Eskom Holdings SOC Ltd

Industrialisation and transformation through procurement: the Eskom experience

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Henk Langenhoven

Corporate Specialist: Supplier Development and Localisation

Content of the presentation

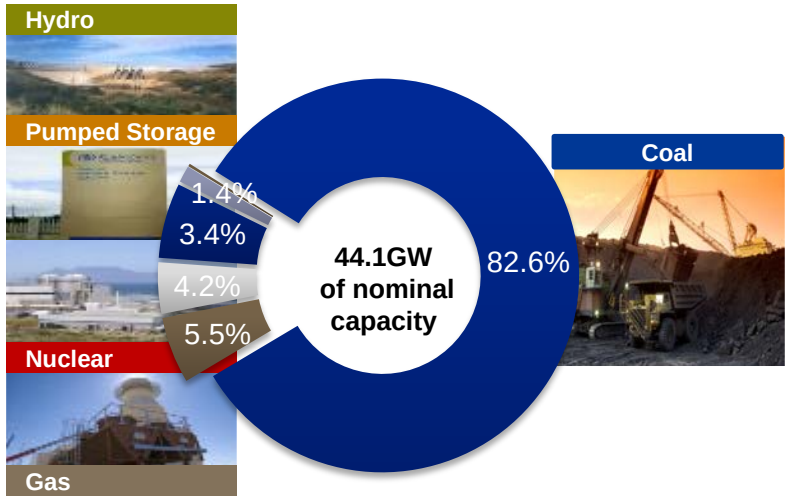
- About Eskom
- Performance against targets
- Procurement in a complex environment
- CSDP3 / SD&L Strategy: 2017-2022
- Opportunities for debate

CSDP: Competitive Supplier Development Programme, SD&L: Supplier Development and Localisation

About Eskom

- Strategic **100% state-owned electricity utility**, strongly supported by the government
- Supplies approximately **95%** of South Africa's electricity
- Performed **207 189 household electrification connections** during the year
- As at 31 March 2017:
  - **5.6 million customers** (2015: 5.4 million)
  - 29 (including 1 nuclear) operational power stations with a net maximum **generating capacity of 44.13W**
  - **17.4GW of new generation** capacity being built, of which 8.3GW already commissioned
  - Approximately **384 712 km of cables and power lines**
  - **47 658 employees**, inclusive of subsidiaries – 41 940 employees in Eskom

Generation capacity – 31 March 2017

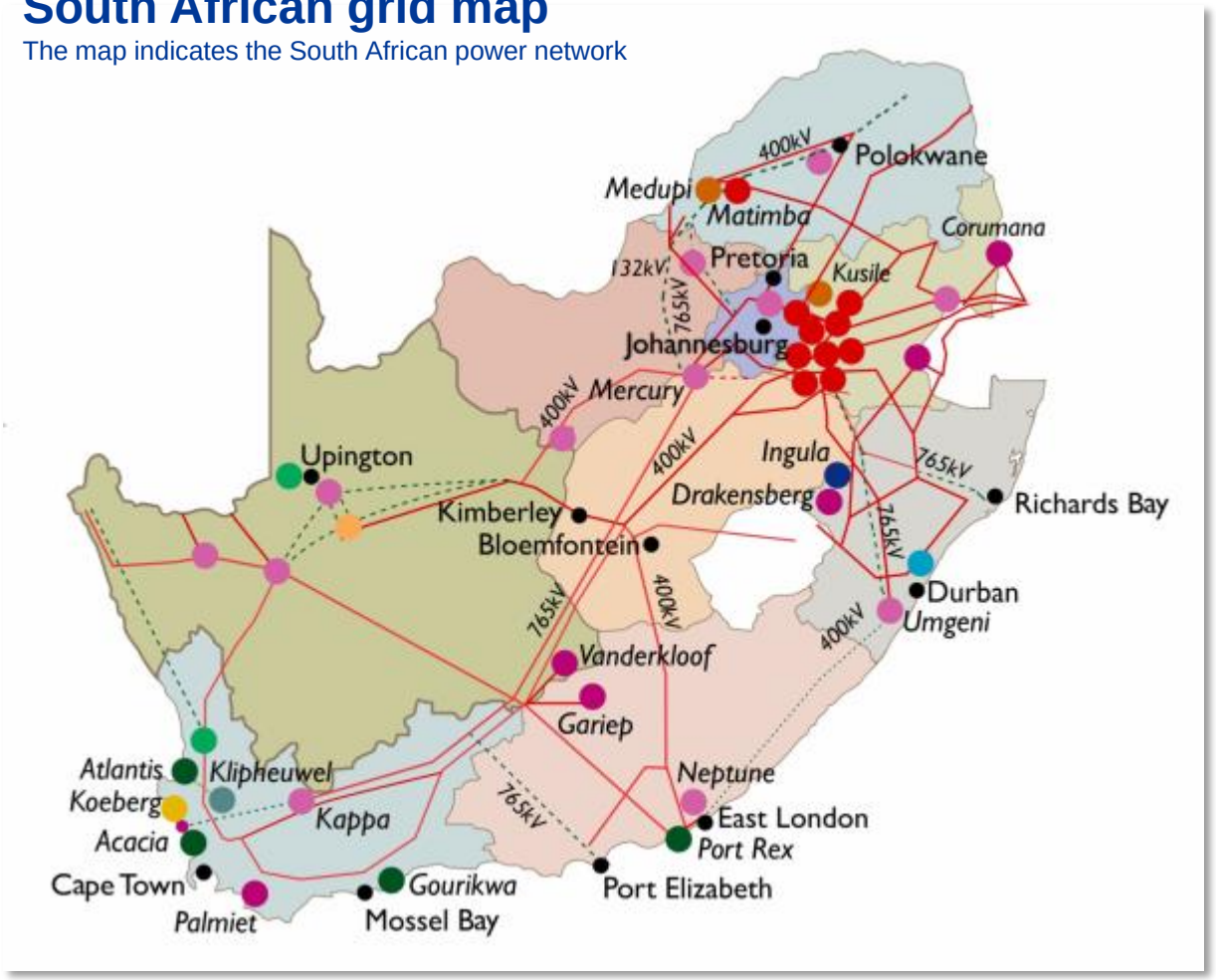


Source: Eskom Standard Presentation 2016

Infrastructure map

South African grid map

The map indicates the South African power network

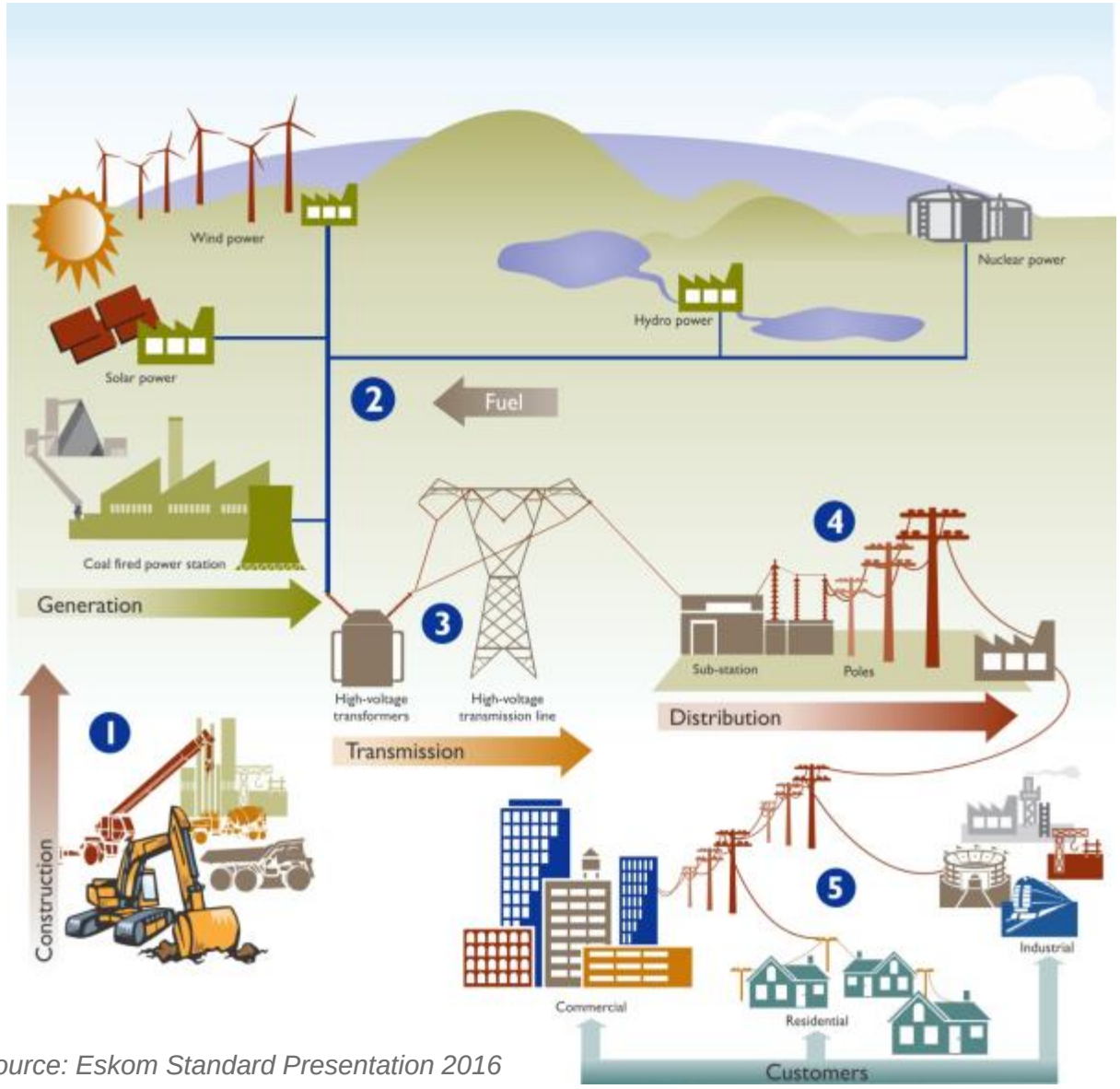


Key

- Existing grid system
- Not yet complete
- Possible future grid system
- Future hydroelectric power station
- Future thermal power station
- Hydroelectric power station
- Interconnection substation
- Town
- Future renewables
- Renewables
- Thermal power station
- Future interconnection substation
- Nuclear power station
- Future gas station
- Gas power station
- Future substation

Source: Eskom Standard Presentation 2016

Electricity value chain



- **Industrialisation** and **Transformation** opportunities are considered across all 5 areas of the business
- Construction, Operations and Maintenance, Fuel / Oil and Coal supply, up to Disposal

Source: Eskom Standard Presentation 2016

Plant mix

Type	Number of stations	Number of units	Nominal capacity (MW)	Percentage of total nominal capacity
Coal-fired	14	88	36 441	82.5%
Hydroelectric	6	16	600	1.4%
Pumped storage	3	10	1 732	3.9%
Nuclear	1	2	1 860	4.2%
Gas	4	20	2 409	5.4%
Wind	1	46	100	0.2%
Total nominal capacity	27	124	44 142	100.0%





Source: Eskom Standard Presentation 2016

Medupi power station project

- Total capacity **~4,800MW**
- Medupi is being **built in reverse order due to the rock conglomeration** on the southern side. However, this is used as the engineering fill on the northern side.

- Medupi's design is particularly **eco-friendly** due to:
  - **Supercritical boiler and turbine** design i.e. higher efficiency and less CO_2
  - Use of **Air-Cooled Condensers** i.e. less water consumed
  - **Zero Liquid Effluent Discharge** design
  - **Flue Gas Desulphurisation** (FGD) ready
  - **Low NO_2 burner** i.e. cleaner flue gas
  - Local **Coal** i.e. less Sulphur emitted
  - **Air Bag Filter** i.e. less ash in the air
- Total estimated **cabling to be installed** is approximately **15 000km**
- The **boiler house stands approximately 130m high** – equivalent to Sandton City
- Medupi will be **burning in excess of sixteen (16) million tons of Coal per annum** when in full production

The chimneys are 220m high, only 3m shorter than the Carlton Center

Enough concrete to build four (4) Greenpoint stadiums

More steel than the world's tallest building, the Burj Khalifa

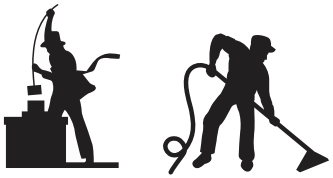
Source: Eskom Standard Presentation 2016

Medupi highlights

R2.3 billion in Lephalale infrastructure

R14 million support for clinics

R3.5 billion spent with local businesses



18 000 direct jobs and 2 000 indirect jobs at peak

4 045 youth trained

995 houses built

Source: Eskom Standard Presentation 2016

Kusile power station project

- **Total capacity** **4 800MW**
- **Location**: **Nkangala District, Mpumalanga province**
- **Site clearance**: **March 2010**

- Kusile will be the first in South Africa to install **flue-gas desulphurisation (FGD)** – a state-of-the-art technology used to remove oxides of sulphur, such as sulphur dioxide (SO_2), from exhaust flue gases
- Kusile is an Ndebele and Siswati word meaning **"the dawn has come"**
- On completion, it will be the **4th largest** coal plant in the world
- A total of 16 000t of **structural steel** was used for the first unit's boiler construction and it is expected that **115 400t** of structural steel will be used for all six units.
- The construction area is **2 500 hectares** in size and the whole Kusile site is **4 500 hectares**

Source: Eskom Standard Presentation 2016

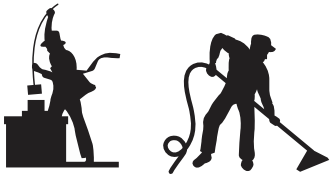
Kusile highlights

13 000 workers transported daily by bus

118 schools renovated or supported

C Corporate
S Social
R Responsibility

R9.9 billion spent with local businesses

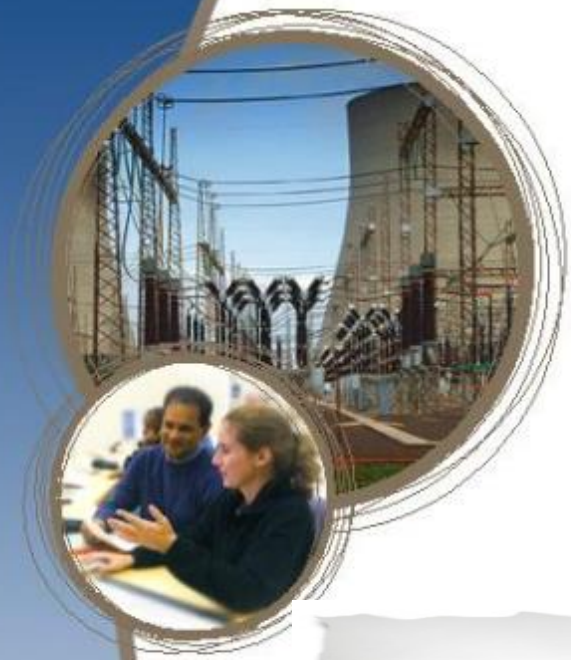


Created 18 000 direct jobs and more than 2 000 indirect jobs

3 041 youth trained

21 houses built for families

Source: Eskom Standard Presentation 2016



Performance against targets

Achieve **maximum** and **sustainable** local development impact through leveraging Eskom's **procurement spend** in a manner that allows **flexibility** within the business in order to accommodate government local development initiatives and policies

Key highlights for the previous year

Transformation and Industrialisation performance

- Procurement from **B-BBEE compliant suppliers** was 98% (2016: 82%)
- Spend with **black owned suppliers** increased from 34% to 41%
- **Local content contracted** from the new build programme was 86% and for the rest of Eskom 73,4%
- Procurement from **black women-owned suppliers** was 15%, exceeding the target of 12%



Source: Eskom Standard Presentation 2016

SD&L performance against KPI's – YTD June 2017

Monetary spend on designated suppliers is noteworthy, despite the current underperformance against most KPI's

Key Performance Indicator (measures)	FY17 Target	YTD Act*	Spend Value ≈ Rbn
Percentage of Broad-Based Black Economic Empowerment Attributable Spend against TMPS*	82%	50%	R 18,6bn
Percentage of Black Women Owned Attributable Spend against TMPS	12%	12%	R 4,4bn
Percentage of Black Owned Attributable Spend against TMPS	40%	25%	R 9,2bn
Percentage of Black Youth Owned Attributable Spend against TMPS	2%	1%	R 550m
Percentage of Black People with Disabilities Attributable Spend against TMPS	1%	0%	R 7,4m
Percentage of Qualifying Small Enterprises Attributable Spend against TMPS	15%	5%	R 1,6bn
Percentage of Exempted Micro-Enterprises Attributable Spend against TMPS	15%	6%	R 2,2bn
Local Content Contracted (New-Build)	70%	56%	R 80m contr
Local Content Contracted (Eskom Wide)	70%	74%	R 24 bn contr

Source: Commercial KPIs performance – YTD June 2017

**TMPS – Total Measurable Procurement Spend*

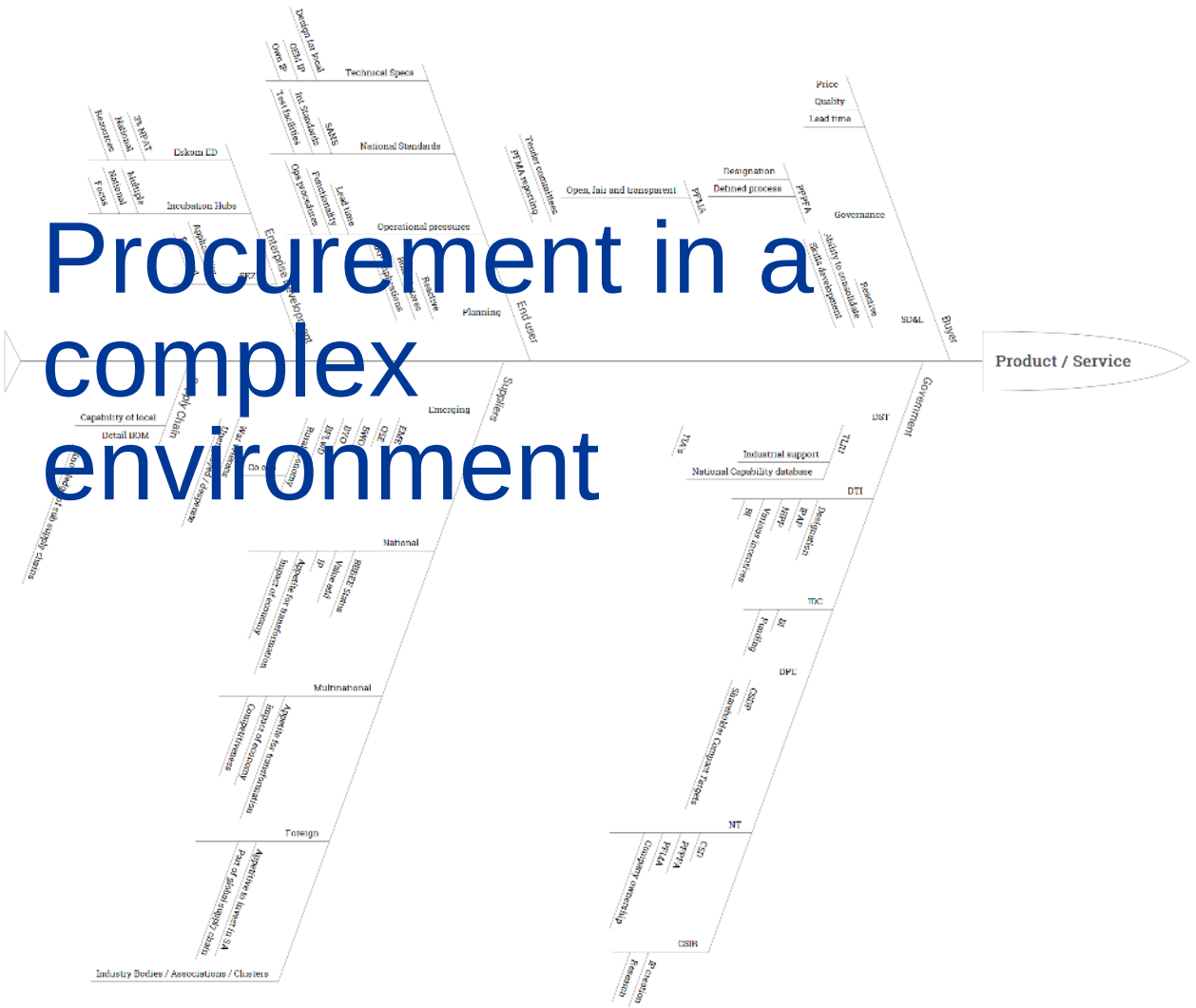
Industrialisation achievements

Examples of technology influenced successes that have been realized through the implementation of CSDP2

- Technical **focus on material** for nuclear storage tanks replacement strategy allowed for the supply of locally produced input material, thereby significantly increasing the local participation in downstream manufacture.
- **International know how transfer** to a local BWO manufacturer enabled successful manufacture of complex Low NOx burners, previously fully imported.
- 6 LP Turbine casing were successfully placed on a local manufacturing company through **contracted skills transfer** from the international OEM in the areas of engineering, manufacturing and quality control
- **Procured the IP and licencing** rights to design own fabric filter plants allowing for the specification of plant available in the local market, increasing local participation in the Emissions Reduction Strategy
- Influenced the number of power plant focused **post graduates** in the academic sector – linked to the creation of local IP

Source: Commercial KPIs performance – YTD June 2017 and experience

Procurement in a complex environment



Procurement in a complex environment

Over and above the KPI's that has to be met, additional complexity exists within SOC procurement

Expectations on spend:

- **Black Industrialists** – DTI incentive targeting 100 beneficiaries
- **Rural economy** – Supporting rural businesses where the spend takes place
- **War veterans** – Procuring from entities that qualify as War veterans
- **Regional suppliers** – Sourcing from suppliers operating within the region where the need arises
- **Local to site** – expectations to incorporate suppliers residing within the immediate boundaries where the spend occurs

Implementation considerations:

- PPPFA **subcontracting** – does not automatically contribute to SOC KPI's
- PPPFA **designation** – Detail BOM, evaluation, reporting, turnkey supply
- **Accounting system** restricted to 1st tier data capturing
- **PFMA** – Need for open tenders for all substantial transactions
- **Financial liquidity** on long term contractual commitments

Source: Practitioners experience

Case study – the transformation dilemma

In order to impact current achievement in particular categories, a step change is required

Notes:

- Baseline - TMPS FY16/17
- **Actual active** refers to suppliers with current active contracts.
- **Required suppliers** calculated on average contract utilisation of 78%
- Assumes Eskom **maximises** supplier's annual turnover
- Upper limit on turnover influences a vendor's BBBEE classification

Group	Target	Actual	Actual active	Required suppliers
QSE	15%	5%	1400	477
EME	15%	6%	1800	2383
BYO	2%	1%	300	3

Observations:

- Number of active suppliers influenced by expectations from the market, Incl Regional focus
- PPPFA applicability (>R30 000) drives behaviour
- QSE category not optimised ito turnover
- Short term spend targets are more conducive to the creation of traders
- Industrialisation impetus will see average contract value increase over time

Source: Commercial KPIs performance, Practitioner experience

Eskom CSDP2 Lessons learned

Some key lessons were learned during the implementation of the Competitive Supplier Development Program (CSDP)

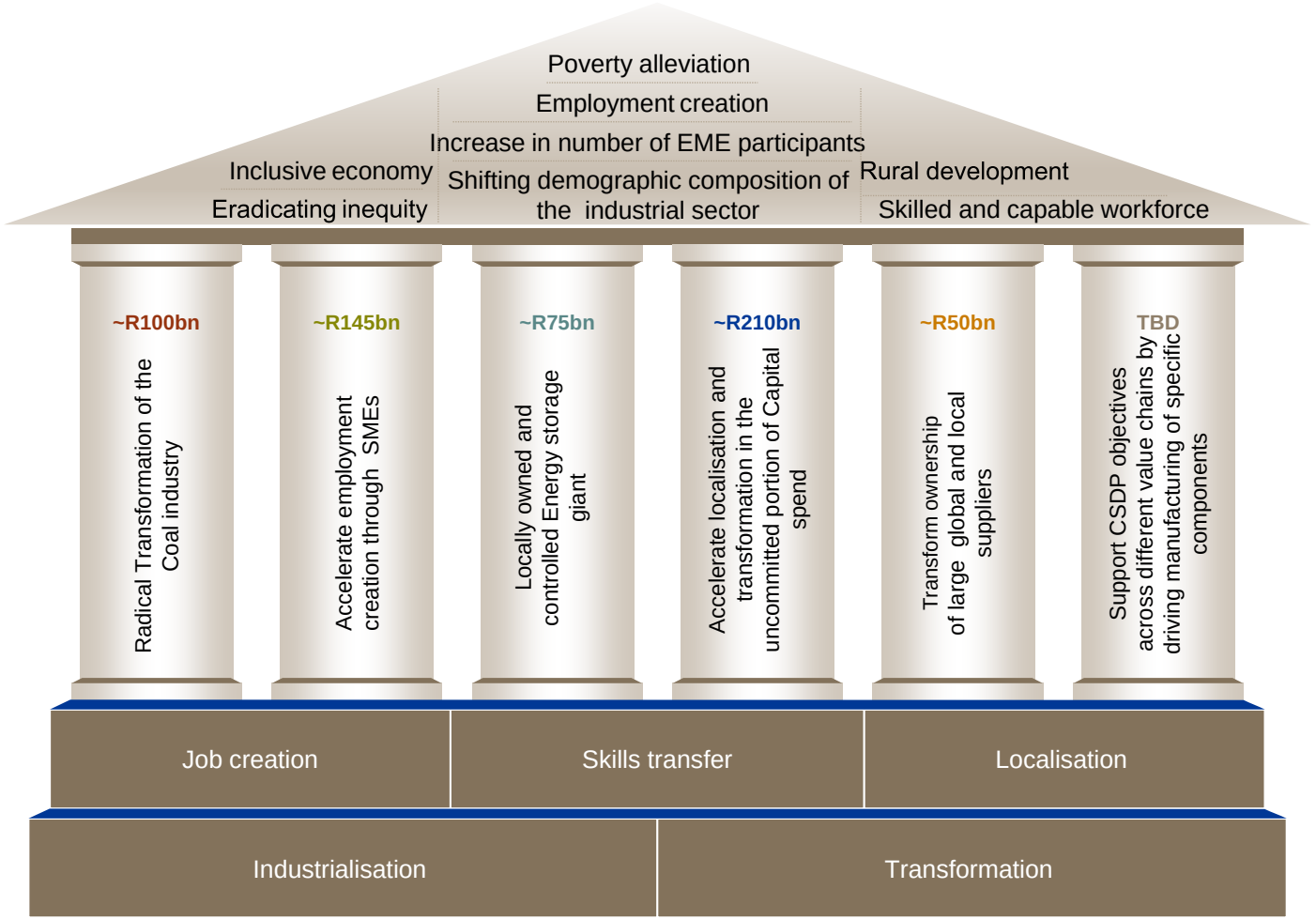
- Inability to consider "**GDP value add**" in commercial evaluations
- **Inherent risks** associated with the introduction of a new player in the supply chain. Too wide a focus introduces an unacceptable level of risk that could impact the security of supply of critical components and ultimately electricity supply.
- SOC's programmed to adhere to **compliance and governance** – industrialisation requires innovation and thus a creative approach
- Integration of industrialisation and transformation throughout the business assumes a level of **maturity, knowledge and experience** that might not necessarily exist.
- Successes often stemmed from business pain points where the **technical function** took the lead
- General limited **local industry knowledge** hampers strategy development
- **Outcome KPI's** does not ensure focus, need to balance these with **input / effort KPI's**
- The impact of **conflicting KPI's** impacts on depth of localisation, i.e. Turnaround time vs % local content
- **Design for local** – Technical, Commercial, Stock holding, Project packages
- CSDP is not restricted to procurement phase only, value is derived from **design to payment**
- **Formal education** often lagging as opposed to leading – required skills available at end of project

Source: CSDP2 reflections

CSDP3/SD&L Strategy: 2017-2022

Competitive Supplier Development Program 3 / Supplier Development and Localisation Strategy

Eskom CSDP3 Monument



A monument commemorates a historic event that a group of people have embarked upon and serves to commemorate this event. Eskom believes this plan will be looked at and remembered by future generations as the event that changed the direction of the South African industrial landscape.

Source: Eskom CSDP3 (2017-2021)

Dynamics that shaped CSDP3

…"How do we procure from a single source, a product that they have never made before" –
B McColl, then GM Eskom R&S

- Define what success would look like at the beginning of the process – stay focussed
- Initial strategy will not be 100% correct – be flexible and adapt
- Industrialisation will not be sustainable unless transformation is an integral part of the strategy
- Industrialisation linked to commercial transactions:
  - does not allow time to influence investors,
  - restriction on engagement with the market due to PFMA
- Timeous procurement signals to the market triggers investment decisions.
- Manage expectations – create momentum:
  - Instant gratification vs investment, set up lead times
  - Be clear about assumptions and uncertainties
- Prepare for a "first of a kind" component through to maturity
- Back to basics – keep the solution as simple as possible

Source: Barry Mc Coll, CSDP2 reflection, Practitioner experience

Opportunities for debate

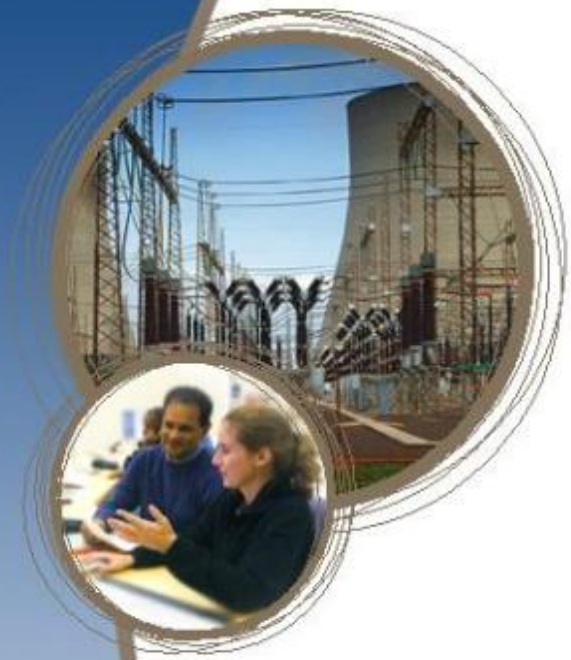
Opportunities for debate

*…..the all-critical decision about whether or not to pursue an investment opportunity rests on the evidence of two things: **sustainability** and **scalability**. If those characteristics are there, the investor is often very interested…Morris, G*

Opportunities beyond individual SOC's

- Create national policy that support an "**Industry Champion**"
- Develop **own IP** (SA Inc) and commercialise through Incubation
- **Consolidate** components at national level, but
  - Contemplate a model that will allow **regional participation**
- Allow contribution to **National GDP** to become part of the TCO calculation
- **Industry capability database** (TLIU), linked to NT CSD as national asset.
- **National COE** – consolidate and share experiences to fast track learning and implementation
- Think beyond traditional supply chain – e.g. **value in waste** product
- **Knowledge transfer** covers both codified as well as tacit knowledge – case for mentorship

Morris, G, CEO of MICROmega Holdings, https://www.moneyweb.co.za/moneyweb-opinion/soapbox/can-intellectual-property-be-an-investment-tool, Practitioner experience



Thank you

Henk Langenhoven
Tel: 011 800 3935
Cell: 083 632 7599
email: henk.langenhoven@eskom.co.za