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Date:
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Enquiries:
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Dear Mr Davis Kgosimolao Moshweunyane
Email: dmoshweunyane@icasa.org.za

And Mr Manyapelo Richard Makgotlho
Email: rmakgotlho@icasa.org.za

Re: Eskom response to ICASA's Draft National Radio Frequency Plan 2025

Dear Mr., Moshweunyane and Makgotlho,

Eskom Holdings SOC Ltd appreciates the opportunity to provide written comments on the Draft National Radio Frequency Plan 2025, as published in Government Gazette No. 52449 dated 4 April 2025

As a state-owned enterprise wholly owned by the South African Government, Eskom is mandated to ensure the provision of electricity in an efficient and sustainable manner, thereby supporting economic growth and reducing the cost of doing business in South Africa.

We commend ICASA's efforts in updating the National Radio Frequency Plan to align with international standards and technological advancements. Eskom welcomes the opportunity to contribute to this process and respectfully submits the following comments for your consideration. We also request the opportunity to present our submission orally, should public hearings be convened.

1. Allocation of spectrum for Utility Services.

Eskom notes the global trend of allocating dedicated spectrum to power utilities to support critical infrastructure. Notable examples include:

- a) **Africa:** Ghana's hydropower station was granted 1.8 GHz spectrum to deploy a private network for power distribution services.
- b) **Latin America:** Enel Green Power utilizes 700 MHz and 2.3 GHz spectrum to provide coverage for ENEL's wind farms in Brazil and Chile.
- c) **Asia:** Philippines Meralco has chosen 1.4GHz (Band 45) to deploy electric power distribution networks, planning to launch numerous base stations for building a private network. China has officially released 1.4 GHz spectrum (1447–1467 MHz TDD, designated as IMT Band 45) for broadband digital trunking communication systems, enabling private network applications in the power sector.

These examples underscore the importance of dedicated spectrum in ensuring reliable and secure power grid infrastructure.

2. Proposal for Allocation of Band 45 (1447–1467 MHz) for Utility Services.

In South Africa's current spectrum allocation landscape, the 700 MHz, 1.8 GHz and 2.3 GHz bands remain unavailable for industrial private network deployment. Consequently, the 1.4 GHz (Band 45) spectrum emerges as a viable option for such applications.

Eskom proposes the allocation of the B45 1447–1467 MHz band (20 MHz TDD) to support the deployment of a private network for electric power grid operations. This allocation would significantly enhance the management of decentralized energy generation and smart grid infrastructure. This allocation supports various advanced applications and operational efficiencies: This would facilitate:

- a) Enhanced Communication Reliability and Security:
 - Interference-free operation through licensed spectrum ensures end-to-end physical isolation.
 - Stable communication channels for emergency power operations.
 - Secure data collection, safeguarding user data and ensuring uninterrupted electricity service delivery.
- b) Intelligent grid coordination and improving operational efficiency:
 - Precision control capabilities enabling distribution automation and optimized power flow management on isolated hardware to guarantee high availability.
 - Improved service quality, particularly for low-voltage ($\leq 22\text{kV}$) sites, with high service online rates. With low latency and high reliability, the network enables automation of distribution systems and substations. This leads to improved fault detection, quicker response times, and reduced outage durations.
 - Reliable, secure communication channels, improving coordination, safety, and efficiency during maintenance and emergency responses.
 - The spectrum supports the deployment of AMI, allowing for real-time data collection from smart meters. This enhances demand forecasting, energy management, and customer billing accuracy.
- c) Cost Efficiency and Economic Benefits:
 - Reduced capital expenditure compared to fiber deployments by eliminating the need for extensive civil work.
 - Operational expenditure savings by avoiding recurring carrier data fees, ensuring long-term cost control.
- d) Scalability:
 - Flexibility to adjust base stations to meet evolving grid demands swiftly.
 - Offers scalability to accommodate future technological advancements, including the integration of 5G technologies, ensuring long-term viability of the communication infrastructure.
 - Optimizing load management and supporting the expansion of EV infrastructure.
- e) Cybersecurity and Network Control
 - Operating on a private network provides greater control over cybersecurity measures, protecting critical infrastructure from potential threats and ensuring data integrity.

The adoption of a 1.4 GHz (Band 45) private wireless network would significantly enhance the reliability, cost-effectiveness, and agility of Eskom's power grid operations.

We trust that our submission will be given due consideration. Should you require any further information or clarification, please do not hesitate to contact us.

Yours sincerely

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