and reaffirmed their joint commitment on the issue during the meeting. "The international community has firmly pursued a denuclearization of North Korea as a common goal for the past 30 years and will not reconsider it in a million years," Seoul's special representative Kim said. He also stressed that the international community will not recognize the North as a nuclear state, adding that Pyongyang would need to face reality if it has even a little hope for that outcome.

<https://thediplomat.com/2022/12/south-korea-us-japan-cement-trilateral-response-to-north-koreas-nuclear-threats/>

### *M. Japan*

#### **Fukushima gets ready to discharge treated water into the sea**

*Euro News, December 7, 2022*

Eleven years after the Fukushima nuclear catastrophe, the region's inhabitants are preparing for a new step. Japan will soon start discharging treated water into the sea.

Water that touched the fuel has become radioactive. Filtered in a plant within the power plant, it's kept in tanks that will reach their maximum capacity in 2023. The water's decontaminated of all radioactive substances except tritium, which is inseparable from water. The treated water will be mixed with seawater to be diluted. Then it will be discharged into the sea, a kilometre away via a tunnel. "The characteristics of tritium that will be released at Fukushima are similar to those released by nuclear power plants around the world," says Kimoto Takahiro, deputy site superintendent at D&D Communication Center.

<https://www.euronews.com/next/2022/12/06/fukushima-gets-ready-to-discharge-treated-water-into-the-sea>

#### **Tokyo's 'counterstrike' fist is sound, but lacks nuclear punch**

*Asia Times, December 9, 2022*

Will a fleet of glistening missiles, emblazoned with the emblem of the rising sun, soon line Asia's eastern horizon? It is looking increasingly likely. The two parties that make up Japan's ruling coalition reached an agreement on December 2 on the acquisition of a missile-based "counterstrike capability," able to strike targets in threatening enemy countries. The details behind this capability are expected to be spelled out in three documents, including the National Security Strategy, to be issued by the end of the year. With the parties on the same page, debate is expected to move to the Diet. There, the combination of the ruling coalition and supportive minority right-wing parties, as well as opinion polls that find Japanese public support a more robust military stance, indicate the plan will become reality.

<https://asiatimes.com/2022/12/tokyos-counterstrike-fist-is-sound-but-lacks-nuclear-punch/>

#### **Kishida aims for nuclear abolition talks at Hiroshima G7 summit**

*The Japan Times, December 11, 2022*

Prime Minister Fumio Kishida on Sunday expressed hope to hold thorough debates on a world without nuclear weapons at next year's Group of Seven summit in Hiroshima. "I want to deepen discussions so that we can release a strong message toward realizing a world free of nuclear weapons," he said at a closing ceremony for the first meeting of the International Group of Eminent Persons for a World without Nuclear Weapons, or IGEP, held in Hiroshima for two days from Saturday. "We are facing tough barriers over nuclear disarmament, such as growing threats to use nuclear weapons," Kishida said, asking IGEP member experts to "produce meaningful outcomes regarding specific



ways to bring the tough reality closer to the ideal.”

<https://www.japantimes.co.jp/news/2022/12/11/national/fumio-kishida-nuclear-weapons/>

## Japan Calls China Unprecedented Challenge in Security Shift

*Bloomberg, December 15, 2022*

Japan will describe China as an “unprecedented strategic challenge” in a new national security policy, according to a draft seen by Bloomberg. The new strategy, expected to get the green light from Prime Minister Fumio Kishida’s cabinet Friday, also lays out plans for Japan to obtain longer-range missiles – including developing its own hypersonic weapons – as part of a radical upgrade of its defense capabilities. Kishida is set to give a news conference in Tokyo focusing on the changes at 6 p.m.

<https://www.bloomberg.com/news/articles/2022-12-15/japan-to-call-china-unprecedented-challenge-in-security-shift?leadSource=uverify%20wall>

### N. South Korea

## Seoul places new sanctions on North Korea over arms buildup

*AP News, December 2, 2022*

South Korea on Friday sanctioned eight people and seven companies suspected of engaging in illicit activities to finance North Korea’s growing nuclear weapons and missile programs. The move, which prohibits South Koreans from conducting any type of business with them without authorization, was largely symbolic as there are little financial dealings between the rival Koreas. But the steps may still draw an irritated response from North Korea, which last month called South Korean President Yoon Suk Yeol and his government “idiots” and a “wild dog gnawing on a bone given by the U.S.” after Seoul said it’s considering placing more unilateral sanctions on Pyongyang. The South Korean sanctions were announced shortly after the

U.S. Treasury Department said it sanctioned three members of North Korea’s ruling Workers’ Party who provided support to the country’s development of nuclear and ballistic weapons.

<https://apnews.com/article/europe-seoul-south-korea-nuclear-weapons-north-dc2cf252f0886e73c8fcd07a4aad0e69>

## South Korea seeks to strike balance between nuclear and renewables

*Nikkei Asia, December 2, 2022*

South Korea’s environment minister sought to counter criticism that her country was tardy in switching to green energy, saying it was taking a gradual approach to using more renewables while powering up its nuclear sector. “We will increase the share of renewables step by step,” Han Wha-jin said in a recent interview with Nikkei Asia.

<https://asia.nikkei.com/Business/Energy/South-Korea-seeks-to-strike-balance-between-nuclear-and-renewables2>

## U.S. Space Force sets up South Korean HQ to monitor N Korean missiles

*Nikkei Asia, December 3, 2022*

The American and South Korean militaries are setting up space-monitoring organizations in South Korea, aiming to keep an eye on North Korea’s nuclear and missile activity as its capabilities continue to improve. The U.S. Space Force launches a regional command this month in South Korea, whose own air force consolidated space-related units into a Space Operations Squadron on Thursday. They are expected to use satellites to strengthen reconnaissance.

<https://asia.nikkei.com/Politics/International-relations/U.S.-Space-Force-sets-up-South-Korean-HQ-to-monitor-N-Korean-missiles>

## South Korean APR-1400 starts commercial operation

*World Nuclear News, December 7, 2022*

Unit 1 of the Shin Hanul nuclear power plant has entered commercial operation, Korea Hydro & Nuclear Power (KHNP) announced. The unit - the first of four APR-1400 reactors at the site - has been in test operation since July. "Commercial operation refers to the start of power generation in earnest after confirming final safety through commissioning tests and receiving approval from the government," KHNP noted. KHNP CEO Hwang Ju-ho said: "We will operate Shin Hanul unit 1 with safety as our top priority so that we can contribute to electricity supply and demand in winter."

<https://www.world-nuclear-news.org/Articles/South-Korean-APR-1400-starts-commercial-operation>

### O. North Korea

## North Korea Fires Artillery Near Border With South Korea

*The Diplomat, December 6, 2022*

North Korea fired about 130 artillery rounds on Monday into the water near its western and eastern sea borders with South Korea, the latest military action contributing to worsening relations between the neighbors. North Korea's military said the firings were a warning against ongoing South Korean artillery exercises near the inland border town of Cheorwon and blamed the South for worsening tensions. South Korea's Joint Chiefs of Staff said the North Korean weapons, fired Monday afternoon from North Korea's western and eastern coastal areas, fell within the northern side of buffer zones created under a 2018 inter-Korean agreement to reduce military tensions. There were no immediate reports of shells falling inside South Korean territorial waters.

<https://thediplomat.com/2022/12/north-korea-fires-artillery-near-border-with-south-korea/>

## North Korea claims successful rocket test that could bolster its ICBM force

*CNN, December 15, 2022*

North Korea on Friday said it has successfully tested a solid-fueled rocket motor, a development that could lead to Kim Jong Un's regime being able to more quickly and reliably fire an intercontinental ballistic missile (ICBM) in the future. The new high-thrust rocket motor was tested at a satellite launching ground site northwest of Pyongyang on Thursday, according to a report by the state-run Korean Central News Agency (KCNA). Photos released by state media showed North Korean leader Kim attending the test, which KCNA said provided a "guarantee for the development of another new-type strategic weapon system." That could be a new ICBM, experts said.

<https://edition.cnn.com/2022/12/15/asia/north-korea-solid-rocket-motor-test-intl-hnk-ml/index.html>

## Contribute Articles

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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