

# Distribution System Operator and Energy Trader at the heart of the energy transition for the future operating model

**Presented by:** Monde Bala (Distribution Group Executive)

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*Why investment in the Distribution business is required for the future energy transition*

**Discussion Paper - 2035 Vision**

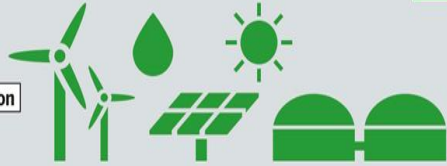
# Globally, the electricity value chain is evolving and Eskom needs to adapt to achieve its strategic objectives

yesterday



few large power plants

production



many small power producers

tomorrow



centralized, mostly national

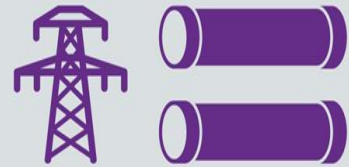
market



decentralized, ignoring boundaries

## Implications to Eskom

- Reduce fossil fuel generation through accelerated shut down/repurposing
- Greater efficiencies required to remain competitive
- Implementation of an unbundled tariff and establishment of Market Operator
- Move away from conventional electricity systems, planning and operating structures
- Greater investment in grid infrastructure
- Embrace and plan for distributed generation
- Introduction of Independent Transmission System Operator
- Establishment of Distribution System Operator (DSO)
- Implementation of a wheeling tariff
- Modernisation of the grid
- Use of digital solutions to gain financial and operational improvements
- Enable energy consumers to make more informed decisions

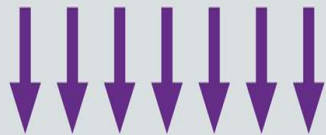


based on large power lines and pipelines

transmission



including small-scale transmission and regional supply compensation



top to bottom

distribution



both directions



passive, only paying

consumer



active, participating in the system

Step

Structure

Vertically integrated Utility

DPE

Eskom

GX

TX

DX

Functional Separation

DPE

Eskom

GX

TX

DX

Legal separation (LTSO)

DPE

Eskom

GX

TX

DX

# Overview to Distribution Strategy embracing the transformation of the Electricity Industry



The **Eskom Distribution Strategy** is aligned to a just energy transition, supporting the **IRP 2019** and South Africa's aspiration for a **greener future**



Distribution utilities will require a **modern, flexible and smarter grid** to facilitate a liberalised energy market and the **decentralisation and decarbonisation of energy**



**Eskom Distribution** and the distribution industry therefore requires amendment of the **ERA** to support licensing of the **DSO** with energy trading and aggregation function, the establishment of a market to enable trading and the establishment of **Distributed Energy Resources** (incl. BESS and SSEG)



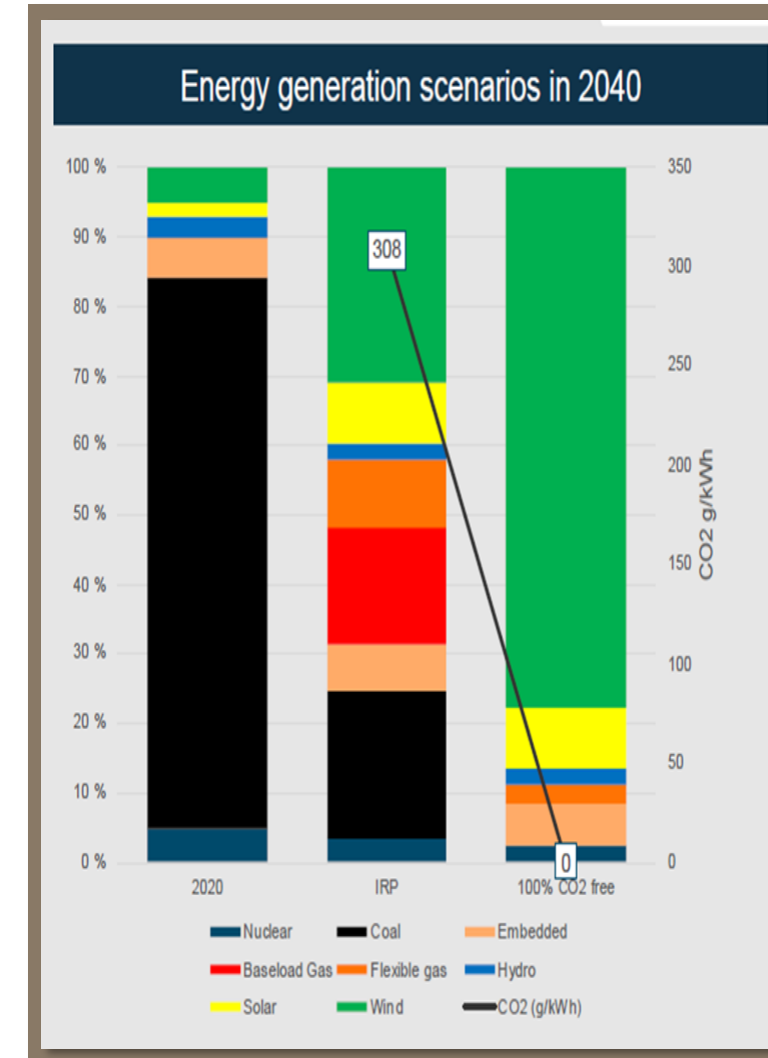
**Eskom Distribution** also requires support for the establishment of **SPVs** to pursue unregulated business



**Eskom Distribution** also requires support and approval to utilise **INEP** funding for the application of microgrids for electrification and to retrofit **rooftop PV** in areas with high non technical losses as an alternative to mass disconnection which may regress the **UAP**



The **Distribution System Operator (DSO)** and **Distribution Energy Trader (DET)** capability is imperative to enable with the **JET** transition, support the IRP determination and incentives customers, prosumers and distributed energy resources to participate in energy market



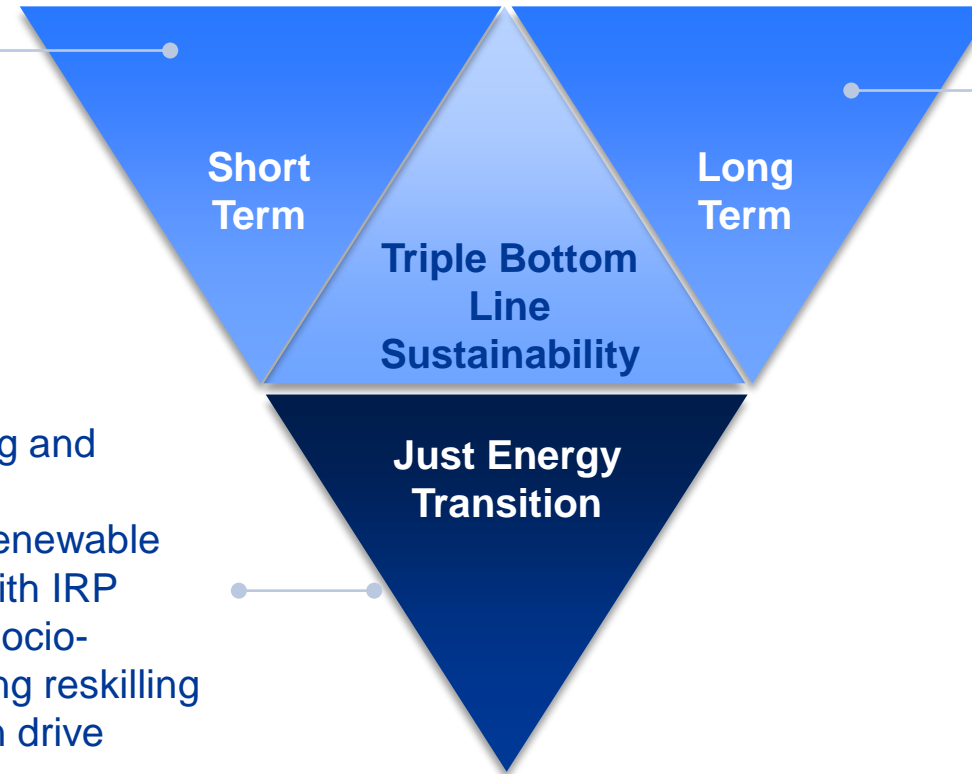
# The Just Energy Transition provides an opportunity for Eskom and the country to pivot towards a more sustainable electricity supply industry

## Eskom Turnaround plan

- Strengthen Balance sheet
- Improve Income statement
- Build High Performing Culture
- Improve Operations
- Drive restructuring

## JET

- Accelerate the repurposing and repowering of stations
- Actively pursue share in renewable energy allocation in line with IRP
- Implement an integrated socio-economic strategy including reskilling
- Smart industrial policy can drive manufacturing investment



## Transitioned utility

- Achieve net zero emissions by 2050 factoring in the need to continuously nurture economic growth
- Ensure effective and equitable access to electricity by modernizing our power system
- Facilitate competitive energy industry for the future
- Financially and operationally stable

## Numerous counterparties have indicated interest to support the Eskom JET<sup>1</sup>

*"As discussed, we are interested to support Eskom on this important agenda"*



*"...we would like to express our interest to support Eskom in the repurposing of such coal fired power stations..."*



*"AFD is keen to accompany Eskom in the decommissioning and repurposing of some of its coal fired power stations..."*



*"...setting a clear timeline of our joint work on this project would be beneficial for both NDB and Eskom to understand expectations of the parties..."*

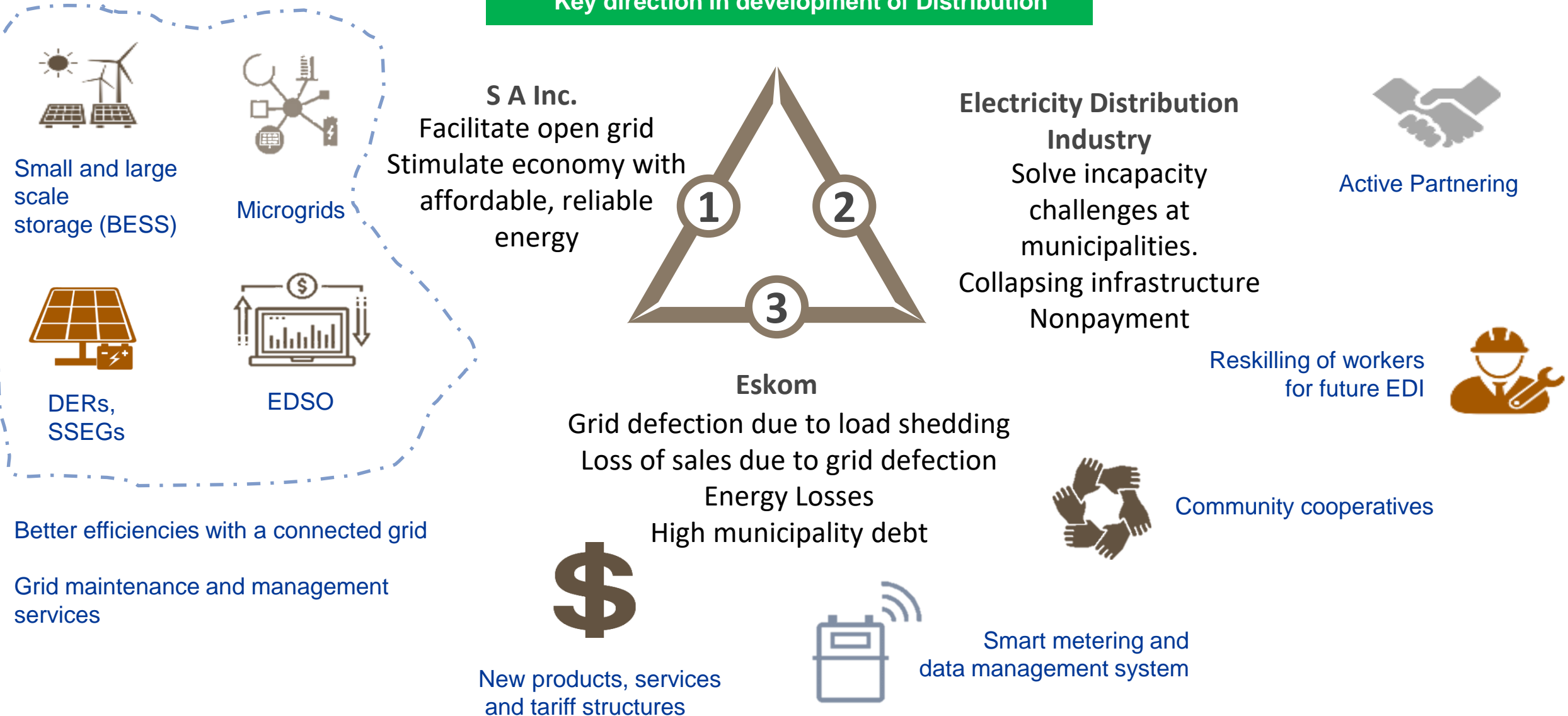


<sup>1</sup> DFIs not showing interest in debt stock and debt re-financing

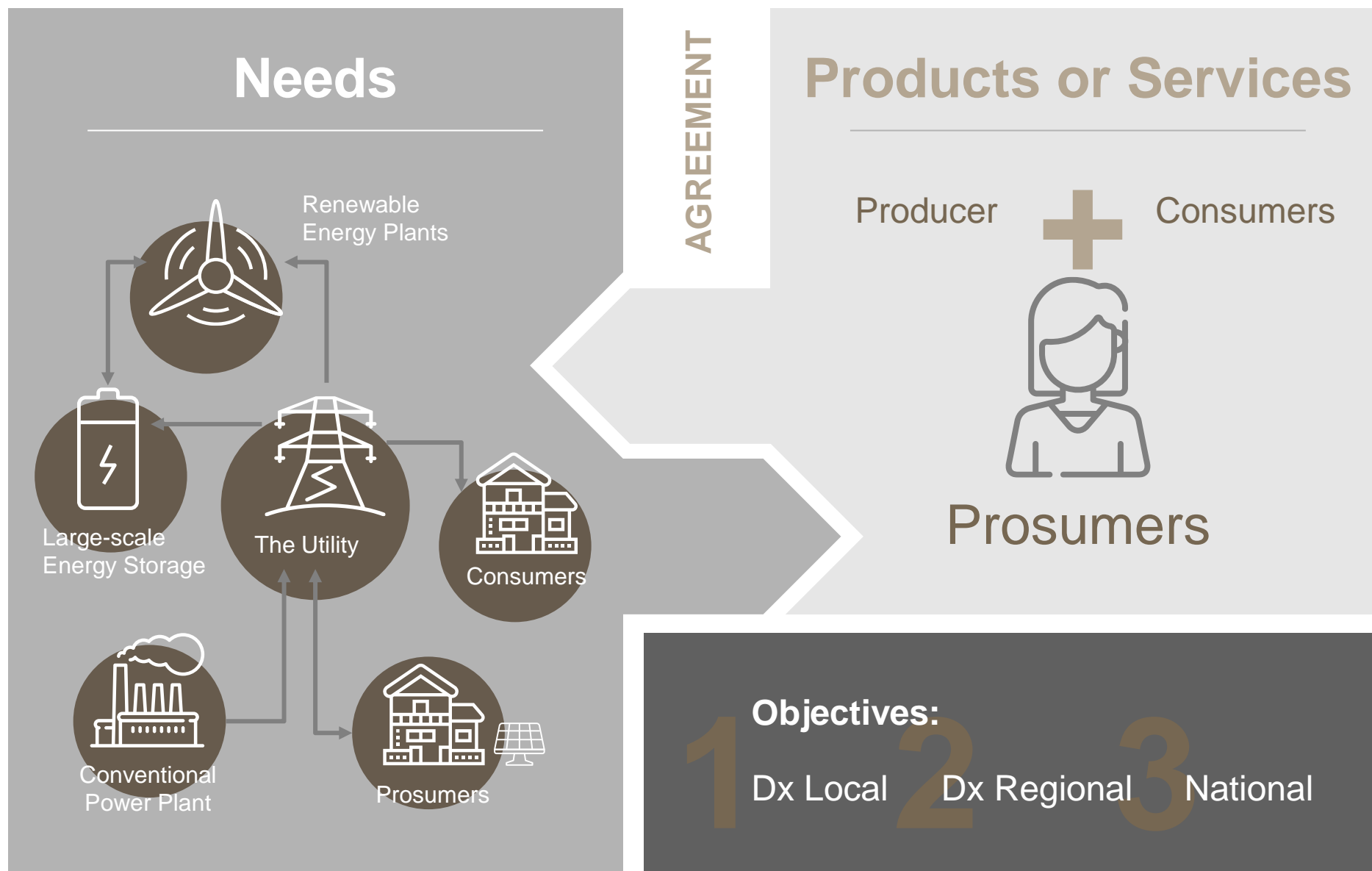


# The proposed Eskom Distribution Business assisting to solve industry challenges

## Key direction in development of Distribution



# Mutual Benefits (Win – Win Relationship)



# Three main objectives to meet Distribution needs

Eskom currently have **explored**, **piloted** and / or **implemented** initiatives that are classified within the following categories:



## Demand Management

Reducing electricity demand during times of generation shortage

Increasing sales during times of surplus

Changing the time of day of consumption to optimise supply costs



## Supply Management

Maximise integration and hosting of DERs

Additional capacity in order to alleviate supply constraints



## Supporting Initiatives

Key enablers to manage and operate Dx Networks to accommodate Flexible Energy Services

Functions required to continuously ensure a reliable, secure and quality of supply to grid users



Demand  
(Load)



Supply  
(Generation)

01

### Local objective:

Servicing a Distribution need at the local level

02

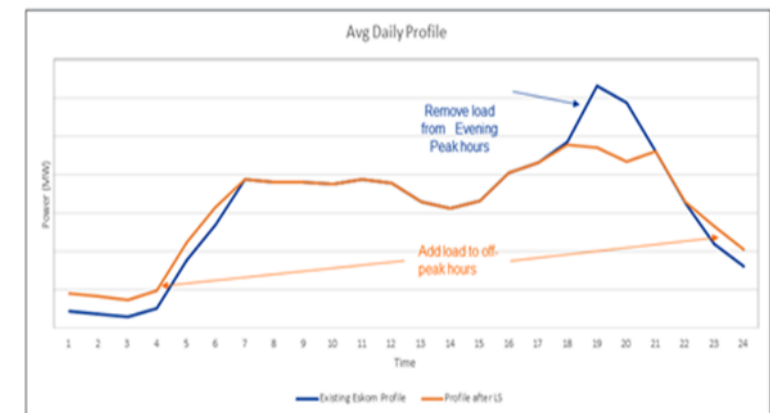
### Regional objective:

Servicing a Distribution need at the regional level

03

### National objective:

Servicing a National need for the mismatch between supply and demand challenges



# Concluding remarks - SA Distributor will be at the epicentre of the Just Energy Transition

- SA Distributor and resellers will lose volumes of energy sales, but **opportunities exist to integrate and co ordinate** all the prosumers, customers, Distributed Energy Resources (DERs) & energy producers.
- Distribution **smart grid** is a modernised electricity network and systems **enabling an active management of distribution energy grid.**
- DERs will initially be uncoordinated but through grid modernisation (investment) and the establishment of the **Distribution System Operator (DSO)** a **burgeoning new economy** will unfold for the Distribution industry.
- **Integration of IPPs, DERs less than 100MW and SSEG is the first step of the DER integration strategy.**
- Eskom Distribution has an approved SSEG tariff which is focused on **enabling the prosumer and provides a win-win approach for both utility and customer.**
- The adjustment in threshold focused (**< 100 MW**) **for own use and in future it may serve local, regional or national needs.**
- Eskom Distribution is in the process of establishing its **System Operator with Energy Aggregation and Trading capability**

**Policy framework outlining future electricity distribution industry** require enabling amendments to ERA and license **to unlock this future green utility economy.**



**Thank you.**  
**Questions**

