

Project Summary for Public Disclosure
(after approval of NDB financing)

Project Name	Battery Energy Storage Project
Country	The Republic of South Africa
Type	Sovereign
Area of Operation	Clean Energy & Energy Efficiency
Concept Approval Date	26 August 2019
Financing Approval Date	16 December 2019
Total Project Cost	USD 1,200 million
Initial Limit of NDB Financing	ZAR 6,000 million
Current Limit of NDB Financing	ZAR 6,000 million
Borrower	Eskom Holdings SOC, Ltd
Project Entity	Eskom Holdings SOC, Ltd
Project Context	<p>South Africa is transitioning toward a low carbon economy. The government has adopted the Integrated Resource Plan 2019 (IRP) and intends to add more than 20,000 MW of wind and solar energy generation capacity, with their share in the country's energy mix growing from the current 3% to 24% by 2030. Up to now, many renewable energy generators have been integrated into the power grid. However, as uncontrollable supply resources, the high output hours from wind and solar power do not coincide with the time of peak electricity consumption in a day, resulting in excess electricity during low demand hours and curtailment of production from renewable energy. This presents a challenge for effective utilization of the growing renewable generation capacity in South Africa's power sector. At the same time, South Africa is facing power shortages due to aging generating assets and delayed completion of new generation facilities. To meet the electricity demand, Eskom has to run diesel-based power plants during peak hours and implements load shedding to prevent failure of power grid. Therefore, meeting electricity peak demand is another immediate challenge for the country.</p>
Project Description	<p>The components of the Project include 1,440 MWh of distributed battery storage, 60 MW of solar photovoltaic generation facility, and application software to optimize the performance of distributed battery storage. The Project will be implemented at approximately 17 sites, located within or</p>

	adjacent to existing distribution substations of Eskom, across four provinces of South Africa.	
Project Objective	<p>The Battery Energy Storage Project (Project) provides a solution to address both challenges. The Project can store excess renewable energy in low demand periods and release the energy during peak hours, meeting the demand with energy from renewable resources and minimizing the use of fossil-fuel based generation. The Project will also reduce the power load on transmission network and therefore defer the investment needs for network augmentation. Besides, the Project can provide frequency support to the power grid.</p> <p>The benefits of the Project include:</p> <ol style="list-style-type: none"> 1. increased electricity supply of 525 GWh during peak demand hours, and 2. avoided CO2 emission of 90,000 tons every year. 	
Implementation Arrangements	The Project is planned to be implemented over 3 years by Eskom.	
Environmental and Social Information	The Project has been assigned category “B” in accordance with NDB’s Environmental and Social Framework (ESF). E&S impacts of the Project include potential leakage of battery electrolyte and soil contamination, potential pollution from waste battery disposal, loss of habitats and potential impacts to protected species at some sites. E&S risks and impacts will be mitigated by adherence to country system requirements.	
Financing	The total cost of the Project is estimated to be up to USD 1,200 million with contingencies and financing costs, etc. NDB will finance ZAR 6,000 million, accounting for about 33% of the total cost. The remaining balance will be financed by the World Bank, African Development Bank and Eskom.	
	Source of Fund	Amount (USD million)
	NDB	Up to 400
	Other Financiers and Eskom	800
Contacts	NDB	Borrower and Project Entity
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