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Integrated Energy Plan Pillars
Energy Planning – 8 Objectives

- Ensure Security of Supply
- Minimise Cost of energy
- Promote Access to energy
- Diversify supply sources
- Minimise Water consumption
- Promote energy efficiency
- Promote Job creation & localization (technology transfer)
- Minimise Environmental Impacts

Energy Projects

- Economic Development
- Social Development
- Environment
Inclusive Growth - SA’s developmental trajectory

- Sustainable economic growth
- Advancing Black-owned businesses & Industrialists
- Job Creation – combating youth unemployment
- Social security
- Health & Education
- Women-owned enterprises
- Broadening participation in Economy
Coe ga Overview
Coega Overview: Investment Sectors

- Chemicals
- Agro-processing and Aquaculture
- Logistics
- Automotive
- Metals
- Services
- Energy
- Maritime
- Trade Solutions / Training & Development Cluster
Transformational Mega Projects at Coega

<table>
<thead>
<tr>
<th>#</th>
<th>Project Name</th>
<th>Description</th>
<th>Investment Value</th>
<th>Jobs Created (direct &amp; indirect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gas-to-Power Project</td>
<td>An additional IPP – driven power generation solution (2500MW) that is linked to a imported LNG</td>
<td>R 40 bn</td>
<td>8 140</td>
</tr>
<tr>
<td>2</td>
<td>Aquaculture Complex</td>
<td>Development of an Aquaculture Development Zone at Coega.</td>
<td>R 2 bn</td>
<td>5 605</td>
</tr>
<tr>
<td>3</td>
<td>Return Effluent</td>
<td>Recycle water for industrial use</td>
<td>R 1.2 bn</td>
<td>1 500</td>
</tr>
<tr>
<td>4</td>
<td>Manganese export &amp; Rail Upgrade</td>
<td>To increase Manganese export capacity to 16mtpa by upgrading the rail infrastructure between Hotazel &amp; Coega.</td>
<td>R 27 bn</td>
<td>5 000</td>
</tr>
<tr>
<td>5</td>
<td>Renewable Energy</td>
<td>Renewables</td>
<td>R 2.8 bn</td>
<td>2 500</td>
</tr>
<tr>
<td>6</td>
<td>PMG Manganese Smelter</td>
<td>Manganese Smelter to assist SA minerals</td>
<td>R 7 bn</td>
<td>1 500</td>
</tr>
<tr>
<td>7</td>
<td>Biodiesel Plant</td>
<td>Green fuels, Environmental Friendly</td>
<td>R 3.5 bn</td>
<td>25 200</td>
</tr>
<tr>
<td>8</td>
<td>Project Mthombo</td>
<td>Oil Refinery</td>
<td>R 100 bn</td>
<td>24 000</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td></td>
<td>R 183,5 bn</td>
<td>73 445</td>
</tr>
</tbody>
</table>
Transformational Energy Projects
- Reliable supply & long term tariff predictability;
- Risks e.g. SA’s success with mega projects;
- NNBP could be delivered progressively;
- Significant opportunity for new investment and JV’s for local and global markets (IPAP);
- Strategic development of human capacity and infrastructure;
- Localization of components & Nuclear Fuel;
- EC Gov support to drive nuclear awareness.
Income effects .... Wages, profits and tax contributions

INCOME EFFECTS (DIRECT)

- Nuclear Build estimated impact on the EC - Units 1&2
  - Localization est. for SA (assuming 60%) R16bn
  - Employment Construction est. average R1.9bn p.a (direct, wages)
  - Most likely localization (35%) R5.6bn
  - Of which est. 71% will remain in province, balance accrued to rest of SA
  - Of which we expect R1,920bn to accrue to the EC (12%)
  - Direct wage impact (construction phase) on EC = R1,349bn p.a
  - Direct tax revenue est. average R429m p.a.
  - Total economy-wide impact on Provincial GDP est. average R15.6bn p.a.
    which gives est. rise in provincial GDP of around 3%, peaking at 5.5% (2027)

Total employment estimate:
- Inclusive of localization impacts, some 22,900 formal sector jobs to be created (direct + indirect impacts) est. at 35% localization of which the EC est. to garner 12%. Most of these jobs, skilled and semi-skilled average duration 214 days

- Construction jobs 15,000 peak est. 9000 average (direct)
- Indirect employment (induced, inclusive localization) average R3.3bn p.a.
Consumption – how nuclear drives demand

**CONSUMPTION EFFECTS**

Construction of a new nuclear power plant will provide a substantial boost to suppliers of commodities like concrete and steel and manufacturers of hundreds of components. The figures are calculated per megawatt (MW) of installed capacity.

- 523,560 m³ concrete
- 66,000 tons of steel
- 70.4 km of piping
- 480 km of electric wiring
- 130,000 electrical components

The commodity estimates are based on normalized averages from analyses of the economic and employment impact of 23 U.S. nuclear plants.

**Likely localization scope:**
- Civil construction and engineering
- Piping
- Pressure vessels and tanks
- Ventilation
- Electrical components
- Steel cladding
- Instrumentation and control components

The *multiplier estimates* are based on multipliers normed for the EC economy by Quantec and gives for every Rand spent on nuclear, the local economy will benefit R1.04 (Kouga), the EC economy **R1.18** and the national economy **R1.87**. The EC multiplier is based on existing industrial capacity, however with a supplier development and localization programme the balance can shift to R1.36 (EC) and R1.94 (national).
New crude oil refinery for PetroSA to be based in Coega, Port Elizabeth.

**Macroeconomics**

- $10 b to be spent during construction;
- R94,6b per annum operational costs (including feedstock);
- 83% of economic impact will accrue to the Eastern Cape;
- Household income in the Eastern Cape could rise R1.8b per annum;
- 5.5% p.a possible economic growth for the Eastern Cape province.
- Spin-offs from the localisation initiative amounting to about R20bn could come to the province.

**Construction phase**
- Up to 23,000 at peak
- 5,000 to 10,000 highly skilled artisans.

**Operation phase**
- Approx. 1,000 permanent refinery jobs;
- 18,000 indirect jobs.
Biodiesel Pipeline

**Soyabean**
- 300,000 t/a
- 500 jobs

**Canola seeds**
- 400,000 t/a
- 25,000 Jobs

**Waste vegetable oil**
- Importation of WVO
- 100,000 t/a
- 100 jobs
Conclusion
Coega Energy Vision

- Eastern Cape endowed with resources for a diverse energy mix;
- Locate **LNG & Gas-to-Power** power solution at Coega;
- Leverage lessons from **Dedisa PPP & REIPPPP experience** of the region;
- Build socio-economic linkage to **Shale Gas** prospect & **Deep-water Gas**;
- Central in **Nuclear Readiness** Programme to support the New Build Programme;
- Development of an **Oil Refinery** at Coega;
- Unlock **Biofuels & other clean energy projects**;
- Expand **RE implementation** to drive socio-economic growth;
- Incorporation of **Inclusive Growth** imperatives
- **Remain relevant** to the developmental trajectory of South Africa.
THANK YOU