Investment in Gas to drive Economy
DoE Energy Indaba
7th December 2017
Diversifying South Africa’s Energy Mix

Towards an Integrated Gas Industry

Key Constraints & Enablers

Inclusive Growth & Transformation

Summary
South Africa’s Diverse Energy Mix

- Diversify supply sources
- Minimise emissions
- Promote localization & technology transfer
- Promote energy efficiency
- Access to energy
- Cost of energy
- Energy Security

Energy Projects

- Economic Development
- Social Development
- Environment

Alignment to national government policies, including:
NDP, SIP-3, Operation Phakisa, IPAP, 9-Point Plan & IRP
Diversifying South Africa’s Energy Mix

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Key Constraints & Enablers

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Summary
• Source for (re-)industrialisation of SA manufacturing economy; contributing to an **inclusive growth path** & job creation

• Viable production of indigenous gas could support a **carbon-resilient** future, **cost-effective** power sector & greater **energy independence**

• Unlocking industry in short to medium term: **importation of LNG** builds readiness for indigenous gas & enables development of **gas market infrastructure**
Towards an integrated Gas value chain
Industrialization in an integrated Gas Economy

- **Conversion of existing industries for gas as feedstock in processes:**
  - Desirability of conversion linked to gas price vs price of current fuel
  - Workable gas price justifies conversion of process machinery

- **Distribution/Transportation of gas to industry:**
  - Gas pipeline solutions as well as containerised LNG via road and rail
  - Small-scale regasification unit may be required at end user facilities

Extracted from *Information Memorandum for new LNG to Power (Oct 16)*
Towards an Integrated East Coast Gas Industry

**Integrated Gas Outlook**

- Leverage the catalytic potential to trigger structural changes in economy
- Commitment to create enabling environment for Energy Programmes
- Coordination of institutional Readiness
**Louisiana’s** chemical industry is particularly sensitive to changes in natural gas prices:
- As natural gas prices increase, chemical industry employment (and output) tends to decrease
- Price increases were the product of a mismatch between supply and demand
- Policy Response: Forecasted Natural Gas Imports (LNG)
- Rise of Unconventional Resources and Louisiana Manufacturing Recovery (post 2009)

**Trinidad & Tobago** Learnings:
- Modest resources of NG used for Feedstock and as a Fuel led to industrialization and the development of high-value added service sector activities
- The La Brea Platform Fabrication Yard (2004 - 2017) – state funded, continues to sustain local content (services in Oil & Gas) – in JV with US co.
- Ownership of the enablers for natural gas monetization such as industrial estates, ports, power generation, and pipelines
- Skills key for FDI attraction

**Lithuania** Experience:
- Importation Gas Pipeline from Russia – security of supply
- Diversification of Gas Supply sources – LNG terminal infrax – state funded & operated (Klaipeda)
- Tolling solution-Multi-user regas terminal
### Key Constraints & Enablers

<table>
<thead>
<tr>
<th>Policy, Regulation &amp; Licensing</th>
<th>Infrastructure</th>
<th>Manufacturing, Industrialisation &amp; Localisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-to-end integration</td>
<td>Funding &amp; Financing</td>
<td>Socio-Economic/Economic Development</td>
</tr>
<tr>
<td>Market Demand/ Potential offtakers</td>
<td>Human Resources &amp; Skills Dev</td>
<td>Environmental</td>
</tr>
<tr>
<td>Public Awareness</td>
<td>Quality Standards &amp; Accreditation</td>
<td>Institutional Readiness</td>
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Gas Infrastructure Development

- Need to maintain & expand gas infrastructure to support socio-economic objectives

- Who will build, fund, own and operate the necessary gas infrastructure
  - Need economically viable solution, while promoting an open market
  - Balance roles of Govt, SOE’s & private sector (FDI & local)

- Given the limited state’s financial resources, Private funding may need to be sourced

- Incentives may increase uptake

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**Phakisa A1 Phased Gas Pipeline Network**

The Gas Pipeline Network will be developed in 7 Phases as deemed economically viable and based on viable business cases for each phase.
## Integrated Localisation Approach for Energy Projects

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Develop Capability &amp; Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Localisation &amp; Manufacturing</strong></td>
<td>Manufacturing sites, with market access and logistics network. Underpinned by a comprehensive Investment Attraction &amp; Project Development capability</td>
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<tr>
<td><strong>Industry &amp; Regulatory Engagement</strong></td>
<td>Investment Attraction &amp; Project Development Participation in international and national industry activities Engagement with various Government agencies &amp; State Owned Entities</td>
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<tr>
<td><strong>SMME &amp; Supplier Development</strong></td>
<td>Facilitation of Emerging entrants into the manufacturing sector in particular black and women owned enterprises. Assistance with the commercialization of newly developed home grown patents and technology, ensuring technology transfer</td>
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<tr>
<td><strong>Human Capital Solution</strong></td>
<td>Labour absorption forecasts &amp; planning related to transformational projects and engagements with the National Infrastructure Skills Planning Committee.</td>
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<tr>
<td><strong>Labour Management</strong></td>
<td>Support Recruitment, Placement &amp; facilitates Labour relations.</td>
</tr>
<tr>
<td><strong>Skills &amp; Training</strong></td>
<td>Institutions of higher learning with accreditation on Degrees &amp; learning programmes comprised of apprenticeships, learnerships and part qualifications. Advance R &amp; D</td>
</tr>
<tr>
<td><strong>Infrastructure Programme Implementation</strong></td>
<td>Project Management Services for the Development of Supporting Infrastructure and logistics i.e. Port Infrastructure liaison, Roads, Bridges, support infrastructure. Facilitation of permitting &amp; related authorisations</td>
</tr>
</tbody>
</table>
Based on potential impact of domestic gas, power & downstream petrochemical production, estimated natural gas development could boost SA’s GDP by $12bn to $22bn by 2030; with approx 328,000 jobs (direct & indirect)

McKinsey and Co.(2015)
Capacity Building through Vocational Training
SMME and Black Industrialist Opportunities Analysis

Understand the supply chain
• Example: 1000 cryo-containers required by 2020

Understand the supply criteria and specifications
• Are there suppliers who can manufacture these?
  • Capacity Assessment
  • Accreditation
  • Certification

Dow we have the potential suppliers? Define the gaps or supplier development opportunities
• Who needs to be developed, and in what way?
• Are there supply gaps/opportunities that can be occupied

Develop a programme to crowd-in support for SMMEs and BI (Before construction begins)
• National
• Provincial
• Local
• Will these spheres duplicate or complement?
• Define coordinators?
Index

1. Diversifying South Africa’s Energy Mix
2. Towards an Integrated Gas Industry
3. Key Constraints & Enablers
4. Inclusive Growth & Transformation
5. Summary
Investment in Gas to drive Economy

- South Africa is endowed with resources for a diverse energy mix
- Gas for energy security, diversity & socio-economic development prevails
- Market Demand potential exists in region & continued work in this sphere
- Gas-to-Power is key in the national energy plan
- Build socio-economic linkage to Indigenous gas (shale/offshore)
- Gas industrialisation translates to deepened downstream sector
- Stimulating local content manufacturing for Energy sector
- Leverage lessons & experience from recent Energy Build programmes
Investment in Gas to drive Economy

- Access to Energy stimulates economic growth
- Momentum through strategic collaborations & partnerships
- Efforts to build Readiness by Private & Public sector
- Promote co-ordination & collaboration between key state organs
- Leverage innovation and business ecosystems to enhance competitiveness and attractiveness as investor location of choice
- Remain relevant to the developmental trajectory of South Africa
THANK YOU

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