



SOUTH AFRICA ESKOM BATTERY STORAGE PROGRAM

ESMAP Solar Learning Event 2019

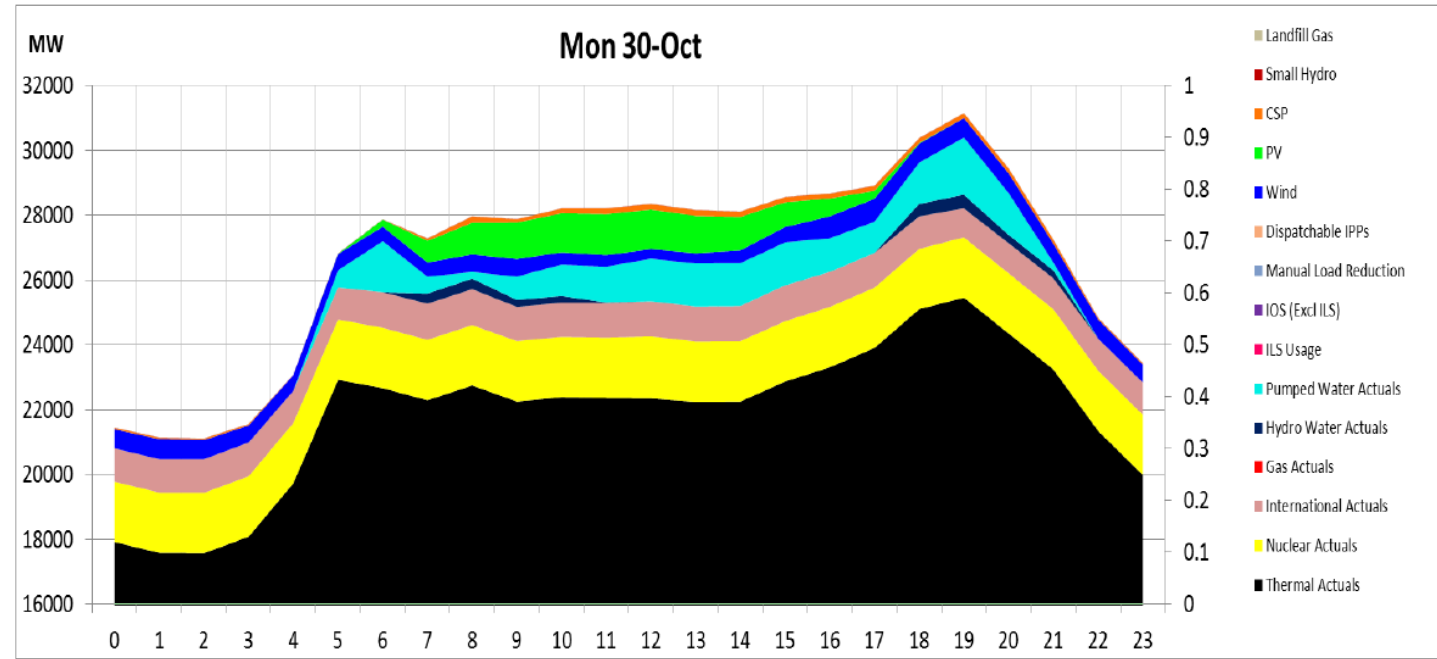
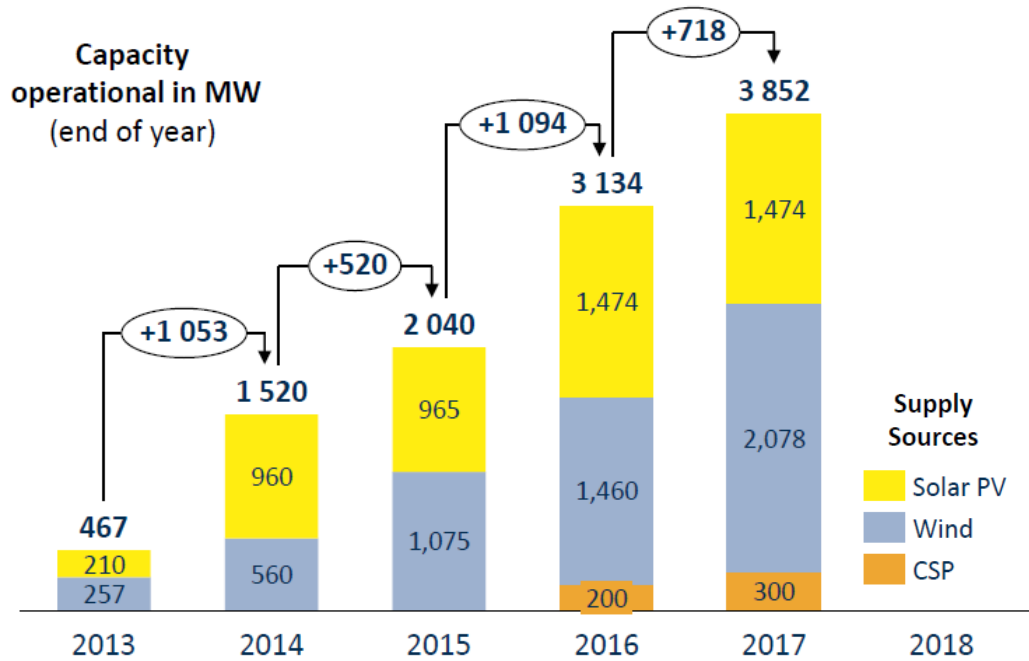
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World Bank
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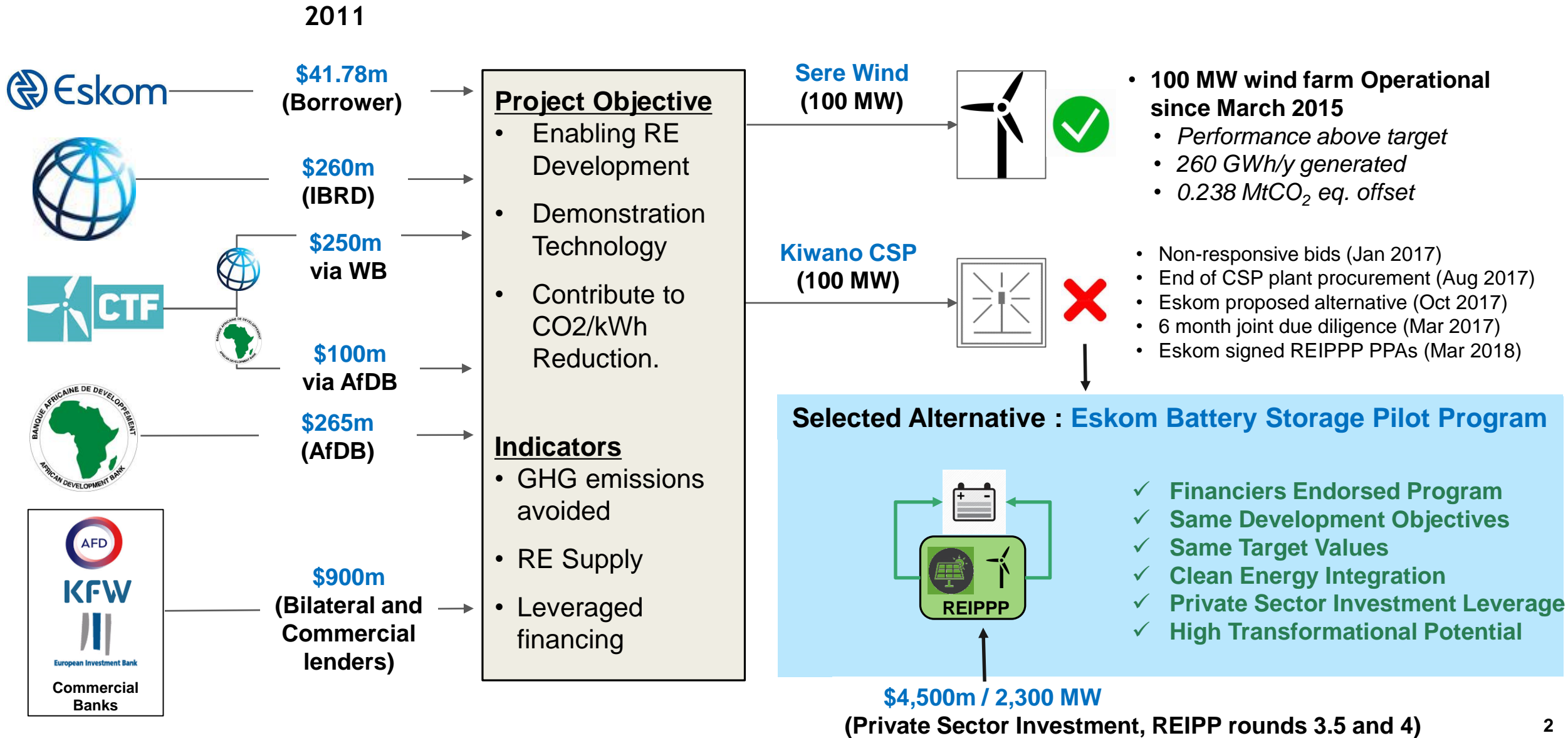
Eskom Early on Management of Increased Renewable Energy Capacity



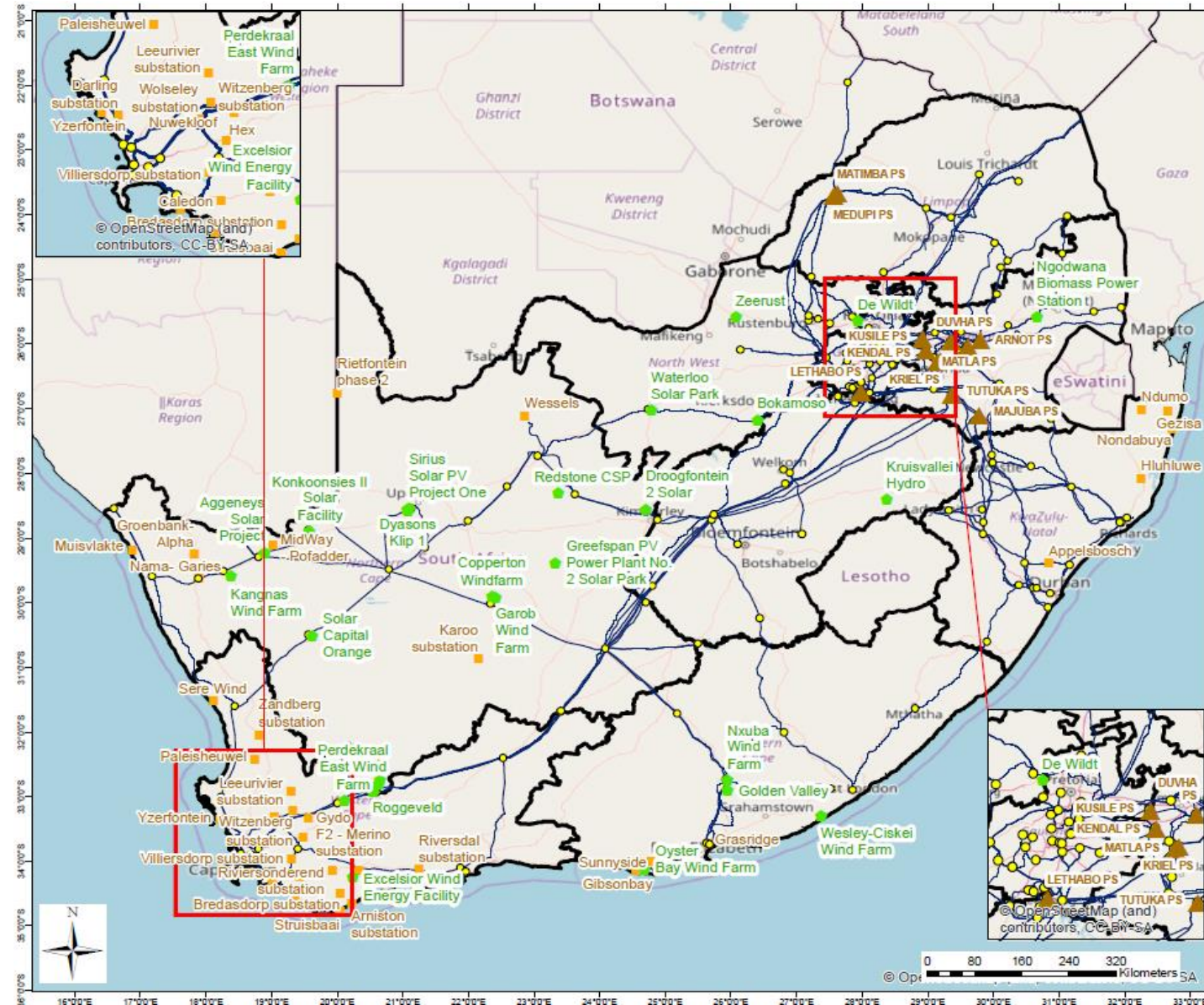
Eskom 5x200kW / 1,2MWh Experimentation Battery Site

Eskom Renewables Support Project

From CSP To Battery Storage

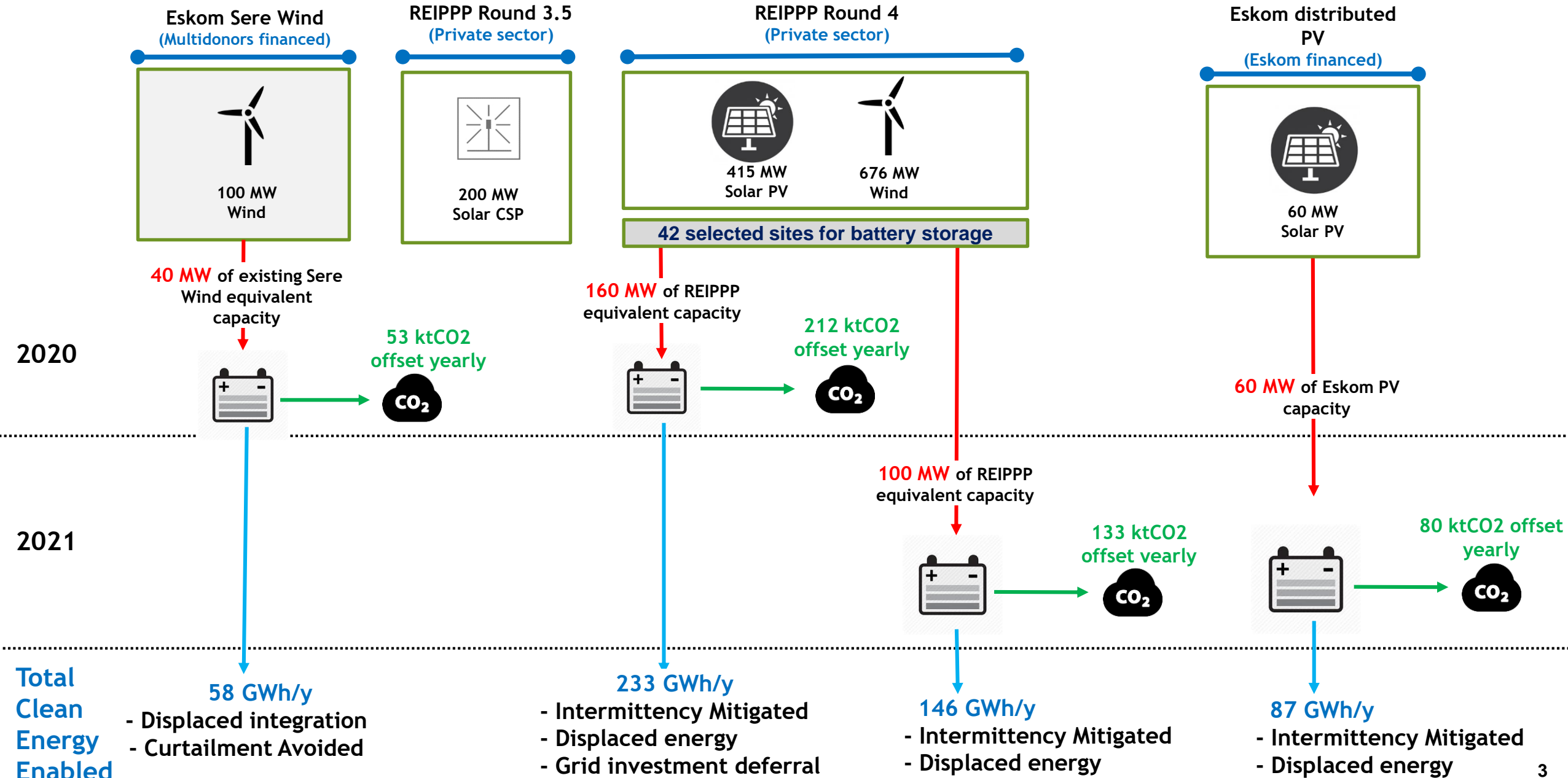


A Multi-Site / Multi-Purpose Battery Storage Demonstration Program



- Battery technology (in 2018) **more mature** than CSP technology (in 2011), but not yet at commercial scale ensuring viability
- **Technology agnostic** approach (solid-state Vs flow battery), function of the specific use and need.
- No new public investment in clean energy generation*: added renewable energy capacity is financed by the **private sector**.
- Supports South Africa's long term **Carbon Mitigation** strategy and **Universal Electricity Access** by 2025 objective.

Eskom Battery Storage Program Synopsis



South Africa Battery Program Transformational Potential

Demonstration effect of battery technology as THE tool for countries in Energy Transition

Eskom perspective

- From a conservative electricity producer to a **modern energy manager**
- Conjectural supply surplus, **good timing** to acquire tools and skills for SA's energy transition to a cleaner mix
- Replication of large-scale battery program at low voltage level to better integrate future municipal **rooftop solar** capacity is expected
- More flexibility and more dispatchable clean energy thanks to the batteries, allowing to **decommission old coal plants**

South Africa perspective

- In a period of economy recovery, **reliability** of electricity supply is critical to attract private investment (industry, manufacturing)
- Scale up of battery technology in power sector to complement rapid expansion of **variable renewable energy**
- **Vertical integration** in the battery storage value chain (mining, manufacturing, operation) feasible in South Africa

Africa region and Global perspective

- 5,000MW electrochemical batteries in operation worldwide, But **NO battery connected to the grid in all Africa**
- **Demonstration effect** in South Africa will enable variable renewable energy to expand faster in Africa, and in low income countries.
- Largest WB and AfDB operation on battery storage, mostly funded by CTF, this **flagship project** could serve as reference for many others.



Ngiyabonga!
(Thank You!)