

PRESS RELEASE

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South Africa launches HELE CFB Localisation Programme in support of the Integrated Resource Plan 2025

The Council for Scientific and Industrial Research (CSIR), Eskom, the South African National Energy Development Institute (SANEDI) and the Coaltech Research Association have formally initiated Phase 1 of the High Efficiency Low Emission (HELE) Circulating Fluidised Bed (CFB) Clean Coal Technology Localisation Programme. This collaborative initiative supports the direction set out in the Integrated Resource Plan 2025, which outlines South Africa's approach to securing energy supply, improving the performance of the national electricity system and modernising the generating fleet.

The Integrated Resource Plan 2025 highlights that coal remains an important component of the national energy mix in the short to medium term. It also emphasises the need to improve the efficiency and reliability of existing coal-fired power stations while assessing cleaner and more flexible technologies that can operate within a diversified electricity system. The plan also notes that continued coal use must be accompanied by improved plant performance, a greater degree of system flexibility and an evaluation of technologies that can support the country's transition to a more resilient and balanced electricity future.

The HELE CFB programme is designed to respond to these priorities. Phase 1 focuses on feasibility assessment, engineering design and readiness work required to develop a modern pilot-scale HELE CFB test facility in South Africa. It aims to generate rigorous scientific, engineering and regulatory insights that will support evidence-based national decision-making on the future role of high-efficiency, lower-emission coal technologies.

Beyond Phase 1, the programme is intended to form the foundation of a longer-term national capability for advanced coal technology development and localisation. Subject to future approvals and funding availability, the programme has the potential to progress towards pilot-scale demonstration. In the longer term, this platform could support skills development, supplier localisation and informed investment decisions, positioning South Africa to deploy cleaner, more flexible coal-based technologies where they are most appropriate within a diversified energy system.

The Project Leadership Committee, representing all four partner organisations, stated that the programme aligns closely with the vision set out in the Integrated Resource Plan 2025, which calls for credible local analysis of technologies that can improve the efficiency of coal-based generation, reduce emissions and support system stability during the transition period. The partners noted that responsible technology evaluation is essential for ensuring energy security while enabling a gradual shift towards a cleaner and more diverse energy portfolio.

The partners said in a joint statement that the HELE CFB programme reflects a shared commitment to understanding how modern coal technologies can contribute to the energy system of the future. They added that the programme will help South Africa to assess the technical and economic implications of high efficiency coal technologies and to determine how these technologies can support a more resilient, flexible and lower emission energy system.

Phase 1 activities are underway, including process engineering, plant design, site selection and preparation for environmental as well as regulatory engagements, the development of engineering diagrams for future costing and procurement, and collaboration with international technology experts. The work also includes analysis of plant performance assumptions and system requirements consistent with the modelling framework presented in the Integrated Resource Plan 2025.

The HELE CFB programme marks an important step in South Africa's pursuit of a stable, reliable and lower-emitting energy system. By investing in the evaluation of advanced coal technologies, the country is positioning itself to make informed choices about the future of its energy mix. The programme strengthens its ability to navigate a complex transition while supporting economic activity, industrial capability and energy resilience. As Phase 1 progresses, the insights generated through this work will play a meaningful role in shaping national energy planning and ensuring that South Africa remains prepared for the evolving demands of its electricity system.

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