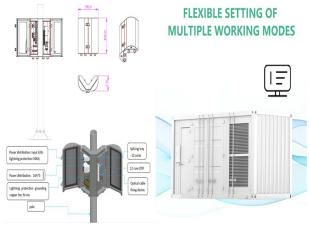
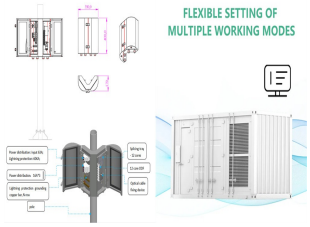
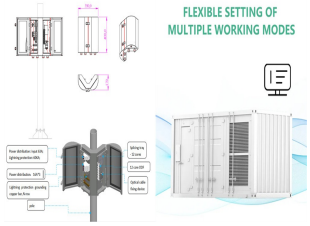
DEVELOPING SOUTH AFRICAN ENERGY STORAGE SITES



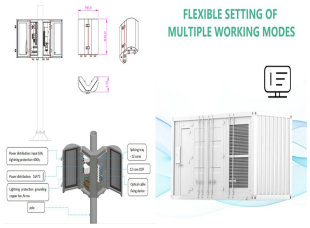
Is Eskom launching a battery energy storage system in South Africa? Friday,10 November 2023: Eskom unveiled the first of its kind largest Battery Energy Storage System (BESS) project not only in South Africa but in the African continent. Eskom officially opened the Hex BESS site at Worcester in the Western Cape yesterday.



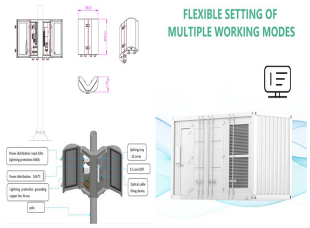
Why is energy storage important in South Africa? Experts say that widespread energy storage is vital to expanding the reach of renewables and speeding the transition to a carbon-free power grid - this is key to helping reduce South Africa???s reliance on fossil fuels as it seeks to transition to clean energy.



Is energy storage a viable option for South Africa's power system? In the longer term,however,at higher levels of variable generation,flexibility requirements will significantly increase demanding interventions to ensure secure and cost-efficient operation of the South African power system. Energy storage was specifically noted to be highly suitablefor this purpose.



What are South Africa's energy storage development and manufacturing objectives? South Africa???s energy storage development and manufacturing objectives and roadmap. Anticipated changes in the generation and consumption profiles of the country with consideration of the most recent IRP (Intervention 1.2 under Policy levers) and any subsequent techno-economic planning and modelling.



Is South Africa ready for energy storage? The extent to which the South African market is ready for energy storage is considered in subsequent sections. The 2030 vision outlined in the National Development Plan (NDP) of 2011 set the objective to completely eliminate income poverty and reduce inequality in the country.

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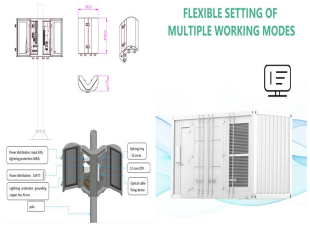
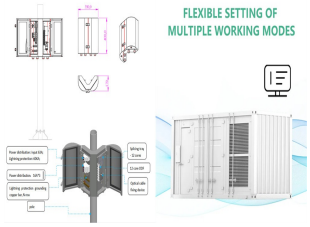


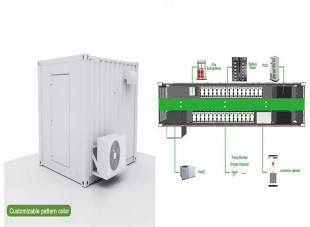
Can stationary energy storage solve South Africa's power system challenges? While the potential of stationary energy storage to address the existing power system challenges,are highin South Africa,the current uptake of the technology is limited to customer-sited,behind-the-meter applications (largely for back up services).



3 ? Agence Fran?aise de D?veloppement (AFD) is providing an EUR 6.5 million ($ 6.9 million) grant towards the development of Eskom's Tubatse Pumped Storage System (PSS) project, which will help the South Africa's state-owned utility accomodate the growing share solar and wind energy in the nation's electricity mix.

Electricity consumers can reduce peak time energy costs (i.e. the dual-peak demand and tariff structure in South Africa, would allow for a VRFB to run two cycles per day to reduce peak time grid demand) "VRFB represents a mature and well understood energy storage technology that is well suited for energy intensive energy storage applications.

The development of the renewable energy industry in South Africa dates to 2003 when the White Paper on Renewable Energy was released by the then Department of Minerals and Energy. The industry began to take shape when the Integrated Resource Plan 2010-2030, setting out the energy mix for the next 20 years in South Africa, was released in 2010.



South Africa Energy Storage Technology and Market Assessment. U.S: Trade and Development Agency, p. 452. ESKOM 2000 -2008 -Our Recent Past -"Shift performance and grow sustainably

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Eskom and Hyosung Heavy Industries, one of the appointed service providers for the Eskom Battery Energy Storage System (BESS) project, unveiled the first of its kind largest battery storage project not only in South Africa but on the African continent. Eskom Hyosung officially opened the Hex BESS site at Worcester in the Western Cape today. The Hex BESS ???

South Africa electricity minister said the solar-plus-storage project is evidence of efforts to mitigate energy security situation. and 225MW/1,140MWh of battery energy storage system (BESS) technology, the project is providing electricity to state utility and grid operator Eskom under a long-term (20-year) power purchase agreement (PPA

The socio-economic and infrastructural development of a developing country can be largely attributed to its electricity generation, transmission and utilization [1], [2], [3], [4] is therefore unsurprising that South Africa being Africa's largest consumer of energy is also among the most developed nations on the African continent [5].South Africa is located on the ???

According to Gaylor Montmasson-Clair, a senior economist at Trade and Industrial Policy Strategy (TIPS). South Africa imported $1.1 billion (4.4 GWh) of lithium-ion cells and batteries in the first six months of 2023 which is mostly imported from China. Of reference Manufacturing a renewable energy value chain in South Africa

detailed "Carbon Storage Sites Atlas" is being addressed. The terms of reference for such a study are nearly complete2 and international expersise being sought. This study is a "make-and-break" for carbon capture and storage in South Africa. If there are no suitable storage sites, then any such projects will be moribund. 3. Regulatory

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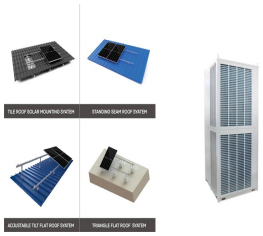
A 540 MW solar and 225 MW/1,140 MWh battery storage hybrid project has commenced operations in South Africa. The project, located in the town of Kenhardt in Northern Cape province, has been billed



Guiding plans and programmes. NDP: The National Development Plan (NDP) is the blueprint for infrastructure development to 2030. DMRE: SA's energy policies are primarily driven by the Department of Mineral Resources and Energy (DMRE) and the Integrated Resource Plan (IRP). IRP: The IRP is DMRE's estimate of electricity demand growth and what energy ???

Mulilo is a renewable energy developer and Independent Power Producer (IPP) committed to leading South Africa's transition to a more sustainable future. Our commitment involves developing, owning, and operating utility scale solar, wind, and battery energy storage systems.

?,? Developing a Battery Energy Storage System (BESS) facility in South Africa involves a comprehensive and systematic approach. ?,? By identifying suitable land, engaging in fair negotiations with landowners, obtaining relevant permits, conducting environmental impact assessments, participating in the BESSIPPP tender process, collaborating

In April 2016, representatives from IDC and other South African entities participated in a USTDA-hosted reverse trade mission (RTM) to the United States. The RTM introduced the delegates to state-of-the-art U.S. technologies, equipment and services ??? as well as policies, regulations and financing mechanisms ??? that can support the implementation of energy storage projects in ???

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The increasing penetration of renewable energy sources like wind and solar power presents an exciting new chapter in South Africa's energy story. The government has shown commitment to developing the battery storage industry through initiatives like the Just Energy Transition Investment Plan and the draft Renewable Energy Masterplan

Energy Storage in 2022. 3,000 MW Gas between 2024 and 2027. 1,500 MW Coal between 2023 and 2027. Active engagement and collaboration has occurred with, amongst others, the South African Development Community (SADC), African Union (AU) and South African Power Pool (SAPP). Bilateral relations are also being pursued in support of cross-border

Red Sands will be Globeleq's first Battery Energy Storage Solutions (BESS) project in South Africa but the Group owns and operates a combined solar and BESS plant at Cuamba in Mozambique, and is

UK company Globeleq, the leading independent power company in Africa, today announced that its Red Sands project in the Northern Cape has been awarded Preferred Bidder status in South Africa's Energy Storage Capacity Independent Power Producer Procurement Programme (ESIPPPP). Globeleq is majority-owned by British International Investment (BII), the ???

Eskom has announced the inauguration of the largest Battery Energy Storage System (BESS) project on the African continent. Insights into UKAEA's revised strategy for commercial development of fusion energy in UK; project on the African continent, marking a significant milestone not only for South Africa but for the entire region. The

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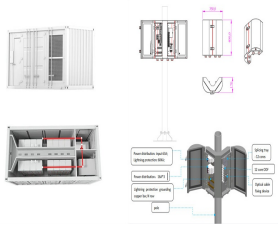
The wide-ranging plan will see storage deployed across all nine provinces of South Africa, in two phases of development and construction: Phase 1: 800MWh of battery energy storage will be deployed along distribution sites operated by Eskom in Eastern Cape, Northern Cape, Western Cape and Kwa-Zulu Natal at various points.

2 2 PROGRAM ??? WELCOME ??? KEY NOTE ???Lizeka Matshekga (IDC Divisional Executive for Agro, Infrastructure and New Industries) ??? KEY NOTE ???Jacob Flewelling ???USDTA ??? PRESENTATION ??? Overview of USTDA study content ???Bertie Strydom (IDC Senior Project Development Manager) ??? Energy storage perspective by ESKOM ???SumayaNassiep(Acting General Manager ???Eskom ???



The surge in utility-scale storage development is anticipated to fuel this growth, with newly added capacity expected to hit 1.46GW/3.83GWh, marking a 35% increase from the previous year. This expansion is predominantly driven by the residential sector. Projections for New Installations of Energy Storage in South Africa.

Egypt, Morocco, Ethiopia, Tunisia, and South Africa are, respectively, countries leading in wind power technology, and solar energy technology was more advanced in North Africa and South Africa.

The Shanghai-based New Development Bank, formerly known as the BRICS Development Bank, has approved a loan of ZAR6bn ($400m) to Eskom Holdings for the establishment of a battery energy storage system comprising 360MW of distributed battery storage sites across four provinces of South Africa. The project, which will be the first of its ???

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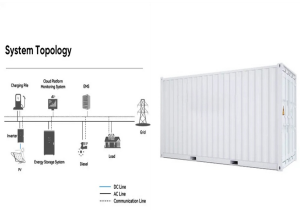
Renewable energy power producer Scatec has started building three co-located solar projects with 1.1GWh of energy storage in South Africa, after achieving financial close. Once operational the projects will have a total solar PV power of 540MW and battery storage capacity of 225MW/1,140MWh.



The South African Renewable Energy Masterplan (SAREM) articulates a vision, objectives and an action plan for South Africa to tap into these opportunities. It aims to leverage the rising demand for renewable energy and storage technologies, with a focus on solar energy, wind energy, lithium-ion battery and vanadium-based battery technologies, to

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