

# Transmission Infrastructure Development Plans

CESA Infrastructure Forum

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# Loadshedding









- Loadshedding is the **single biggest constraint** on South Africa's economic growth.
- Eskom and Government are acting both to address the immediate crisis and to make load shedding a thing of the past.

## NECOM

- A dedicated National Energy Crisis Committee (**NECOM**) has been established comprising all government departments and Eskom, led by the Director-General in the Presidency, to implement this action plan.
- It reports directly to an Inter-Ministerial Committee comprising the Minister in the Presidency, the Minister of Mineral Resources and Energy, the Minister of Public Enterprises, the Minister of Finance, the Minister of Forestry, Fisheries and the Environment and the Minister of Trade, Industry and Competition.

## Workstream 1

focuses on improvements in the performance and availability of existing Eskom plant, working closely with Eskom, as well as **expanding and strengthening transmission infrastructure**.

## Workstream 2

focuses on cross-cutting policy, legal and regulatory issues and decision-making processes.

## Workstream 3

focuses on expediting the connection of generation capacity from existing and future procurement rounds, as well as on measures to enable private investment and facilitate small-scale embedded generation

## Workstream 4

focuses on enabling emergency procurement of electricity and maintenance.

## Workstream 5

focuses on improving demand management and ensuring implementation of energy efficiency and customer response measures.

## Workstream 6

oversees a coordinated plan by law enforcement agencies to address sabotage, theft and fraud at Eskom.

## Workstream 7

provides ongoing data and research support, including modelling the impact of measures to address the energy shortfall.

## Workstream 8

focuses on communicating the strategy to the public in a coherent and effective manner.

## Workstream 9

will focus on addressing challenges at distribution level, including enabling wheeling of electricity across the grid.

# Presidential Plan to end loadshedding

EAF	<p>Fix Eskom and improve the availability of <b>existing supply</b></p> <p><i>Implement reliability maintenance. Sustainable solution to deal with Eskom's debt. Just Energy Transition. Address sabotage, theft and fraud at Eskom.</i></p>
Private investment	<p>Enable and <b>accelerate private investment</b> in generation capacity</p> <p><i>Licensing threshold for new generation projects will be removed entirely. Ease regulatory hurdles and facilitate investment in new generation capacity. Release of land adjacent to its existing power stations in Mpumalanga for private investment in renewable energy projects.</i></p>
Renewables, Gas, BESS	<p><b>Accelerate procurement</b> of new capacity from renewables, gas and battery storage</p> <p><i>Massive rollout of renewable energy. Battery Energy Storage Systems (BESS) Programme. Release of further bid windows for renewable energy, gas and battery storage will be brought forward, and the amount of new capacity procured will be increased. IRP 2019 will be reviewed and updated.</i></p>
Rooftop Solar	<p>Unleash <b>businesses and households</b> to invest in rooftop solar</p> <p><i>Eskom will develop a feed-in tariff for small-scale embedded generators. Tax incentives for residential and commercial.</i></p>
Energy security	<p>Fundamentally <b>transform the electricity sector</b> to achieve long-term energy security</p> <p><i>Independent Transmission company. Establish a <b>competitive</b> electricity market will be expedited through the finalization of the Electricity Regulation Amendment Bill. Allow multiple generators (both private and state-owned) to compete on an equal footing</i></p>

1

Deal with immediate loadshedding issues, procurement challenges, eliminate corruption and deliver Eskom's mandate of ensuring reliable electricity supply in medium and long term.

2

Focus on generation recovery plan and reliability maintenance recovery to improve plant performance as well as initiatives under the National Energy Crisis Committee, including efforts to secure additional generation capacity.

3

Address findings from Zondo Commission, with key focus on civil recoveries; consequence management related to suppliers, former employees and former directors, in-depth risk assessment and review of policies and procedures to eradicate fraud and corruption.

4

Reduction in debt and improvement in EBITDA margin to be able to achieve independent financial sustainability; financial results will be positively affected by improvement in operational performance.

5

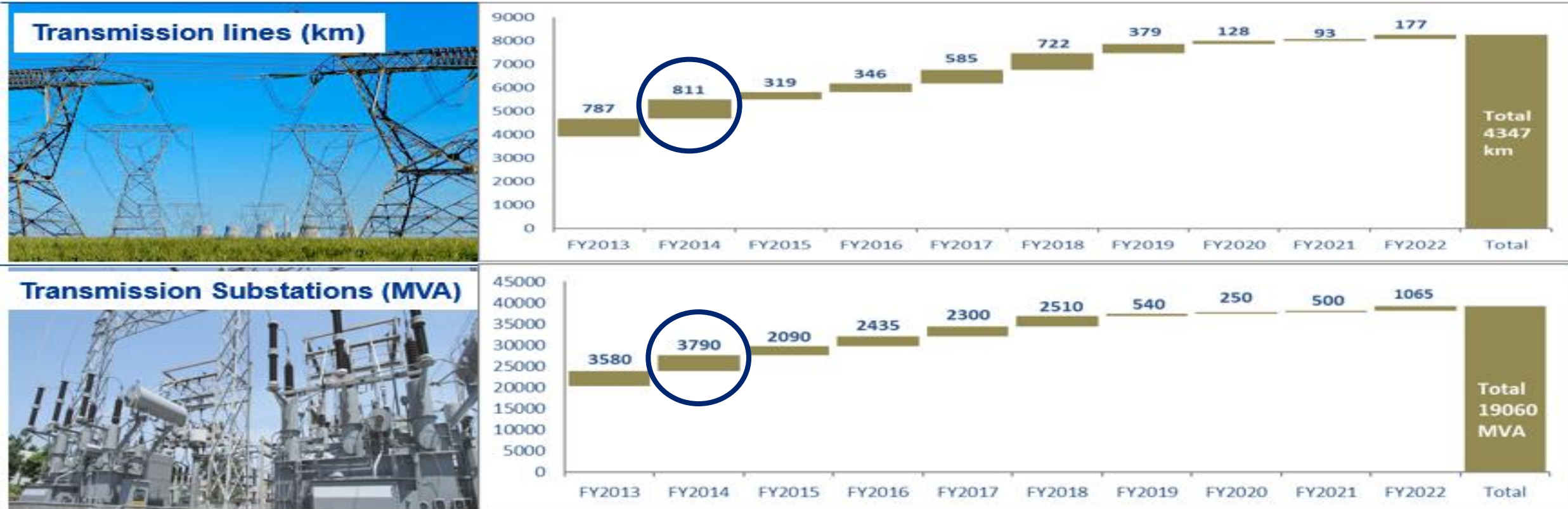
Achieve additional capacity of 4,000MW to 6,000MW to grid to avoid loadshedding.

6

Migration towards a cost-reflective tariff. This, combined with cost efficiencies, improving repayment of municipal debt and reducing Eskom's debt levels, will restore sustainability.

# 10-year Historical investments in Transmission

~ 4,347 km of Transmission lines, and ~19 GVA of transformation capacity

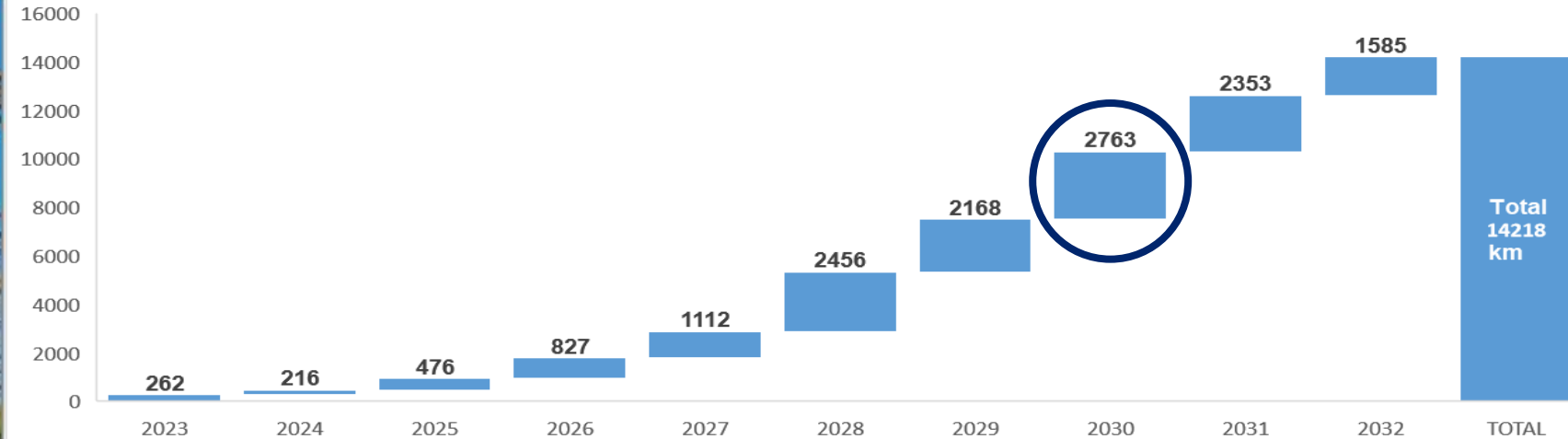




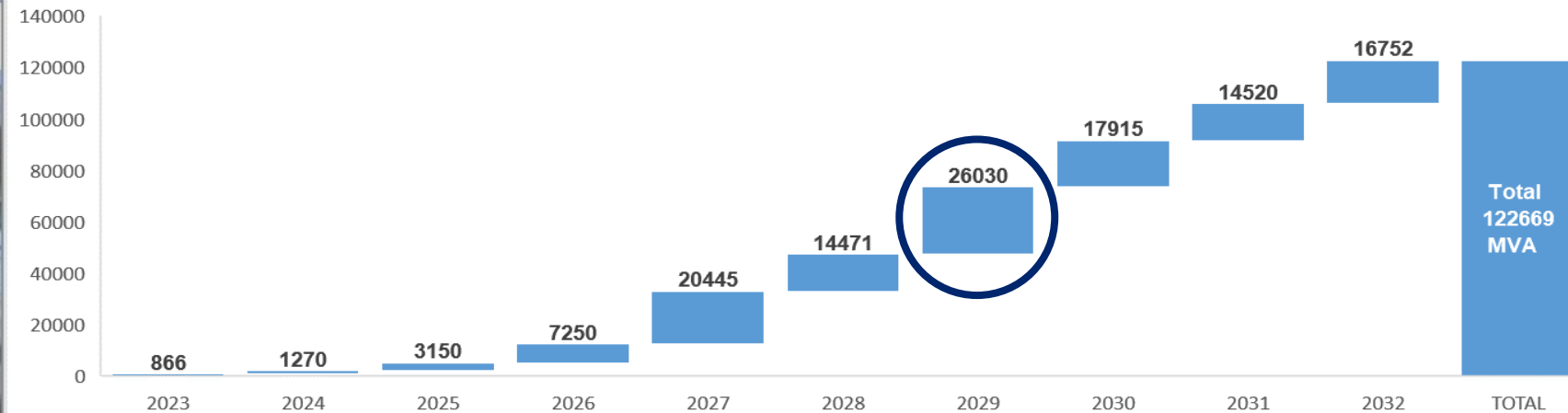
# Planned 10-year Investments in Transmission

~ 14,218 km of Transmission lines, and ~ 122 GVA of transformation capacity

Transmission lines (km)



Transmission Substations (MVA)



## Planning

- Planning and release of URSs and Reports
- 80% completed of planning reports and URS for next 3 years' projects (March 2023)
  - 50% completed of planning reports and URS of next 5 years' projects (July 2023)

## Owners' Engineer (OE)

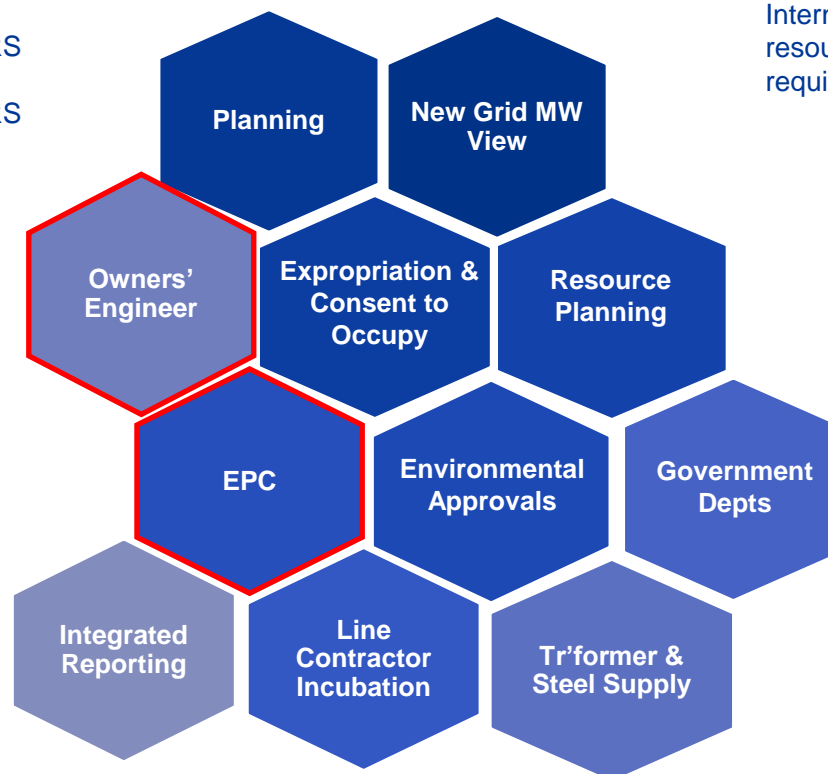
**Owners' Engineer (OE)** contract to boost FEED issued 6 March 2023. Planned award Aug '23

## EPC

**Lines** and **Substation EPC** contracts to boost delivery of projects . Planned award dates March '24 and Apr '24.

## Integrated Reporting

Integrated reporting of TDP projects, 'Cradle to the Grave' – providing programme status and physicals; Progress - all 844 schedules now captured in one scheduling tool; now fixing baselining. Analytics is next



**Line Contractor Incubation**  
Implementation of **Line Contractor incubation** to develop the local skills ... additional **200km** per year capacity

## Resource Planning

Internal resource plan review due Mar '31; external resource requirements completed. More than 82/84 (98%) required commodity and service contracts are in place.

## Environmental Approvals

DFFE improved process; discussing further optimization of process for non-solar projects and projects outside designated zones. Turnaround reduced from 107 to 57 days.

## Expropriation & Consent to Occupy

Ministerial expropriation letters delivered and expropriation effective from 01 February '23; more since then; access to 8 government properties signed by DPWI minister; more since then

## Government Depts

Engagements with the Government and NatJoints for alignment on the support needed to deliver the program

## Transformer & Steel Supply

Accredited 14 additional factories; exemption of restrictions for 46 trfs granted; 101 trfs tabled for approval to issue under new improved regulations (no exemptions). New PPR effective 16 Jan 2023 give more flexibility.



# Transmission EHV Lines: Voltages (kV) 275, 400 & 765







Substation columns and beams for conductor and equipment support

- Transmission has finalized its TDP2022, which indicates a **350%** to **500%** increase in infrastructure additions compared to current delivery rates.

## CESA members opportunities:

As part of our step change initiatives to increase capacity to deliver projects, Eskom has:

- i. decided to issue **Owner's Engineer** to the market that will allow services providers to provide designs, project management and quality assurance support during all stages of the project lifecycle for some of the projects.
- ii. resolved to issue engineer, procurement, and construct (**EPC**) contracts to the market in the next few months which will create opportunities for service providers to coordinate and undertake all design, procurement and construction work for some of the projects.



Back up slides

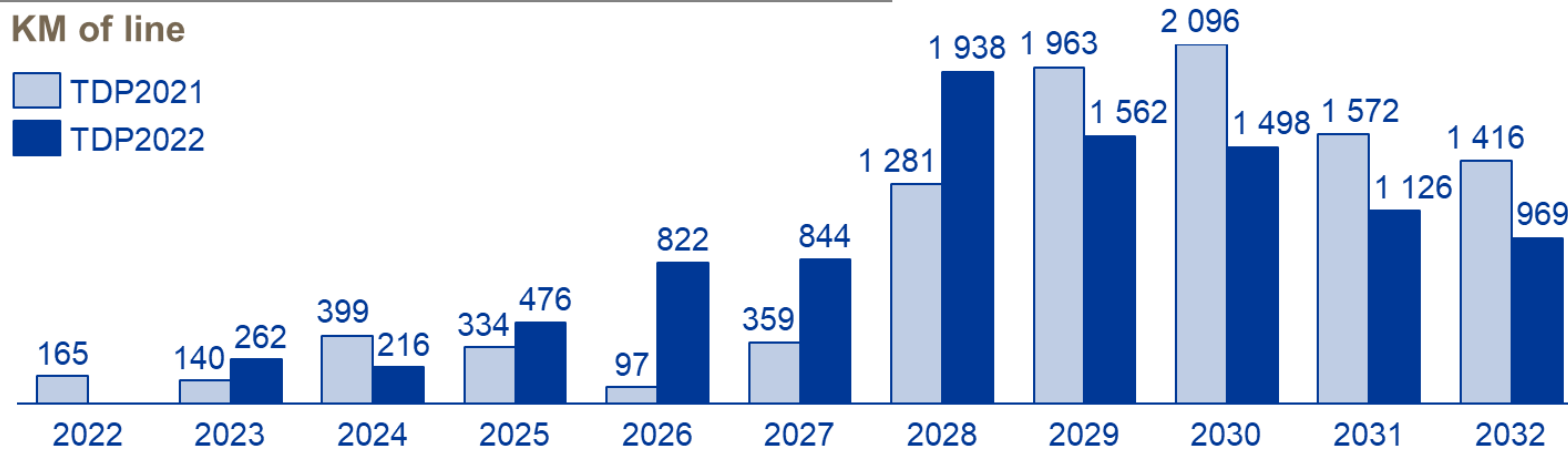


# \*backup The TDP has been updated to factor in the changes in the future outlook

## TDP 2021 vs 2022 transmission line requirements

### KM of line

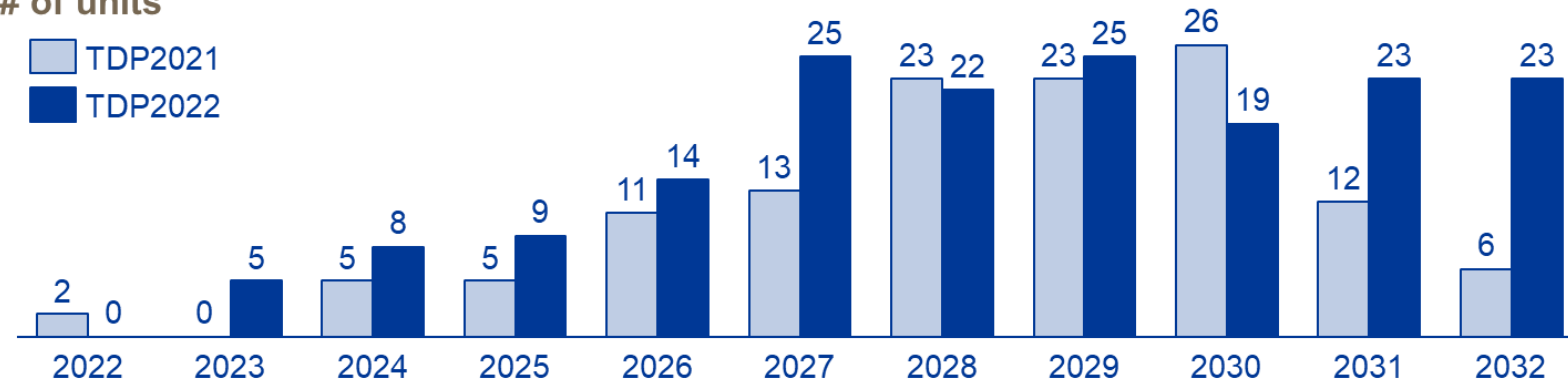
■ TDP2021  
■ TDP2022



## TDP 2021 vs 2022 transformers requirements

### # of units

■ TDP2021  
■ TDP2022



- TDP 2022 has been revised to factor in new capacity requirements in line with 2035 strategy
- Numbers illustrated based on a **constructable plan** which requires (2023-2032):
  - 9800 km of transmission line
  - 128 transformers
- Unconstrained requirements are ~14200km and 170 transformers, therefore 765kV corridors and reliability projects may be deferred
- **Risks to be managed include:**
  - Acquisition of servitudes
  - Constrained resource capacity in the country across the engineering, procurement and construction value chain
  - Capex requirements especially in the latter 5 years of the plan



Thank you