

19 December 2024

Partnership between Akash Systems and NxtGen Datacenter

Context: Akash Systems, a leader in semiconductor innovation, has secured a \$27 million partnership with NxtGen Datacenter and Cloud Technologies, India's largest sovereign cloud provider. This collaboration is set to revolutionize AI infrastructure by providing cutting-edge, sustainable, and energy-efficient AI computing solutions.

- Through this contract, Akash will supply its Diamond Cooled AI servers to NxtGen's data centers across India, enabling them to offer exceptional performance while maintaining a low environmental footprint.

About Akash Diamond Cooling technology:

- Akash's Diamond Cooling technology integrates synthetic diamond, the most thermally conductive material at 2200 W/mK, into semiconductor chips. This innovation accelerates heat extraction from hot GPU chips, significantly reducing thermal throttling and increasing overclocking capabilities by 25%.

Benefits to NxtGen:

- This partnership allows NxtGen to offer energy-efficient, high-performance AI computing solutions to its clients. Powered by NVIDIA and AMD GPUs integrated with Akash's Diamond Cooling, these servers are expected to double performance per watt, cutting operational costs for AI services by more than 50%. This makes AI computing more affordable and accessible to businesses.

Long-Term Benefits:

- In addition to enhancing performance, Akash's Diamond Cooling technology extends the lifespan of servers by keeping GPU temperatures lower (by 10°–20°C) compared to traditional cooling methods. It also significantly reduces the need for GPU fans, lowering energy consumption by up to 90%.
- This not only enhances the operational efficiency of NxtGen's data centers but also aligns with the companies' commitment to sustainability. By implementing Akash's innovative cooling solutions, NxtGen is able to expand its capabilities while reducing the environmental impact of its operations.

What are Semiconductor Chips?

- Made from materials like silicon, germanium, and

gallium arsenide, semiconductor chips manage electrical conductivity between conductors and insulators. These chips contain transistors, which control the flow of electrical current and act as the building blocks of chips. The more transistors a chip has, the more powerful it becomes.

Key Components:

- Transistors:** The primary switches that process information.
- Diodes:** Regulate electrical flow in one direction.
- Resistors & Capacitors:** Control current and store energy.
- Interconnects:** Tiny wires that link all components on the chip.

How Semiconductor Chips work?

- Chips operate by allowing electrons to flow when voltage is applied. Transistors act as switches to control this flow, enabling the chip to perform logic operations for tasks like processing data and controlling signals.

Way Forward:

Aakash Systems and NextGen will need to focus on continued innovation to make this partnership successful. Training of employees will be necessary for better integration of diamond cooling technology in data centers. At the same time, investment in research and development must continue to make energy-efficient solutions more affordable. This technology can also be used in other areas, such as cloud computing and AI-driven industries. This initiative will strengthen India's technological and environmental sustainability.

Cyclone Chido

Context: Cyclone Chido, which developed from a tropical depression and intensified into a powerful cyclone with winds exceeding 220 km/h (137 mph). The storm left extensive damage in Mayotte, a poor region of France, and caused devastation in neighboring areas like Madagascar, Mozambique, and Comoros.

- Scientists warn that cyclones like Chido are becoming more intense due to climate change, and better monitoring and infrastructure are needed to reduce future damage.

How climate change fuels cyclone growth:

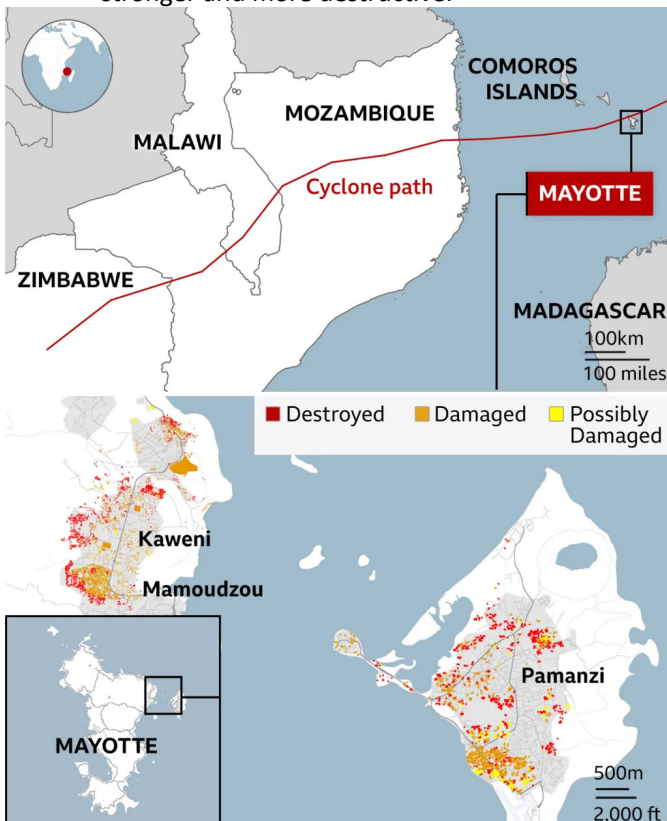
Face to Face Centres



19 December 2024

■ Rising Ocean Temperatures:

- » Climate change leads to higher sea surface temperatures.
- » Warmer oceans provide more energy for cyclones, making them more intense.
- » Cyclones form over warm waters (above 26.5°C or 79.7°F), and as temperatures rise, they become stronger and more destructive.



■ More Moisture in the Atmosphere:

- » Warmer air holds more moisture.
- » Rising moisture increases heat release when the moisture condenses, fueling the cyclone's growth.
- » This can lead to heavier rainfall and more intense flooding during storms.

■ Longer Storm Seasons:

- » Warmer oceans extend the cyclone season.
- » Cyclones can develop and last longer, increasing the frequency and duration of extreme weather events.

■ Stronger Winds:

- » Higher ocean temperatures lead to stronger winds.
- » Stronger winds are a key feature of intense cyclones and cause greater damage to infrastructure, trees,

and power lines.

About Tropical Cyclones:

- Warm sea surface temperature above 27°C.
- Continuous supply of warm, moist air releasing latent heat.
- Strong enough to prevent filling of low pressure at the center.
- Local disturbances in the troposphere for cyclone development.

Regional Names for Tropical Cyclones:

- **Indian Ocean:** Cyclones
- **Atlantic:** Hurricanes
- **Western Pacific and South China Sea:** Typhoons
- **Western Australia:** Willy-willies

How Cyclones are Named and Guidelines?

- In 2000, WMO/ESCAP (World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific) decided to name cyclones in the Indian Ocean region. Initially involving 8 countries, it expanded in 2018 to include 5 more. Each country suggested 13 names, and a list of 169 names was finalized by IMD in 2020.

Guidelines for Naming Cyclones:

- Names should be neutral regarding politics, religion, culture, and gender.
- Should not offend any group or be cruel in nature.
- Must be short, easy to pronounce, and under eight letters.
- Once used, a name cannot be reused for future cyclones.

Banglar Bari Scheme

Context: Recently, West Bengal Chief Minister Mamata Banerjee launched the Banglar Bari Housing Scheme, which is fully funded by the state government. The first installment of ₹60,000 was distributed to 42 beneficiaries from 21 districts.

- The West Bengal government has taken a significant step to improve the living standards of its rural population through the Banglar Bari scheme. This ambitious initiative provides financial assistance to 12 lakh families to build concrete houses, which meets the need for safe and permanent housing.

Scheme and Objectives:

Face to Face Centres

19 December 2024

- Under the Banglar Bari scheme launched on 17 December 2024, each beneficiary will be given financial assistance of Rs 1.2 lakh, which will be distributed in two installments. Rs 60,000 as the first installment has been transferred directly to the bank accounts of the eligible beneficiaries.
- The second installment will be given when the construction work through the first installment is completed. This initiative addresses several critical problems of rural families:
 - » **Improved quality of life:** Solid houses provide better protection from environmental impacts, thereby improving the quality of life.
 - » **Reduced risk:** Strong houses provide greater protection during natural disasters, thereby reducing the risk of severe weather conditions.
 - » **Increased self-esteem:** Owning a home gives a sense of security and independence, which contributes to the overall well-being of individuals and families.

Economic and social impact:

- In addition to meeting housing needs, the “Banglar Bari” scheme will also boost economic activities in rural areas. Construction of houses will create employment opportunities for local labourers and increase demand for construction materials, thereby boosting the rural economy. In addition, this initiative strengthens community resilience and social equity by ensuring access to basic infrastructure.
- The government’s commitment to empowering rural families reflects its broader vision of equitable development.
- The scheme is set to bring transformational change in the rural areas of West Bengal by providing housing assistance to 12 lakh beneficiaries in the first phase. The plan to extend this assistance to 1.6 million additional families by 2026 further underscores the scheme's breadth and impact.

Way forward:

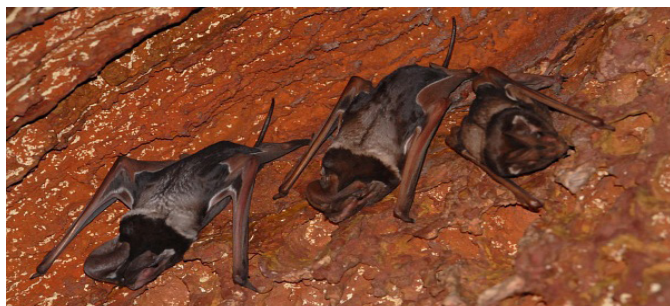
The “Banglar Bari” scheme exemplifies the commitment of the Government of West Bengal to meet basic human needs and promote socio-economic progress. By providing rural households access to safe and dignified housing, this initiative lays the foundation for a more prosperous and equitable future, ensuring that no one is left behind in the state's development journey.

Wroughton’s Free-Tailed Bat

Context: Recently, Wroughton’s free-tailed bat, a rare species, has been spotted at the Yamuna Biodiversity Park in Delhi. Typically found in the Western Ghats with a single known breeding colony, the species has also been recorded in Meghalaya and Cambodia. This sighting is significant for Delhi, where around 14 bat species exist, four of which were once considered locally extinct.

About Wroughton’s Free-Tailed Bat:

- Wroughton’s free-tailed bat is a rare species originally thought to be confined to the Western Ghats in India, with recent sightings in northeast India and Delhi. The bat has a forearm length of 63-67 mm and weighs 27-36 grams.
- It is characterized by large forward-pointing ears and a velvety dark brown coat with pale greyish white shoulders. Its tail extends beyond the membrane, giving it the “free-tailed” name.
- The species plays an important role in regulating insect populations and assisting in pollination. Initially considered critically endangered, the bat is now classified as data deficient by the IUCN Red List, following discoveries in three locations. The sighting highlights the success of ecological restoration efforts in Delhi, where the Aravali Biodiversity Park has become a key roosting site for other bat species.



Habitat:

- This species roosts in large natural caves near forests. It is nocturnal and likely feeds on insects like other Molossids.

About Yamuna Biodiversity Park:

- Yamuna Biodiversity Park is a 9,770-hectare area located along the Yamuna River in Delhi, India. Developed by the Delhi Development Authority (DDA) with technical support from the Centre for Environmental Management

Face to Face Centres



19 December 2024

of Degraded Ecosystems (CEMDE), University of Delhi, the park aims to provide habitat for migratory and resident bird species, conserve genetic resources of agricultural crops, and improve groundwater recharge.

History & Restoration:

- The park's restoration began in 2005, focusing on barren floodplains with sodic soil. Phase-I restored 157 acres by developing wetlands, grasslands, and forests, reintroducing native plant species to reduce soil salinity.

Phase-II, started in 2015, focused on active floodplains.

Flora & Fauna:

- The park hosts around 1,500 species of plants and animals, including 200 bird species. It also attracts migratory birds from Siberia, Central Asia, and Europe. Other fauna includes 75 species of butterflies, 10 species of snakes, and mammals like porcupines, civets, and wild boars.

Power Packed News

Ayodhya's Ram Mandir gets 'Sword of Honour' award

- The Ayodhya Ram Mandir project has received the prestigious 'Sword of Honour' award from the British Safety Council. The award is for following stringent safety protocols during the construction process of the project.
- The British Safety Council conducted a thorough audit of the project's safety practices and procedures, making the award one of the highest awards in safety management.
- Earlier, the National Safety Council had awarded the 'Golden Trophy' for safety measures at the temple site.
- The Ram temple is being constructed with Bansi Paharpur stones from Rajasthan, using about 15 lakh cubic feet of stone. So far, the construction of the first and second floors, including the temple's spire, has been completed.
- The award recognises the Ram Mandir project's commitment to safety and excellence.



Preeti Lobana: Google's new Vice President and Country Manager for India

- Preeti Lobana has been appointed as the new Vice President and Country Manager of Google India.
- She will replace Sanjay Gupta, who will now serve as the President of the Asia Pacific Division.
- Lobana will play a key role in realizing Google's AI-driven vision, driving technological innovation and user benefits.
- Rom Dutta Chobey, who was the interim country manager, will work with Lobana and continue in her role as Managing Director of Digital Native Industries.
- Lobana is an alumnus of the Indian Institute of Management, Ahmedabad and has extensive experience in the field of technology. Her appointment will further strengthen Google India's operations.



Indore: Giving alms to beggars will be a crime from January 1

- The Indore district administration has announced that giving alms to beggars will be considered a crime from January 1, 2025. The administration aims to make the city beggar-free. This rule will apply to both child and elderly beggars.
- The administration believes that discouraging donations will break the cycle of begging. FIRs will be registered against those who give donations. The administration has also launched an awareness campaign about the disadvantages of giving alms. So far, more than 35 child beggars have been rescued and sent to government shelters.

Face to Face Centres

DELHI MUKHERJEE NAGAR: 9205274741, 42 | **LAXMI NAGAR**: 9205212500, 9205962002 | **RAJENDRA NAGAR**: 9205274743 | **UTTAR PRADESH** PRAYAGRAJ: 0532-2260189, 8853467068 | **LUCKNOW** (ALIGANJ): 0522-4025825, 9506256789 | **LUCKNOW** (GOMTI NAGAR): 7234000501, 7234000502 | **GREATER NOIDA**: 9205336037, 38 | **KANPUR**: 7887003962, 7897003962 | **GORAKHPUR**: 7080847474, 9161947474 | **ODISHA** BHUBANESWAR: 9818244644/7656949029



dhyeyaias.com

19 December 2024

- The city administration is working to provide other alternative means of livelihood to the beggars. This initiative is part of the aim to make Indore a clean, organised and self-reliant city.

Kisan Kavach: Anti-pesticide bodysuit

- The Ministry of Science and Technology has launched 'Kisan Kavach' to protect farmers from the harmful effects of pesticides.
- This bodysuit provides protection from pesticide-induced toxicity and helps preserve the health of farmers. The suit is washable and prevents problems like respiratory disorders and vision loss.
- Dr Singh called it a groundbreaking solution for the safety of farmers.
- The first batch of 'Kisan Kavach' was distributed to farmers during the launch event. The initiative aims to improve the living standards of agricultural workers and make their workspace safer.



India's first Geology Museum in Gwalior

- Vice President Jagdeep Dhankhar inaugurated India's first geology museum in Gwalior. This museum presents information on geology in an interesting and attractive manner.
- The museum displays the evolution of dinosaurs, the history of mankind and the geological evolution of the Earth. It has been prepared in collaboration with the National Science Museum Council and Gwalior Municipal Corporation.
- Pictures, artifacts and models related to geology are displayed in various galleries of the museum.
- This museum is also useful for educational and research purposes.



Next Generation Missile Vessel (NGMV)

- The Steel Cutting ceremony of the first ship of the Next Generation Missile Vessel (NGMV) being built for the Indian Navy was held at the Cochin Shipyard.

About Next Generation Missile Vessel (NGMV):

- Next Generation Missile Vessels (NGMVs) are a planned class of anti-surface warfare corvettes for the Indian Navy. Under this programme the Indian Navy intends to acquire six advanced missile vessels. Ships in this class will be armed with Anti-ship missile or Land-attack missile like BrahMos. Ships under this class will feature advanced stealth features like a low radar cross section (RCS), infrared, acoustic and magnetic signatures.
- On 2 January 2015, the Ministry of Defence (MOD) issued a Request For Information (RFI) under the Buy Indian and Make Indian categories for six new missile corvettes, initiating the Next Generation Missile Vessels (NGMVs) programme. On 23 February 2021, Cochin Shipyard (CSL) won the bid to construct the six NGMVs at a cost of Rs. 10,000 crores.



Face to Face Centres

DELHI MUKHERJEE NAGAR: 9205274741, 42 | **LAXMI NAGAR** : 9205212500, 9205962002 | **RAJENDRA NAGAR**: 9205274743 | **UTTAR PRADESH** PRAYAGRAJ: 0532-2260189, 8853467068 | **LUCKNOW** (ALIGANJ): 0522-4025825, 9506256789 | **LUCKNOW** (GOMTI NAGAR): 7234000501, 7234000502 | **GREATER NOIDA**: 9205336037, 38 | **KANPUR**: 7887003962, 7897003962 | **GORAKHPUR** : 7080847474, 9161947474 | **ODISHA** BHUBANESWAR: 9818244644/7656949029



dhyeyaias.com