



ROADMAP FOR ESKOM IN A REFORMED ELECTRICITY SUPPLY INDUSTRY



public enterprises

Department:
Public Enterprises
REPUBLIC OF SOUTH AFRICA



Building an Electricity Supply Industry of the Future

- **IRP gives a basis for energy mix guided by national endowment, commitment to climate change mitigation and the use of cleaner energy sources**
- **The Paper sets out the roadmap for the next year and beyond**
- **As a consequence, this will impact on the structure of the electricity supply industry**
- **We will continue to rely on Eskom for base load**
- **We have no option but to fix Eskom's current operational, financial, structural challenges**
- **At the same time Eskom must commence the journey towards being a reliable, efficient and low cost electricity provider well into the future**

The burning platform for Restructuring Eskom

1. A single entity creates large risk: all eggs in one basket – no diversification
2. Inability to ensure electricity supply security at an efficient cost
3. Eskom poses a great risk to the national fiscus through inefficient operations and other factors
4. Business model is outdated and based on the era of excess electricity supply and captive customers
5. Eskom is too large to manage, and systemically too important which incentivizes management not to change (moral hazard)
6. Lack of transparency, agility, operational excellence, wide spread inefficiencies and lack of accountability and consequence management
7. R440 bn debt (15% of SA GDP with high default risk)
8. Moral hazard: 2007, 2015 and 2019 bailouts, no fundamental operational changes
9. Loss of management and engineering skills
10. Monopolistic nature has prevented innovation and ability to deal with sector disruptions

Eskom of the future

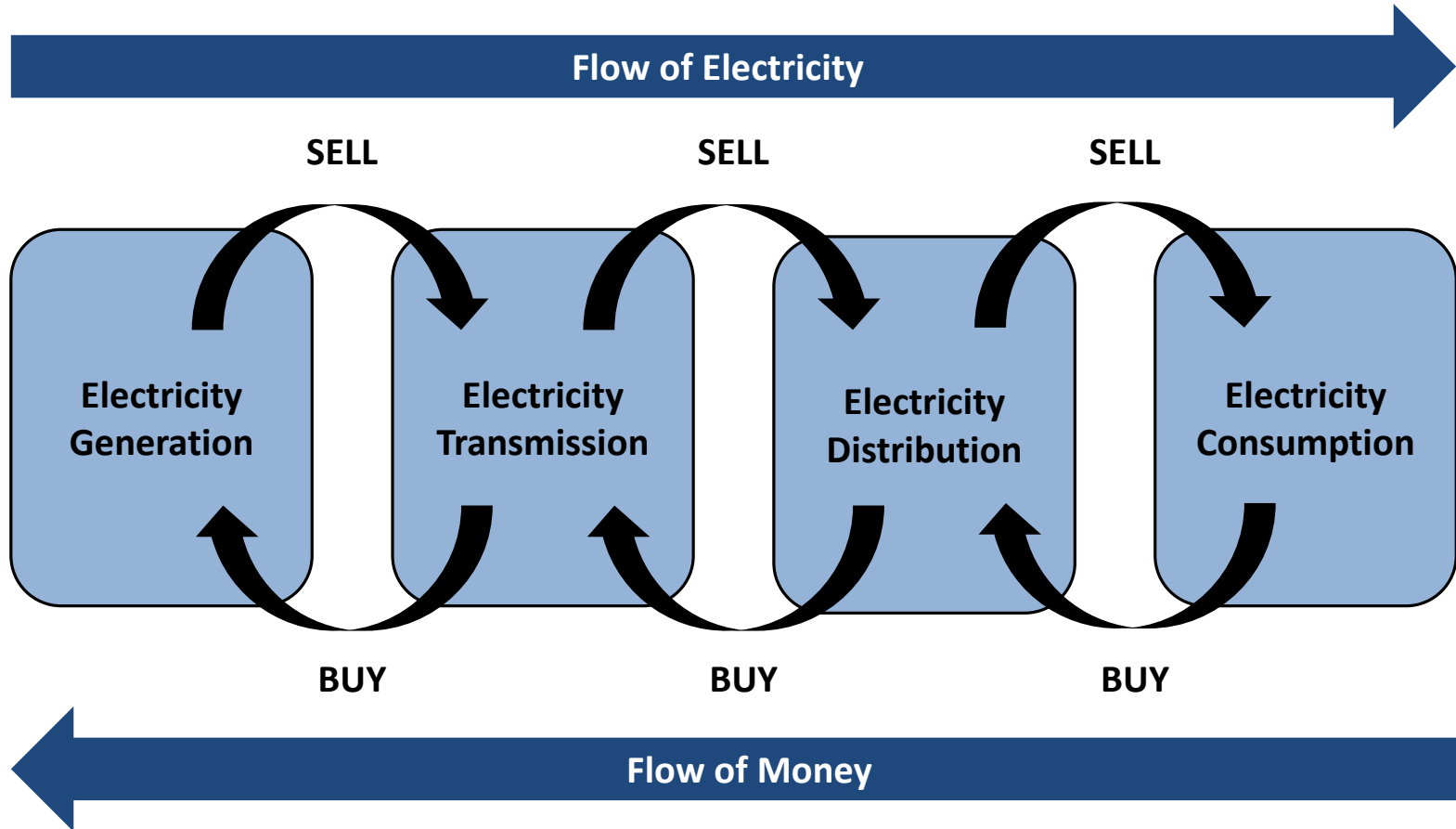
- The Eskom of the Future will have 3 subsidiaries, Generation, Transmission, Distribution. Including the rationalisation of irrelevant subsidiaries (Eskom Finance Company and Enterprises)
- Initiate the restructuring process with the creation of the transmission subsidiary
- Do more detailed planning on creating competitive clusters of power stations within Eskom generation
- Continue efforts to substantially upgrade generation operations and available megawatts
- Implement the cost saving measures with greater urgency
- A concomitant resolution of the Eskom debt
- The distribution function requires further discussion given municipalities reliance on electricity sales
- Reconfigure the board of Eskom Holdings with skilled individuals appropriate to the tasks ahead; and
- appoint a new CEO
- Appoint an interim board for the Transmission Entity

Resolving Eskom Operations

- **Strengthen the Generation recovery plan**
 - Disciplined power station management
 - Excellence in maintenance and repairs
 - Profit and loss details of each power station
- **Keep breakdown below 9500MW (summer plan)**
 - Reduce risk of load shedding by reducing levels of breakdown / outages
 - Ministerial Technical Review Team(MTRT) has been re-engaged to provide close oversight
 - MTRT has visited 5 power Stations in the last week, report due Friday
- **DMRE to procure additional 2000 MW to stabilize system**
 - Options being considered on the most cost efficient and quickest way to add capacity

Electricity Value Chain

This is how the production, transmission, reticulation and selling of electricity occurs; it is of specific importance for Eskom to get the functional, operational and financial interfaces aligned to the new Business Model



Eskom currently has 5 key challenges

Business Model/ Structural



- Lack of transparency,
- Lack of competition, High inefficiencies
- Very systemic in the economy (fiscal, energy security)
- Moral hazard: too big to fail

Operational



- Perpetual load shedding
- Inadequate Maintenance
- Poor New build performance
- Poor procurement practices
- Delays in MES compliance

Financial



- Debt of R440 billion
- Munic & Soweto debt at R35 billion*
- High diesel, coal, new build cost

Governance



- Governance and management failings
- Lack of accountability
- State capture

Climate Change



- Heavy reliance on fossil fuels
- Requirement to comply with the Minimum Emissions Standard
- Energy Transition

The South African Energy roadmap is driven primarily by the Integrated Resource Plan (IRP)

IRP Objectives

- Guide the development of energy policy and set regulations for the sector
- Guide the selection of appropriate technologies to meet demand
- Guide investment in the development of electricity infrastructure
- Promote universal access, affordability and environmental sustainability

Main Principle

Ensuring electricity security by closing the electricity gap in the short to long term; and dealing with the energy mix and diversification.

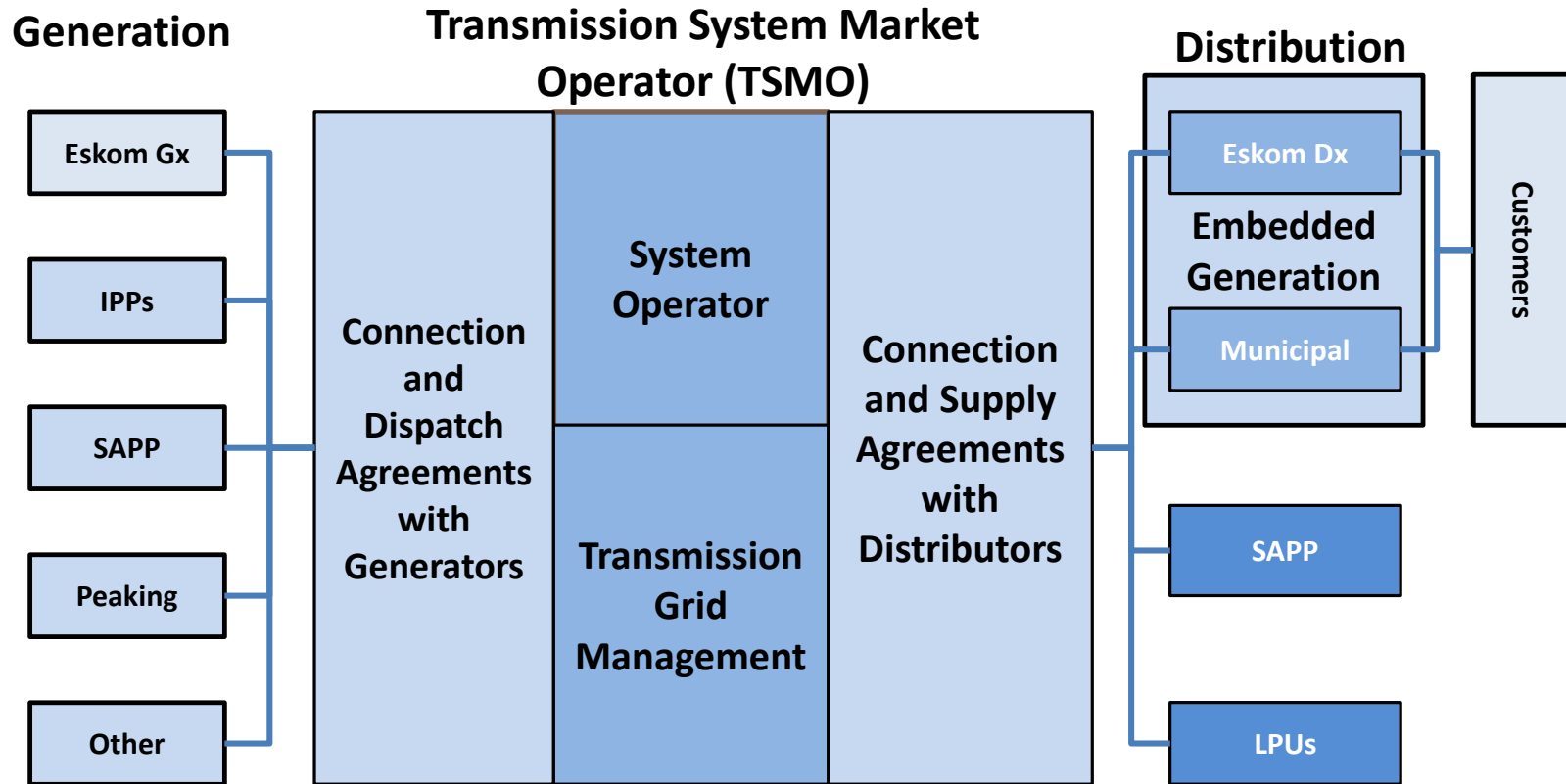
Integrated Resource Plan (IRP) Intentions

- 1 Increase the share of renewable energy capacity** to approximately 40% by 2030
- 2 Addition** of other forms of **clean energy, including hydro and nuclear.**
- 3 The closure of existing power stations** according to their stated de-commissioning schedules.
- 4 Just Transition**

The IRP 2019

Recommended Plan IRP 2019	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV		Wind	CSP	Gas & Diesel	Other (Distributed Generation, CoGen,Biomass,Landfill)
Current Base	37149		1860	2100	2912	1474		1980	300	3830	499
2019	2155	-2373						244	300		Allocation to the extent of the short term capacity and energy gap
2020	1433	-557				114		300			
2021	1433	-1403				300		818			
2022	711	-844			513	400	1000	1600			
2023	750	-555				1000		1600			500
2024			1860					1600		1000	500
2025						1000		1600			500
2026		-1219						1600			500
2027	750	-847						1600		2000	500
2028		-475				1000		1600			500
2029		-1694			1575	1000		1600			500
2030		-1050		2500		1000		1600			500
TOTAL INSTALLED CAPACITY by 2030 (MW)	33364		1860	4600	5000	8288		17742	600	6380	
% Total Installed Capacity (% of MW)	43		2.36	5.84	6.35	10.52		22.53	0.76	8.1	
% Annual Energy Contribution (% of MWh)	58.8		4.5	8.4	1.2	6.3		17.8	0.6	1.3	
	Installed Capacity										
	Committed/ Already Contracted Capacity										
	Capacity Decommissioned										
	New Additional Capacity										
	Extension of Koeberg Plant life										
	Distributed Generation Capacity for own use										

Reformed Electricity Supply Industry



SAPP - South African Power Pool

LPU - Large Power User

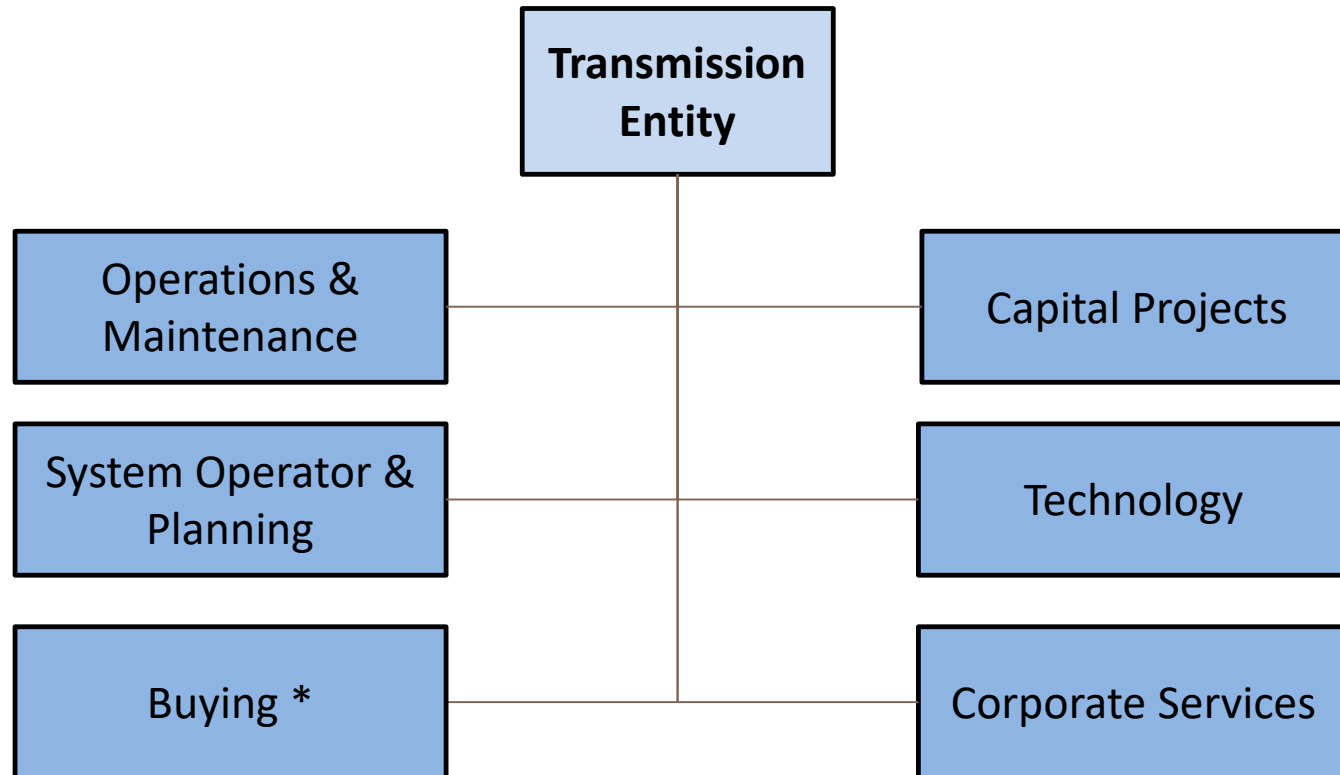
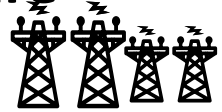
IPPs – Independent Power Producers

Embedded Generation – household / business own generation such as rooftop solar

Gx – Eskom Generation entity

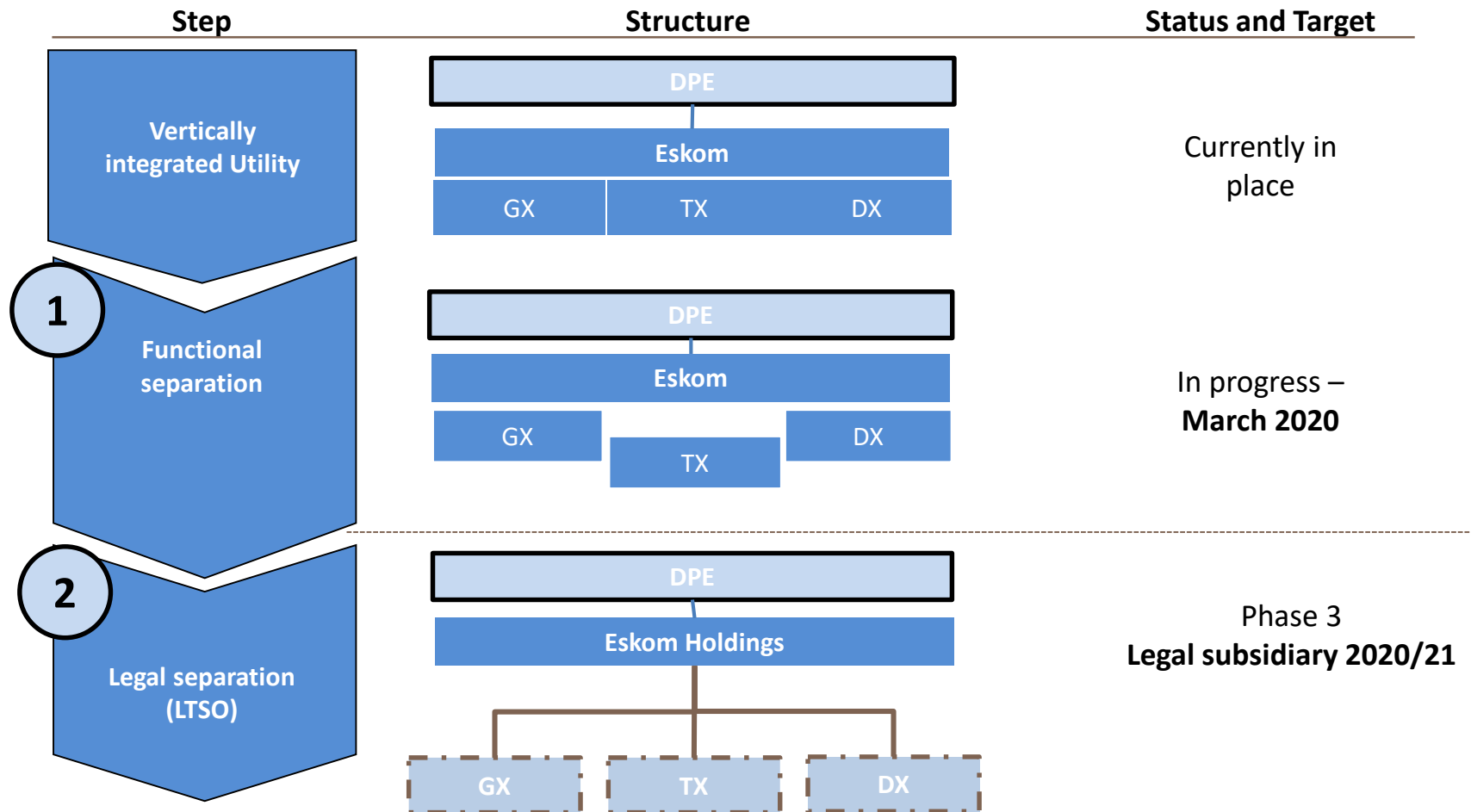
Dx – Eskom Distribution entity

Proposed Transmission Entity (TE) Operating Structure



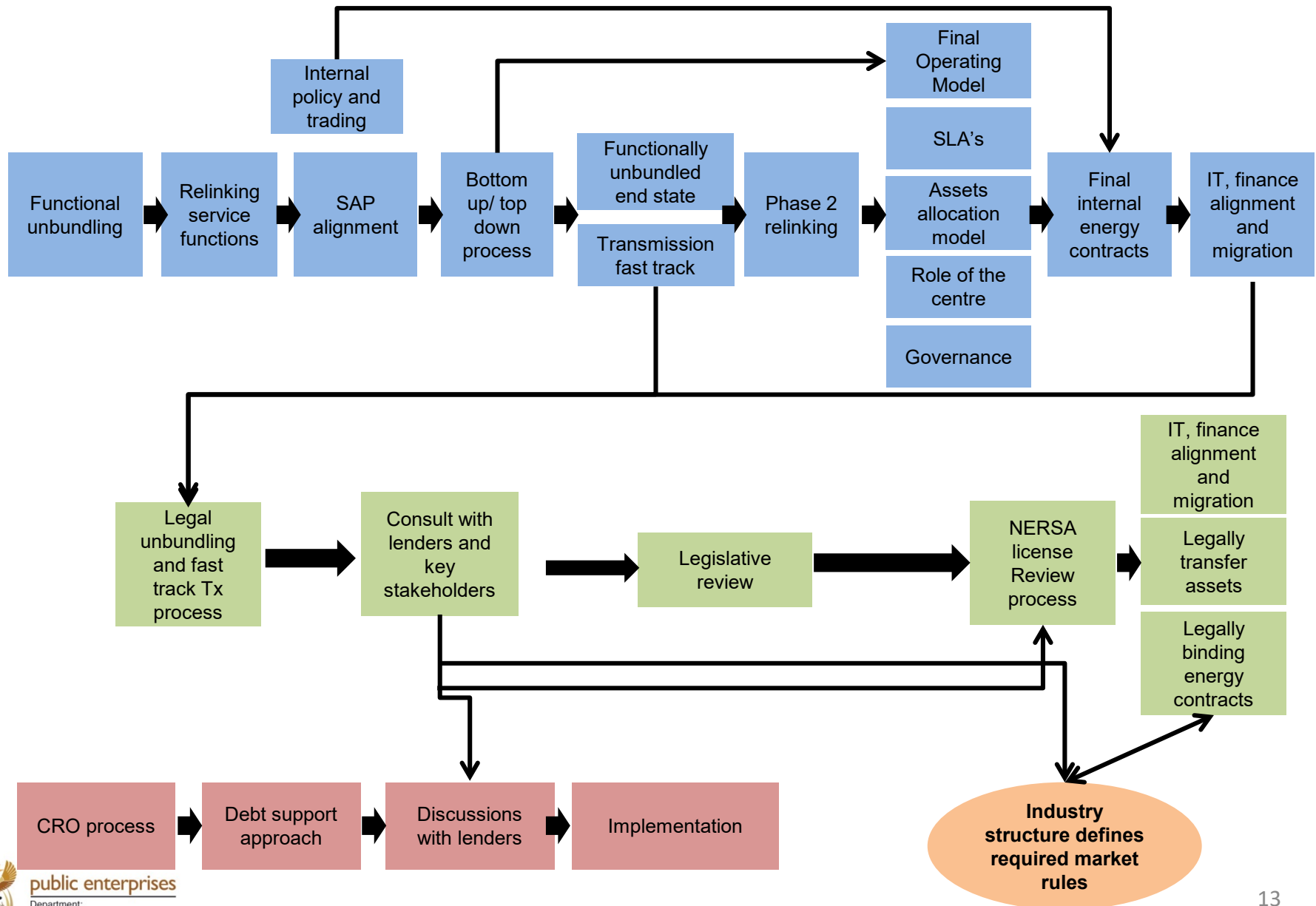
*Short and long term contracts with existing electricity generators

The process for the restructuring of Eskom and the ESI

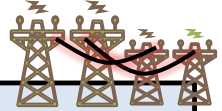


Proposed appointment of Interim Transmission Board to drive restructuring

Detailed Restructuring Process



The formation of a separated Transmission Entity (TE) under Eskom Holdings



Core Functions of Tx

Transmission Network Ownership

TE will be a 100% Eskom owned company to ensure the effective functioning, operation and development of the national transmission network

Transmission Grid Management

Operate and ensure adequate investments into the transmission grid

System operator

Manage the security of the power system in real time and co-ordinate the supply of and demand for electricity, in a manner that avoids fluctuations in frequency or interruptions of supply.

Market operator / day to day buying

Co-ordinate daily buying of electricity from generators and selling to customers

Buyer

Be buyer of new energy as procured through Section 34 by Minister of Mineral Resources and Energy

Trading

TE will have Electricity Supply Agreements directly with consumers : Eskom Distribution, Municipalities, SAPP and Large Power Users

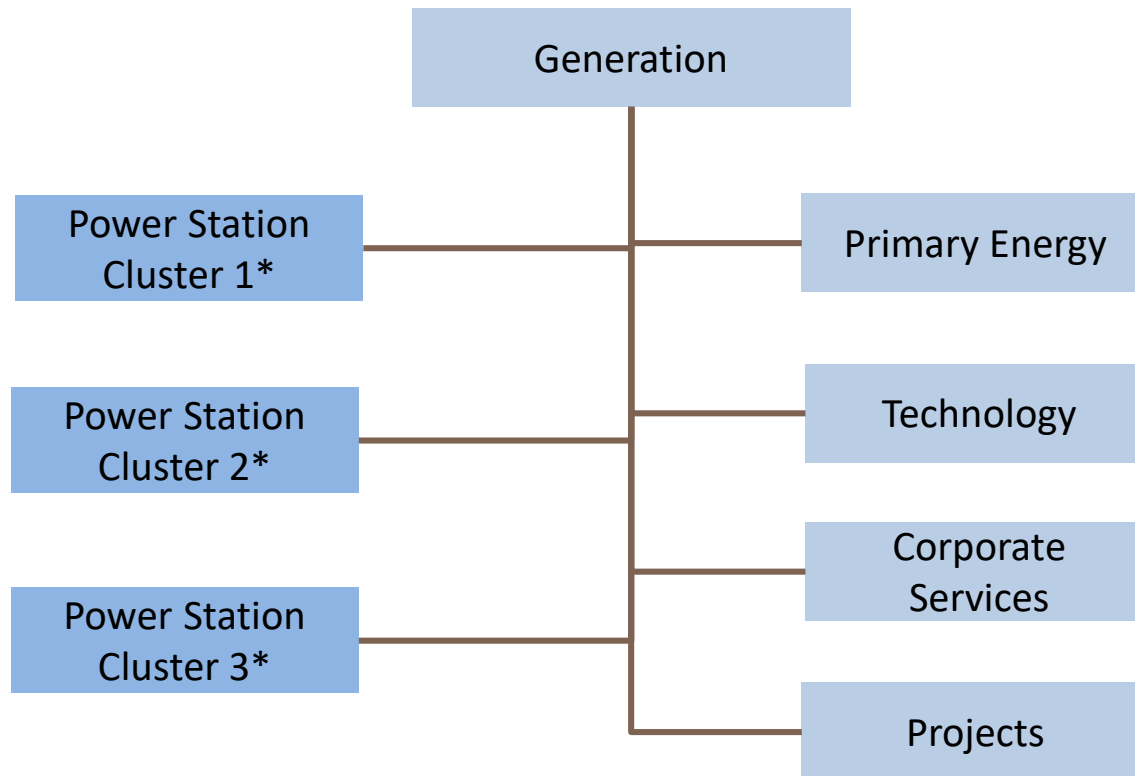
The formation of Generation Subsidiary under Eskom Holdings



Functions

- Eskom Generation **retains its current fleet**; each power station will have Power Purchase Agreement per plant with the TE.
- Eskom will **implement the retrofit of clean coal abatement** technology to ensure compliance with Minimum Emissions Standard
- Eskom will be permitted to build and own Renewable Energy generation
- Consideration to be given to **formation of clusters** to increase intra-company competition
- The generation **market (including IPPs) will be based on PPAs** with a transition to a competitive market over time.

Proposed Generation Operating Structure



* Number of clusters and configuration under review

The Restructuring of Eskom will result in 6 major benefits



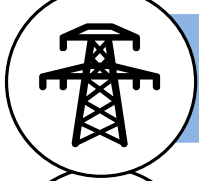
Increases Transparency with regards to operations and costs



Drives economic growth in the country



Drives increased competition in generation



Provides a stable robust system



Drives compliance with environmental legislation and policy



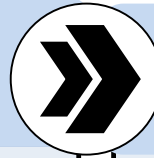
Promotes innovation and entrepreneurship

Eskom's current financial position requires support

Current Status

Eskom remains the single largest risk to the South African economy in respect of its unsustainable debt levels and the inability to provide sufficient electricity to support growth.

- Declining electricity sales driven by increases in tariffs and the changing electricity generation market.
- financial unsustainability due to escalating operating costs and costly new build program.
- Coal costs have increased fivefold and payroll costs threefold over the past decade.
- Outstanding fees are in excess of R40-billion and is increasing steadily.
- The utility is currently not generating sufficient cash to cover debt service costs
- Approved tariff increases have been less than required



Support

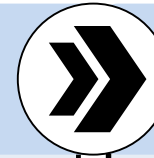
Fiscal injection

R49 billion in 2019/20
R56 billion for 2020/21.

Governance

CRO to consider a range of options to deal with Eskom debt and to advise government

Historic Support:
R350bn guarantees
R83bn equity (2015)



Debt resolution

The Minister of Finance will determine the appropriate treatment of debt in synch with improvement in operational performance and the execution of the institutional re-organisation.

Levers of financial turnaround (1/3)

Reviewing Coal Contracts



- Coal costs constitute one of the biggest cost drivers of electricity costs
- Eskom and coal industry (& other role players) to enter into mutually beneficial long term contractual relationship
 - Government convening a review meeting with coal suppliers (to review cost structure, returns and fair price of coal to Eskom).
- Re-invest in cost Plus to reduce rate of coal costs growth & extract efficiencies in existing contracts
- Additional cost efficiencies over and above the committed R6bn over the 3 years

New Procurement Approach



- Poor contracting practices
- Inability to leverage large procurement spend
- Eskom's procurement houses governance collapse
- Alternatives being considered to determine suitable models to eradicate corrupt practices including legislative consideration

Levers of financial turnaround (2/3)

Reviewing of IPP Contracts



- Efficiencies can be extracted from current REIPP contractual framework:
 - higher costs for earlier PPAs
 - substantial government guarantees
- Consumer are negatively impacted
- Significant contingent liabilities for the Country
- REIPPs to renegotiate current contracts
 - DMRE to lead the review process commencing in November
 - The Industry has expressed support for the process.
- Future rounds of bid windows' to take into account
 - rapidly changing technology and consequential reduction in cost
 - enhance risk allocation

Disposal of Non Core Assets



- Disposal of non-core assets to raise cash
- RE-focus Eskom on core business
- Disposal of Eskom Finance Company (EFC): Target date March 2020.

Levers of financial turnaround (3/3)

Employee cost saving initiative



- Review of employee benefits
- Alternatives to retrenchments to be considered (natural attrition, early retirement, VSP)
- Options to be Consulted / negotiations with labour

Recovery of outstanding fees



- Eskom to take appropriate actions to collect all revenue
- Drive culture of payment for services rendered
- Business, Civil society and government to support the drive of payment culture in the country

Tariff implications



- The finalisation of proposed amendments to NERSA Amendment Bill is critical to ensure that there is recourse in regulatory decision body that can be resolved timeously by a competent body.
- Government must direct NERSA on the implementation of the Electricity Pricing Policy to ensure that Eskom can fully recover efficient costs.

A “Just Transition” - sustainable approach for workers and communities will be adopted

- Timeous communication on decommissioning
- Decommissioning to take into account current energy needs
- Alternatives economic development to be considered for affected communities
- Government has an obligation to support these affected communities to adapt to the new opportunities and ensure that no one is left behind.

Key Considerations

- Stakeholder engagement and collaboration (industry , trade unions and communities)
- Closure of power stations must be linked to alternative economic opportunities
- Identify opportunities for existing and new markets within the supply chain of new power generation technologies
- Reskilling/ repurposing of current employees / communities for new opportunities
- committed to engage through the Presidential Working Group at NEDLAC

Pilot projects are currently under investigation in partnership with CSIR on the mitigation of effects that the decommissioning of power stations will have on communities

A “Just Transition” - South Africa’s and Eskom’s position on climate change and emissions

Reduce emissions, low carbon energy mix

SA’s COMMITMENT

1. United nations convention to combat climate change and Kyoto protocol
2. Paris agreement
3. National air quality legislation
4. IRP 2019
 - Increase share of renewable energy capacity to 40% by 2030.
 - Add other forms of clean energy, including hydro and nuclear.
 - Close existing power stations according to their stated de-commissioning schedules.

ESKOM’s PLAN FOR REDUCING EMISSIONS

Complete compliance with the 2010 Minimum Emission Standard, would require an estimated R187 billion. Given the current financial constraints, at this stage Medupi will be prioritised to be retrofitted with Flue-Gas Desulphurisation (FGD). Eskom plans to spend R46 billion (real) or R67 billion (nominal) to reach environmental compliance. In addition, an estimated R2 billion will be spent on an offset project in domestic dwellings.

Implementation Plan with key objectives 2021 & 2022

Date	Generation	Finance	Restructure
Nov '19	Roll out of Turnaround communications strategy Stakeholder Buy-In		
Dec '19	EAF:70%	Cost saving initiatives - Coal - Procurement - Sales growth - Municipal Debt	P&Ls established Org design approved PPAs and ESAs drafted
Jan – Mar '20	EAF: 73%		Interim board and CEO appointed of TE
Apr – Jun '20	EAF:73%		Support systems and functions complete
Jul – Sep '20	EAF:75%		Legal requirements finalised
Oct – Dec '20	EAF:75%		Functional unbundling of TE: complete



Structures will be setup to drive disciplined implementation

ESKOM'S RESTRUCTURING OFFICE

- Implementation of the Restructuring Plan within Eskom
- Cost saving, operational recovery, separation etc

GOVERNMENT'S MONITORING OFFICE

- Housed in DPE

REGULATORY REFORM

COMMUNICATION

MONTHLY REPORTS TO CABINET

STAKEHOLDER ENGAGEMENT FORUM - Quarterly

In Summary

There are a number of Eskom challenges	Solutions
<p>1. Eskom cant keep the lights on</p> <ul style="list-style-type: none"> - Inadequate maintenance - Poor build Programme performance 	<p>Strengthen the Generation recovery plan</p> <ul style="list-style-type: none"> - Disciplined power station management - Excellence in maintenance and repairs - Procurement of additional 2000MW
<p>2. Not generating sufficient cash to cover obligation</p> <ul style="list-style-type: none"> - R440 billion debt (2019 R80bn repayments) - Declining sales - Rising tariffs - High costs (Build programme, manpower, coal diesel) - Municipality & Soweto debt 	<ul style="list-style-type: none"> - Radical cost reduction - Explicit government support - MOF to consider debt solution - Resolve non-Payment culture
<p>3. Climate Change & Environmental Compliance</p>	<ul style="list-style-type: none"> - Implementation of IRP 2019 - Ensure compliance with MES - Govt facilitate a Just transition
<p>4. Outdated Business Model (as outlined on slide 3)</p> <ul style="list-style-type: none"> - Current Eskom doesn't support GDP growth and industrialisation - Eskom too systemic and too big to fail 	<ul style="list-style-type: none"> - Restructuring of Eskom - Detailed roadmap for restructuring - Allow for new private sector investment in Generation

Conclusion

**This roadmap is intended to provide Government's implementation plans to reform Eskom
Eskom's crisis poses a massive systemic risk to the country's economy.
Government has to act urgently to reform the ESI and Eskom.**

The proposals presented for Eskom's reform:

Eskom will be functionally separated into Generation, Transmission and Distribution.
This will allow for greater transparency and increase the efficiency of the three entities.

A Transmission Entity will be established as an as a separate entity within Eskom.

Coal will fuel existing plants until the end of the plant lifetime, the IRP will begin to
increase the share of alternative energy sources

Eskom's debt and poor financial state is major threat to the country's fiscus

Government's remains committed to a pro-poor just transition process, particularly any
impact on workers and communities while complying with the **Minimum Emissions
Standard**

Thank you

