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Cabinet approves mega 5G auction

Tech firms can set up captive networks

Need for speed

A look at how 5G compares to previous technologies. 5G's maximum data speed is 10 times higher than the presently used 4G

Year	Generation	Maximum data speed
1979	1G	none (voice only)
1991	2G	14.4 Kbps
2000	2.5G	53.6 Kbps
2001	3G	384 Kbps
2010	4G	100 Mbps
2020	5G	1 Gbps



SOURCE: GRAPHIC NEWS

PRESS TRUST OF INDIA
NEW DELHI

The Union Cabinet has approved the auction of airwaves capable of offering fifth generation, or 5G, telecom services, including ultra high-speed Internet, and gave its nod for setting up of captive 5G networks by big tech firms.

The auction of over 72 GHz of the spectrum will be held by July-end, said an official statement detailing the decision taken by the Union Cabinet headed by Prime Minister Narendra Modi at its meeting held on Tuesday.

The spectrum auction will start on July 26, 2022.

Sources said that the Cabinet has approved 5G auctions at reserve prices recommended by the sector

regulator, Telecom Regulatory Authority of India (TRAI).

TRAI had earlier recommended about a 39% reduction in the reserve or floor price for the sale of 5G spectrum for mobile services.

While the 5G spectrum in nine frequency bands will be auctioned to telecom operators such as Bharti Airtel and Reliance Jio, the Notice Inviting Applications – bid-related document issued by the Department of Telecom (DoT) – said big tech firms for the time being will be allowed to take the 5G spectrum for their captive non-public network, on lease from the telecom companies.

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Captive non-public network : It is a local area network that uses 3GPP-based network spectrum, to create unified connectivity and a secure means of communication within a specific area. It enables enterprises to dedicate bandwidth for ultra-reliable low-latency use cases such as robotics and industrial IoT, with control over data, security and networks. It can also be tailored for specific industry and business requirements. Big companies like Google and Amazon has pitched for this in India's 5G spectrum allocation.

Comparison of 4G, 5G, and 6G:

Per device peak data rate :

- 4G = 1Gbps
- 5G = 10 Gbps
- 6G = 1tbps

Latency :

- 4G = 100 ms
- 5G = 10 ms
- 6G = 1 ms

Satellite integration :

- 4G = No
- 5G = No
- 6G = Fully

Maximum Frequency :

- 4G = 6 GHz
- 5G = 90 GHz
- 6G = 10 THz

The fragile state of nuclear disarmament

How has India fared in SIPRI's annual report? Is the world becoming increasingly more militarised?

RISHABH KACHROO

The story so far: The **Stockholm International Peace Research Institute** (SIPRI) released its yearbook a few days back highlighting some worrying trends of the past year in international security. The expected rise of the global nuclear arsenal was the chief cause of concern among SIPRI experts. The comprehensive report claims that while absolute numbers of nuclear arsenal have reduced, they are expected to grow over the next decade.

What have been the trends in military spending?

During 2012-2021, military spending as a percentage of gross domestic product has largely been stable. If anything, the average worldwide trend has been slightly downward. **Russia leads the charge in absolute numbers of nuclear inventory (5977 against the U.S.'s 5428), however it is the U.S. that has the largest number of deployed warheads (1744 against Russia's 1588).** The U.K. has 225 nuclear weapons in its inventory, while France has 290, China has 350, **India has 160, Pakistan has 165,** Israel is estimated to have 90 and North Korea 20.

It is concerning, to say the least, to see how global discourse has created a sense of fear around China's military modernisation and their upward trend in nuclear weapons development while the thousands of nuclear weapons held by the U.S. don't seem to attract a similar level of attention.

What about global arms imports?

Military modernisation is seen to be a global trend. All nuclear weapon owning states have, over the years, stated and worked upon their intention to modernise multiple facets of their armed forces—ranging from the development of newer and more efficient nuclear submarines, aircraft carriers, fighter jets, manned and unmanned aerial vehicles to the growing spread of the use of missile defence systems which may result in aggravating security concerns for other countries.

The yearbook has highlighted India as being the top weapons importer during the 2017-2021 period. Other countries to feature in the top five arms importers list include

Saudi Arabia, Egypt, China, and Australia. According to SIPRI, these five nation states account for 38% of total global arms import.

What are the key developments/concerns flagged by the yearbook?

The yearbook mentions low level border clashes between India and Pakistan, the civil war in Afghanistan, and the armed conflict in Myanmar as some of the worrying indicators of an unstable system. It also highlighted three cause of concern trends: Chinese-American rivalry, involvement of state and non-state actors in multiple conflicts, and the challenge that climatic and weather hazards pose. It is important to note here that the threat posed by climate change seems to feature in the report only nominally.

The marginal downsizing observed in the nuclear arsenal has come mostly from the U.S. and Russia dismantling retired warheads. But the Russian invasion of Ukraine has raised some serious eyebrows because of the continuous rhetoric from the Kremlin over them not shying away from the use of nuclear weapons. China's recent activities surrounding construction of 300 new nuclear missile silos have also been turning heads. Speaking at the Shangri-La Dialogue, Chinese Defence Minister, Wei Fenghe, claimed that while they have made "impressive progress" vis-à-vis their nuclear arsenal, the primary purpose of said arsenal continues to be self-defence. Over in the subcontinent, India and Pakistan seem to be making gains over their nuclear arsenal (in absolute numbers) while also looking at the development and procurement of newer and more efficient forms of delivery systems.

Has Iran inflated its military expenditure?

The SIPRI yearbook claims that while there were some advances over the rollout of the 2015 Joint Comprehensive Plan of Action, Iran increased its enrichment of Uranium-235 to 60% in 2021. It also reported that Iran's military budget grew to \$24.6 billion, growing for the first time in four years. However, some analysts believe that SIPRI has, over the years, overstated Iran's military expenditure. This is based on there

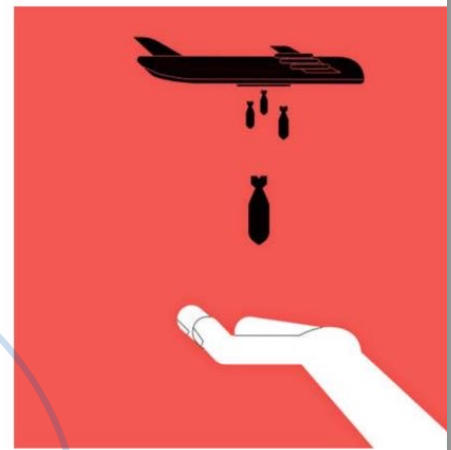
not being a single Iranian exchange rate, resulting in a hyperinflated estimation of expenditure by SIPRI analysts.

It is claimed that SIPRI is aware of this 'accusation' and will investigate the 'exchange rate issue'.

What is the general attitude among countries about existing nuclear and arms related treaties?

Earlier this year, the leaders of the P5 countries (China, France, Russia, the U.K. and the U.S.) issued a joint statement affirming the belief that "a nuclear war cannot be won and must never be fought". The joint statement also highlighted their seemingly collective belief that bilateral and multilateral arms control agreements and commitments were indeed important. The dichotomy of this sentiment against the upward trend in absolute numbers of arms and nuclear arsenals is rather unsettling. One could however claim that even with these upward trends, the nation states are making sure to remain well within the ambit of what the treaties and agreements ask for. The tactic here seems to be to milk the treaties and agreements to the hilt. The states are aware of the value of the rhetoric and the security dilemma that their actions present. The recent Russian invasion of Ukraine and the subsequent NATO bids by Finland and Sweden seem to be telling events. While the Ukrainian invasion saw Russian military and political establishments hype-up its nuclear attack rhetoric against Ukraine, its primary leadership (both civil and military) had been rather diplomatic and 'relatively' cordial in its treatment of the Finnish and Swedish NATO bids.

Clear and constant communication between the countries involved was instrumental in making sure no unintended meanings were construed by the parties involved. The Russians seem to protract this invasion and hope to win it by exhausting Ukraine's defence capabilities. The year 2021 also saw the Treaty on the Prohibition of Nuclear Weapons, 2017 coming into effect. The Nuclear Suppliers Group (NSG) and the Missile Technology Control Regime (MTCR) held their annual meetings despite decision making being limited due to the COVID-19 pandemic.



What lies ahead?

The recent geopolitical events transpiring around the world in practically all regions have made the global security climate more unstable. A sense of precariousness lulls the air. It is further aided by actions of authoritarian leaders of not just non-democratic systems but also of strongmen leaders of democratic systems. The muscular military policies of these nations coupled with the continuous use of rhetoric that fuel public sentiment over the state's use of military assets make ripe conditions for the situation to further deteriorate. A strong political opposition would be needed to help keep the ruling dispensation in check. Furthermore, the two largest nuclear weapons holding states need to take on a more engaging role in the international arena. SIPRI's yearbook, while not being devoid of some challenges, forces us to look critically at how the global disarmament project seems to be going.

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- **India has not ratified**
 1. Non-Proliferation Treaty
 2. Comprehensive Nuclear Test - Ban Treaty
 3. Treaty on the Prohibition of Nuclear Weapons (TPNW)
- **India is not a member** of Nuclear Suppliers Group. It is a club of 48 countries that deals with the trade in nuclear technology and fissile materials besides contributing to the non-proliferation of nuclear weapons. It came into existence in 1974— in response to the Indian nuclear test (smiling Buddha).
- **India is a member of the Missile Technology Control Regime (MTCR).** It is an informal political understanding among states that seek to limit the proliferation of missiles and missile technology. It was established by G-7 countries in 1987. India became a member of this group in 2016.

FLAGS SLOWING US GROWTH; JUMP BIGGEST SINCE 1994

US Fed revs up inflation fight with 75-bp rate hike

REUTERS

WASHINGTON, JUNE 15

THE US Federal Reserve raised its target interest rate by three-quarters of a percentage point on Wednesday to stem a disruptive surge in inflation, and projected a slowing economy and rising unemployment in months to come.

The action raised the short-term federal funds rate to a range of 1.5 per cent to 1.75 per cent, and Fed officials at the median projected the rate increasing to 3.4 per cent by the end of this year and to 3.8 per cent in 2023 — a substantial shift from projections in March that saw the rate rising to 1.9 per cent this year.

The rate hike was the biggest made by the US central bank since 1994. "The committee is strongly



JEROME POWELL

Chair, US Federal Reserve *AP file*

committed to returning inflation to its 2 per cent objective," said a statement.

At 2:20 pm ET, the Dow Jones was up 154 points, or 0.51 per cent, at 30,518.96. Spot gold was up 3 per cent while 2-year Treasury yields, sensitive to rate increases, rose to 3.441 per cent.

EXPLAINED

The India impact: FPI interest may take a hit

THE INCREASE of 0.75 percentage point by the US Federal Reserve is the largest since 1994. A faster-than-expected monetary tightening in the US could have a three-pronged impact: When the Fed raises its policy rates, the difference between the interest rates of the two countries narrows, thus, making countries such as India less attractive for the currency carry trade. Higher returns in the US debt markets could also trigger a churn in emerging market equities, tempering foreign investor enthusiasm. There is also a potential impact on currency markets, stemming from outflows of funds. From a macro perspective, a high rate signal by the Fed would also mean a lower impetus to growth in the US, which could be negative news for global growth.