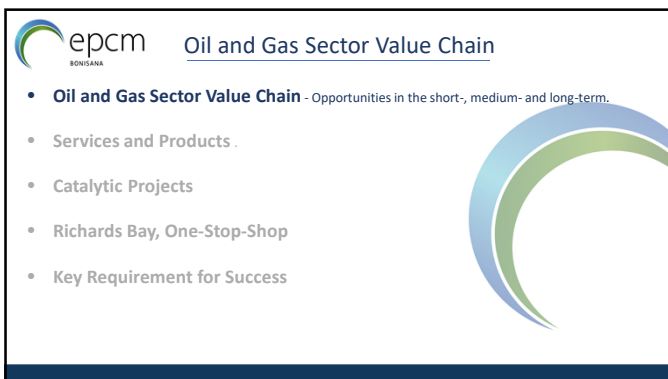




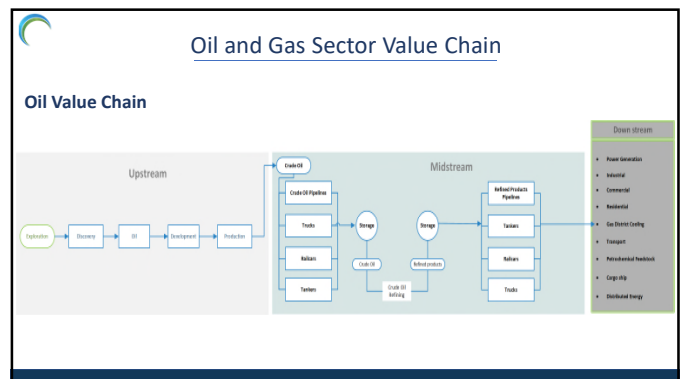
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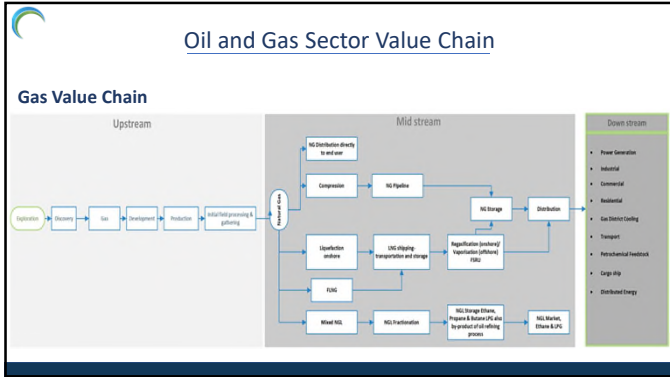
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- ### Oil and Gas Sector Value Chain
- **Short-term Opportunities** (Time Frame < 5 years):
 - Barge LNG to Richards Bay
 - Extra storage capacity for imported white products
 - CNG filling stations, convert large mining and transport vehicles
 - Convert Avon power plant to operate on gas, as per original design
 - Moor a FSRU to regasify the imported LNG
 - Re-direct gas flow in the Lilly Pipeline

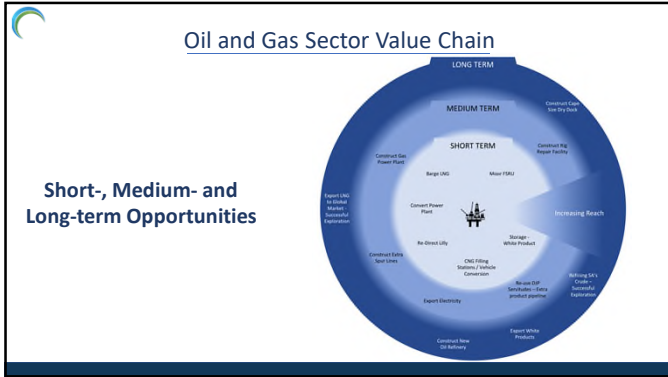
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- ### Oil and Gas Sector Value Chain
- **Medium-term Opportunities** (Time Frame < 15 years):
 - Construction of a gas to power plant
 - Construction of a rig repair facility
 - Re-using the DJP servitude for extra product pipeline
 - Construction of extra spur lines from the natural gas pipeline
 - Export of electricity to neighbouring countries

7

- ### Oil and Gas Sector Value Chain
- **Long-term Opportunities** (Time Frame > 15 years):
 - Construction of a new oil refinery
 - Construction of a cape size dry dock facility
 - Refining of South Africa's own crude oil after successful explorations
 - Export of white products to the global market
 - Export of LNG to the global market after successful explorations

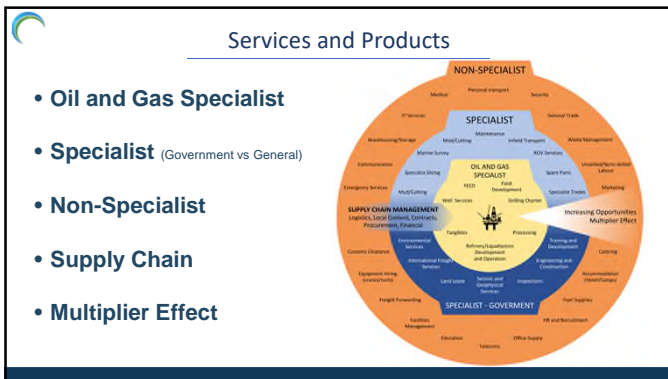
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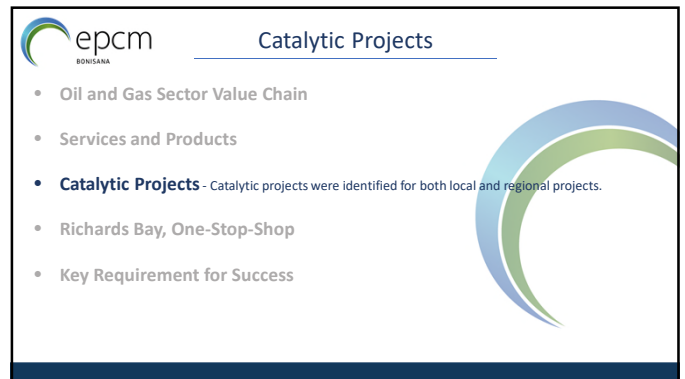
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Catalytic Projects

- **Classification**

Game Changers	Major Enablers	Major Needs
<ul style="list-style-type: none"> • Port upgrades to allow for FSRU mooring • Port upgrade to accommodate rig repair facility • Construct a new crude oil refinery • Port upgrade for cape size dry dock facility • Explorations for oil and gas 	<ul style="list-style-type: none"> • Barge LNG to South Africa • Extra Storage Capacity for white products • Convert Avon Power Plant to gas • Re-directing flow direction of Lilly Pipeline plant • Re-using the DJP servitude • Construct gas spur lines 	<ul style="list-style-type: none"> • Construct CNG filling stations • Convert heavy vehicles to operate on CNG

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Richards Bay, One Stop Shop

- Oil and Gas Sector Value Chain
- Services and Products
- Catalytic Projects
- **Richards Bay, One-Stop-Shop** - Assessed the One-Stop-Shop and listed the benefits.
- Key Requirement for Success



14

Richards Bay, One Stop Shop

- **Services**

<ul style="list-style-type: none"> ➢ Company registration and CIPC services; ➢ Business permits and Visa Facilitation Service; ➢ Unemployment Insurance and Compensation Fund; ➢ Environmental Impact Assessments; ➢ SARS and Customs; ➢ Mining Permits; ➢ NRCS, ITAC and SABS; ➢ Municipal facilitation; 	<ul style="list-style-type: none"> ➢ State-owned enterprises; ➢ Incentive facilitation; ➢ Land zoning and transfer; and ➢ Investment promotion and international investment missions.
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15

Key Requirements for Success

- Oil and Gas Sector Value Chain
- Services and Products
- Catalytic Projects
- Richards Bay, One-Stop-Shop
- **Key Requirement for Success** - Divided into government, business community, labour force and general society.



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Key Requirements for Success

- **Government**
 - Policy and strategy alignment (national, provincial and regional)
 - Environmental matters
 - Availability of land and bulk infrastructures
- **Business community**
 - Potential investors and their readiness
 - Technologies
 - Stakeholder mobilisation and readiness
- **Labour forces and general society**
 - Skills and human capital
 - Public participation

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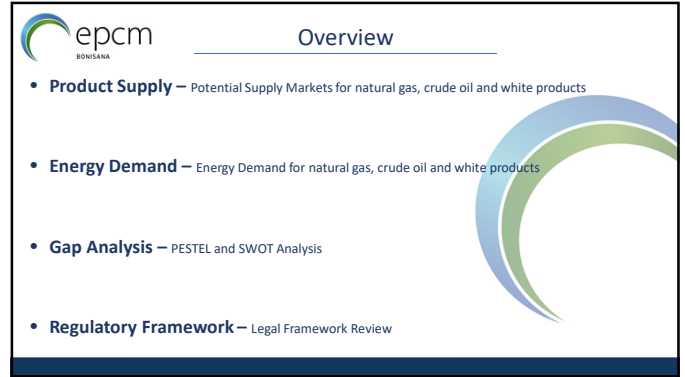


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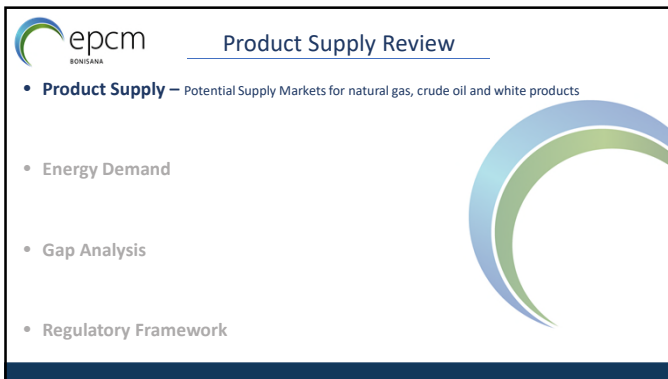
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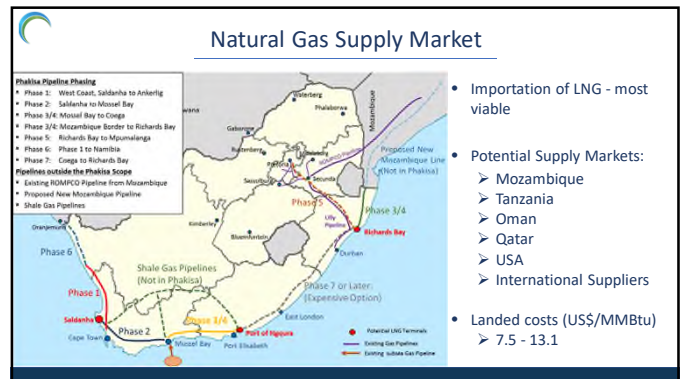
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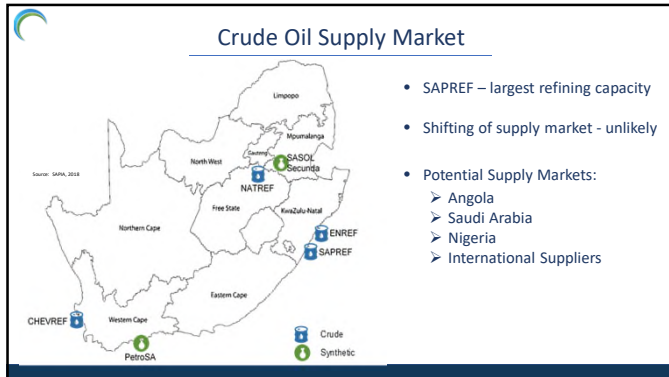
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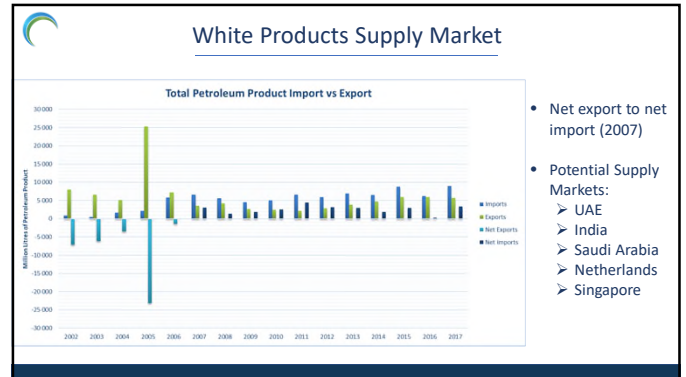
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Energy Demand Evaluation

- Product Supply
- **Energy Demand** - Energy Demand for natural gas, crude oil and white products
- Gap Analysis
- Regulatory Framework

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Africa and Sub-Saharan Demand

LEAP Modelling Tool Develop 3 scenarios/ energy access alternatives:

User-specified assumptions were based on:

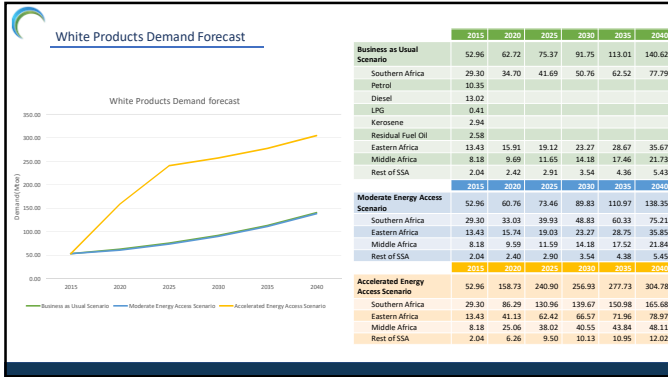
- Varying population growth figures
- Accompanying GDP forecasts

1. Business as Usual Scenario
2. Moderate Energy Access Scenario
3. Accelerated Energy Access Scenario

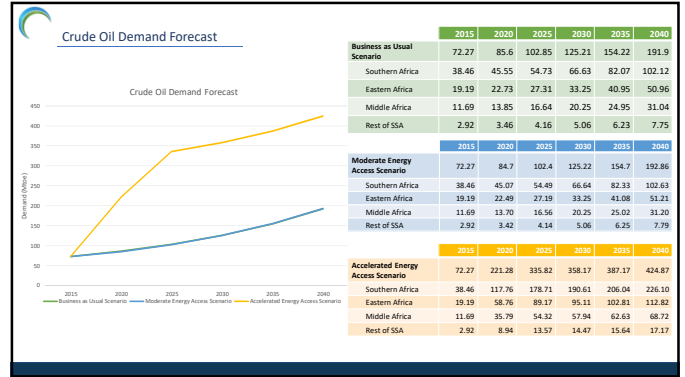
Results

Energy Summary	2015	2020	2025	2030	2035	2040
Business as Usual	131.5	155.3	187.4	229.0	283.0	353.2
Moderate Energy Access	131.5	156.8	190.7	234.5	291.2	364.7
Accelerated Energy Access	131.5	396.0	606.5	651.6	716.1	796.7

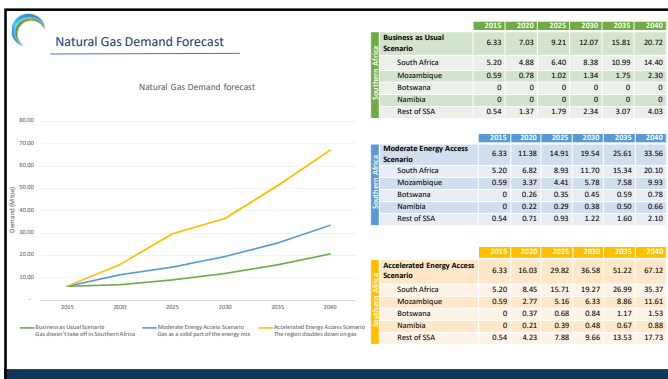
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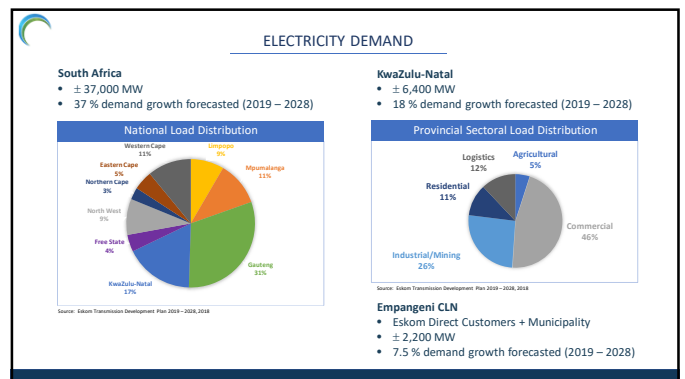
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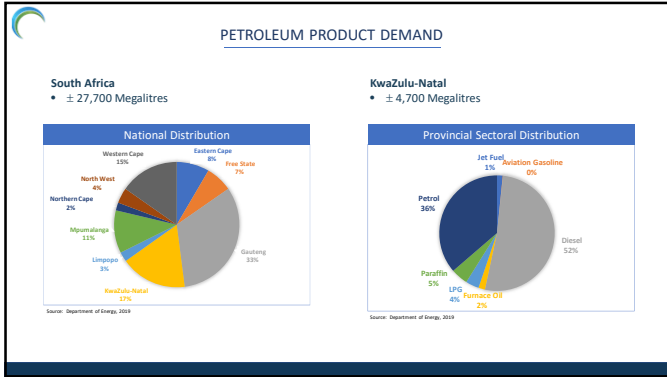
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Gap Analysis

- Product Supply
- Energy Demand
- **Gap Analysis** – PESTEL and SWOT Analysis
- Regulatory Framework

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PESTEL Analysis

- **Political:** The current and potential influences from political pressures.
- **Economic:** The local, national and world economic impact.
- **Social:** The ways in which changes affect society and the project.
- **Technological:** How new and emerging technology affects project.
- **Environmental:** Local, national and global environmental issues and concerns.
- **Legal:** How local, national and global legislation affects the project.


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SWOT Analysis

STRENGTHS

- Good existing transport infrastructure supporting oil and gas hub (rail and road);
- Land availability for potential Anchor Projects;
- Job creation and improved living conditions;
- Political support from Government and Operation Phakisa Ocean Economy initiatives;
- Improved energy security and energy diversity mix;
- Close proximity to Mozambique;
- Environment and community initiatives;
- New technology, infrastructure, innovation and research.

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SWOT Analysis

OPPORTUNITIES

- New oil and gas infrastructure in SA;
- Would be able to service the East and West Coast of African market;
- Limited gas and oil pipeline infrastructure in the country presents an opportunity for hub to expand;
- No LNG import terminals in Richards Bay and South Africa as a whole;
- Strong domestic energy demand growth;
- Increase in global and national demand for natural gas;
- Government's policy on reducing coal usage due to pollution to boost natural gas production;
- Job creation.

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SWOT Analysis

WEAKNESSES

- Small local skills pool available to the oil and gas hub;
- Converting existing operations to be powered by gas entails high development and switching costs;
- Environmental issues and hazards;
- Bulk water demand requirements;
- Classification of land for expansion and industrialisation;
- Major hub and port competitors.

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SWOT Analysis

THREATS


- Government interventions and Environmental laws;
- Government planned nuclear power projects and Increasing focus on renewable energy;
- Oil and Gas Commodity price fluctuations and unpredictability;
- Increased stakeholder scrutiny and resistance to pipeline projects (pipeline incidents);
- High environmental compliance costs;
- Oil and Gas Commodity price fluctuations and unpredictability;
- Natural disasters.

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Regulatory Framework Analysis

- Product Supply
- Energy Demand
- Gap Analysis
- Regulatory Framework – Legal Framework Review



20

 **Acts Considered**

- Constitution of the Republic of South Africa
- BBEE Act *
- Mineral and Petroleum Resources Development Act *
- National Energy Regulator Act
- Petroleum Pipelines Act
- Petroleum Pipeline Regulation
- The Gas Act, 2001 (Act No.48 of 2001)
- Electricity Regulation Amendment Act
- The National Environmental Management Act *
- The National Water Act, 1998
- Occupational Health and Safety Amendment Act and Labour Relations Act *

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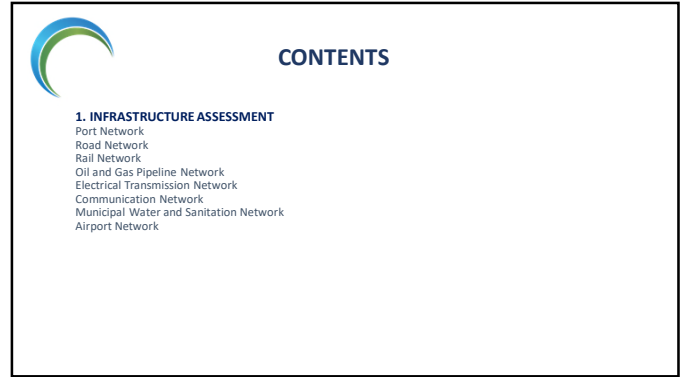
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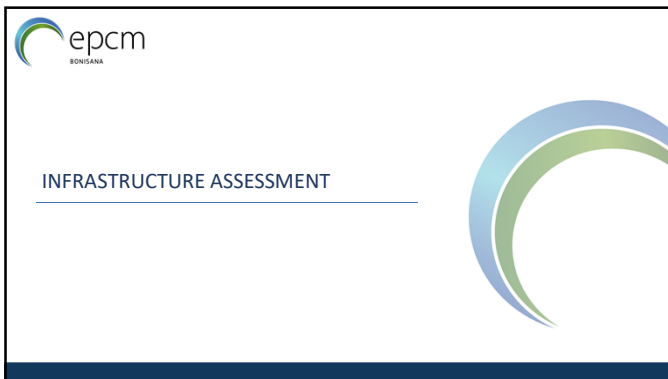
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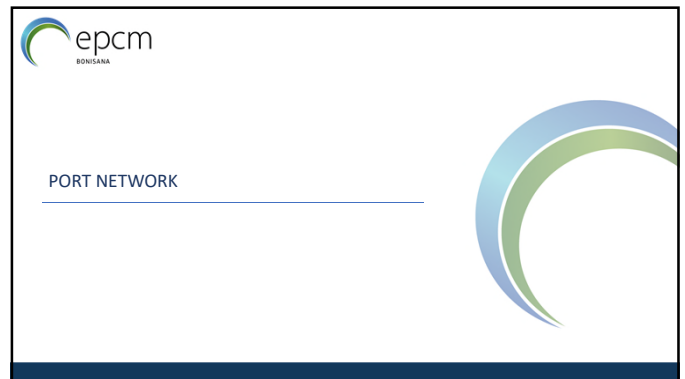
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EXISTING INFRASTRUCTURE

South African Ports:

- 13,000 ships call at ports every year
- 30,000 vessels sail along SA's coastline annually

Richards Bay's Port:

- Receives nearly 1,500 vessels per annum

Richards Bay Port Authority Services:

- Anchorage**
 - 3-5 nautical miles South-East of South Breakwater
- Berthing**
 - 23 berths
 - Between -8m and -19m CDP
- Pilotage**
 - Compulsory from 3 nautical miles South-East of South Breakwater
- Towing/Tug Assistance**
 - Compulsory with 3 Tugs and NSRI's deep-sea rescue craft
- Bunkering**
 - Fixed bunkering at Berth 209 (-12.5m CDP, 225m length) and Berths 301/302 (-17.5m CDP 350 m length)
 - Barge bunkering via Smit Energy and Amber II
- Ship Repair**
 - Quayside facilities at Small Craft Harbour
 - Professional divers for ship inspections
 - Not conducive to servicing vessels associated with off-shore oil and gas industry

VESSEL	Side View	Dimensions (L x B x D)
Container Feeder 3 000 TEU		210m x 30m x 11m
Dry Bulk: Handysize		177m x 28m x 10m
Dry Bulk: Panamax		229m x 32m x 14.8m
Dry Bulk: Cape Size		258m x 40m x 18m
Liquid Bulk: Handymax		180m x 32m x 11m

Source: TPA, ITR Chapter 4, 2015

5

PLANNED UPGRADES

- New Liquid Bulk Land**
 - 34 ha (2017-2023)
 - 40 ha (2024-2046)
- LNG Import Facility**
 - FSRU (2017-2023)
 - Terminal (2024-2046)
- Repair Facilities**
 - Floating Dry Dock (2026)
 - Dry Dock (2024 – 2046)

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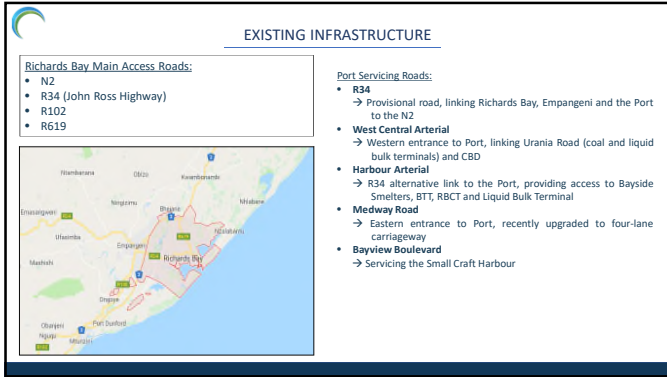
GAP ASSESSMENT

- Channel Depths**
 - Suitable for LNG tankers (Q-Flex @ 210,000 m³ and Q-Max @ 266,000 m³)
 - Only suitable for Panamax Oil Tankers (@ 500,000 barrels)
 - Deepening of channel depth to revised design depth of 21.1 m required to accommodate Aframax Oil Tankers (@ 800,000 barrels)
 - SBM required to accommodate Suemax (1,000,000 barrels), VLCC (2,000,000 barrels) and ULCC (4,000,000 barrels)
- Liquid Bulk Handling Facilities**
 - Currently available via Bidvest Tank Terminals
 - Short- and long-term planned capacity increasing projects
- Gas Bulk Handling Facilities**
 - No facilities currently available
 - New LNG berth planned for Berth 207 via a permanently moored FSGU (short-term)
 - Permanent LNG terminal planned for South Dunes Precinct dig-out basin (medium-term)
- Ship Repair Facilities**
 - Currently only quayside facilities available
 - Deepening of berth to -18m CDP, installation of floating dry dock and refurbishment of existing quay planned (short-term)
 - New ship repair terminal and dry dock planned west of Small Craft Harbour (medium-term)
 - First South African Port capable of servicing Cape Size vessels, Panamax oil, LNG Q-Flex and LNG Q-Max tankers

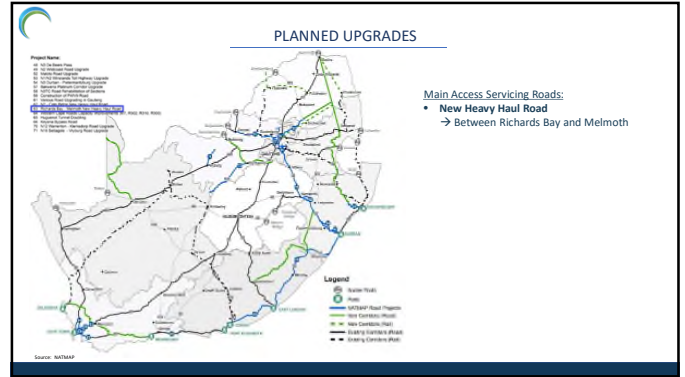
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ROAD NETWORK

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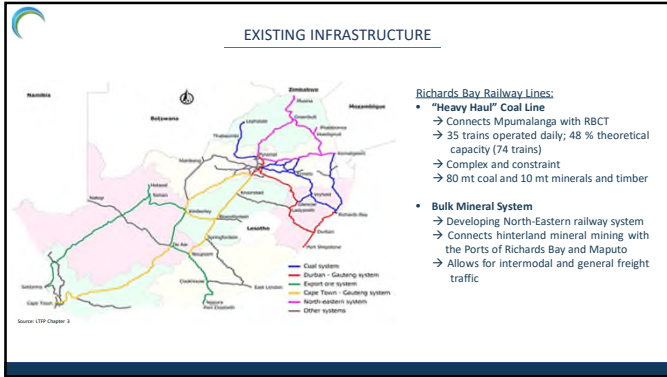
GAP ASSESSMENT

There is no direct access road from Richards Bay to Gauteng, with established access only available via R34 or the N2.

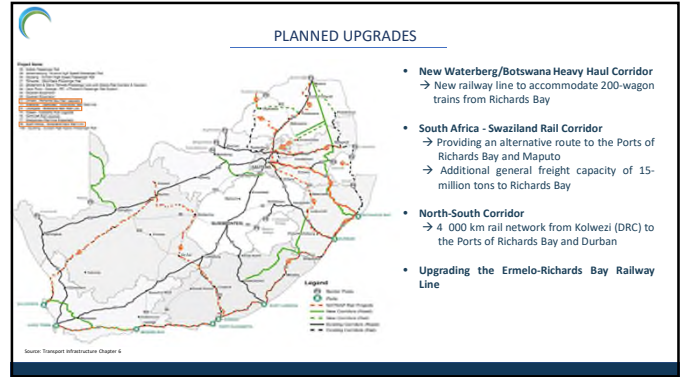
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RAIL NETWORK

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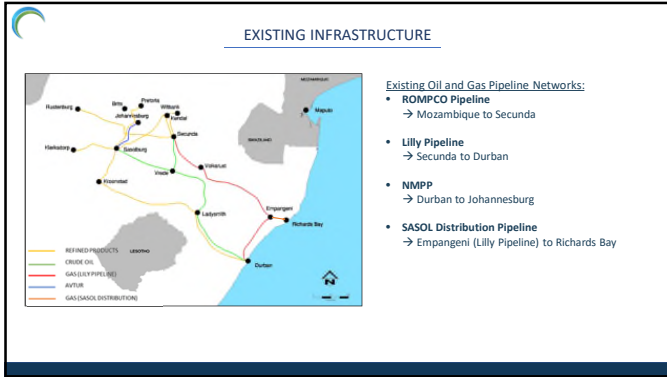
GAP ASSESSMENT

Existing infrastructure and planned upgrades seem sufficient for immediate and future needs.

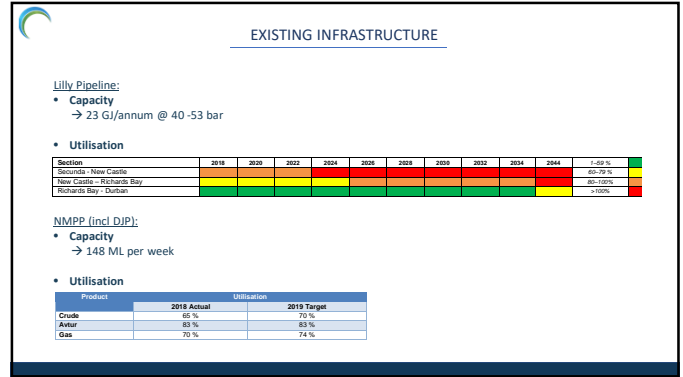
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OIL AND GAS PIPELINE NETWORK

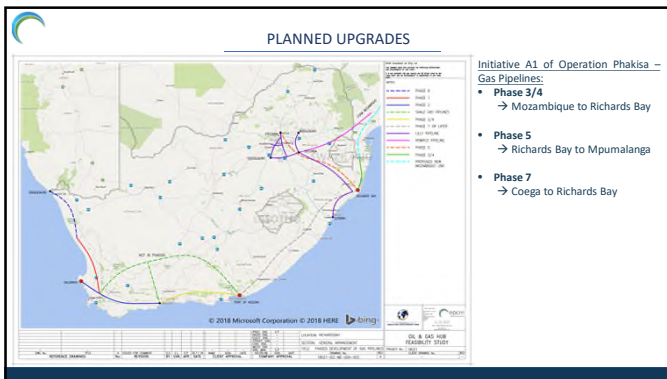
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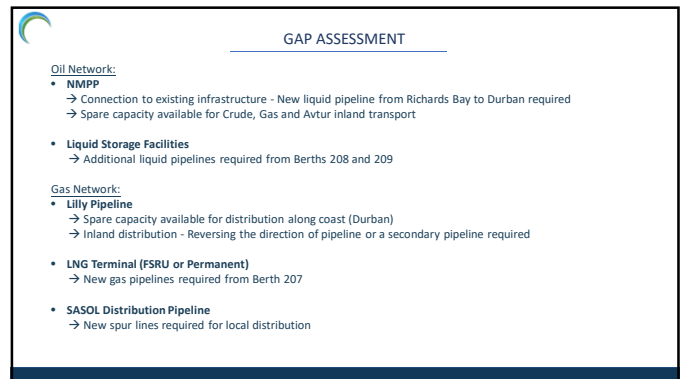
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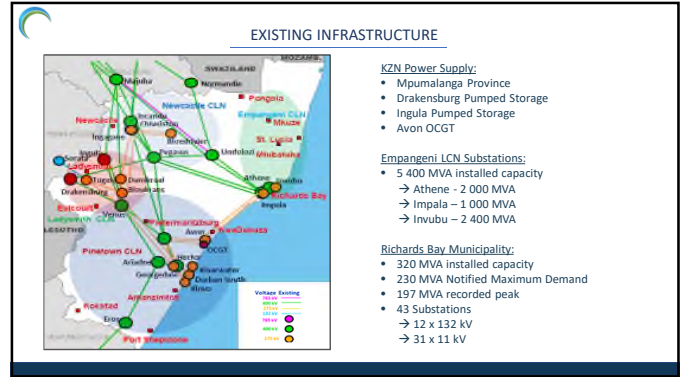
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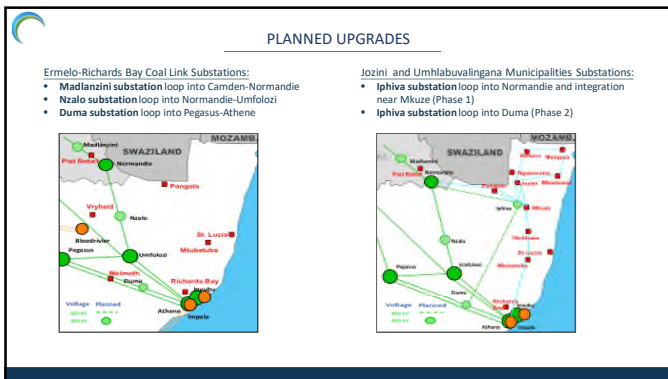
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GAP ASSESSMENT

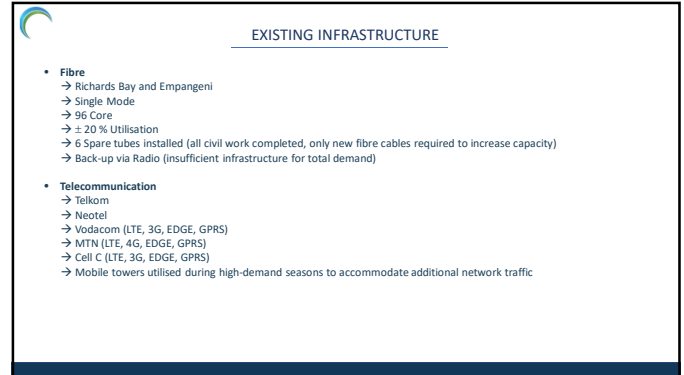
Planned electrical transmission network upgrades fall outside the boundaries of Richards Bay.

There is a clear need for additional sources of electricity in Richards Bay as well as country wide, with the maximum IPPs generation capacity available in the Empanjeni CLN area limited to 3,700 MW

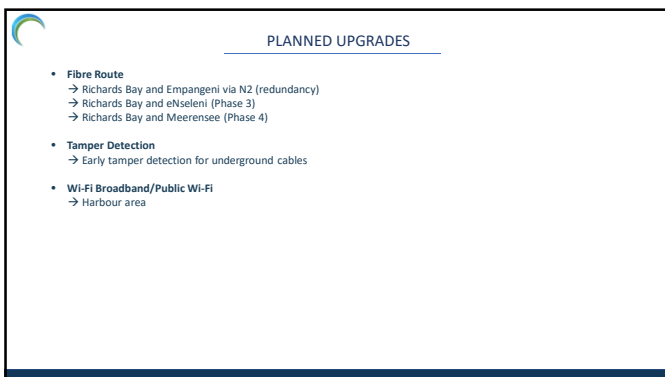
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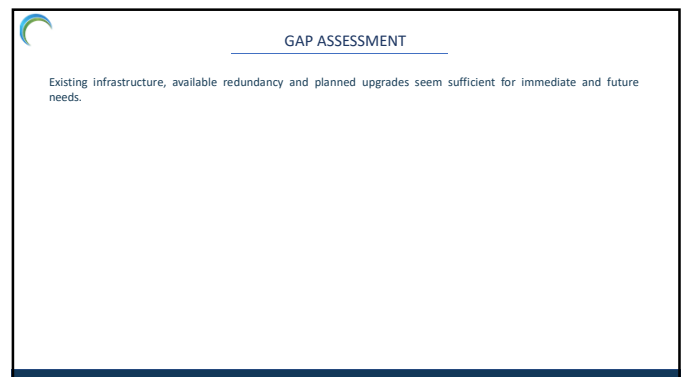
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MUNICIPAL WATER AND SANITATION NETWORK




29



EXISTING INFRASTRUCTURE

- **Richards Bay Water Supply System (RBWSS)**
 - Supplies City of uMhlatuze and large industries
- **Water Sources**
 - Mhlatuze river
 - Mfiofozi river
 - Lake Nhlabane
 - Lake Mzingazi
 - Lake Cubhu
 - Portable desalination plant (10 ML/day)
- **Water Treatment Works**
 - WSSA owned and operated
 - Mzingazi
 - Nqwelezane
 - eSikhaleni
 - Mhlatuze owned and operated
 - Nsezi
- **Offshore Waste Disposal System**
 - Operated by Mhlatuze Water
 - Two pipelines (buoyant line and dense line)
 - Transfer wastewater from
 - Richards Bay Industries
 - Nsezi WTP
 - uMhlatuze Municipality


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PLANNED UPGRADES

- **Mhlatuze Weir Structure**
 - Provide redundancy
 - New structure supplementing the existing weir
- **2.5 MVA Weir Standby Generator**
 - Augment power supply in the event of an Eskom power outage
- **New Raw Water Pipeline**
 - 1,500 m diameter
 - From Mhlatuze river to the Shooting Range
- **New Effluent Treatment Plant**
 - Treating industrial and domestic effluent
 - Re-use effluent as water supply to industries
 - 75 ML/d
- **Nsezi WTP Augmentation**
 - Increase output from 205 ML/d to 260 ML/d
- **New Raw Water Pipeline**
 - 1,500/1,200 mm diameter
 - From Mhlatuze Weir to Nsezi WTW

31



GAP ASSESSMENT

Planned upgrades seem sufficient for immediate needs.


32



AIRPORT NETWORK




33



EXISTING INFRASTRUCTURE

- **Type**
 - Public domestic
 - 100,000 Annual schedule arrivals
- **Operations**
 - Air Cargo
 - Recreational flying
 - Commuter schedule
 - Corporate and charter flights
 - Flying training
 - Aviation fuel sales
- **Runway and Taxiway**
 - Code 3C with restrictions (1,500 m long and 22 m wide)
- **Aircraft Parking**
 - 2 x Code C parking (24 m < Wingspan < 36 m)
 - 1 x Freight
- **Terminal Capacity**
 - 100 Passengers per hour

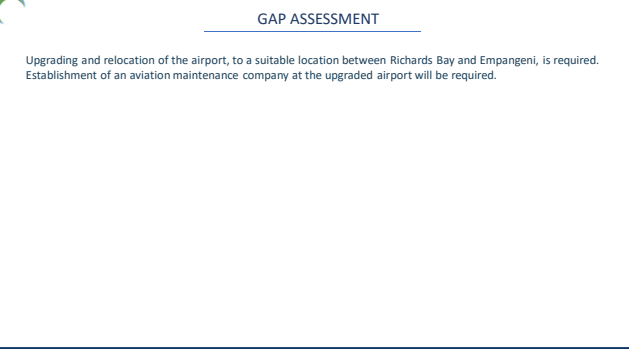
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PLANNED UPGRADES

- **Relocation**
 - Required due to peri settlement increase
 - Close proximity to N2
- **Airport Capacity**
 - Upgrade to 0.3 MAP
- **Airport Runway and Taxiway**
 - Upgrade to Code 4C (2,400 m long and 45 m wide)
- **Aircraft Parking**
 - Upgrade to 4 Code 3C bays
- **Terminal Capacity**
 - Upgrade to 250 passengers per hour

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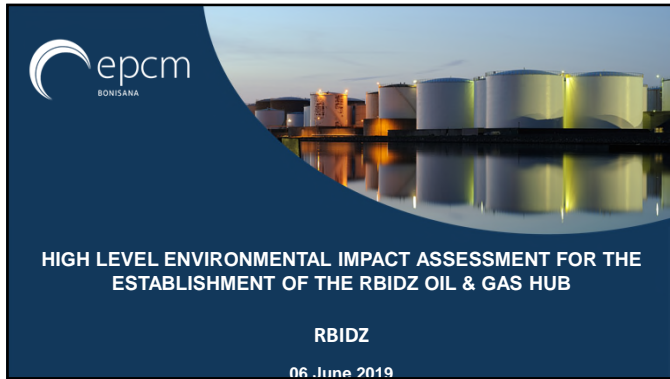
GAP ASSESSMENT

Upgrading and relocation of the airport, to a suitable location between Richards Bay and Empangeni, is required. Establishment of an aviation maintenance company at the upgraded airport will be required.

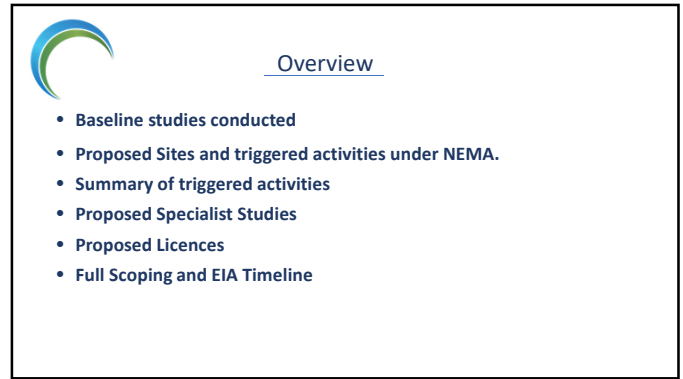
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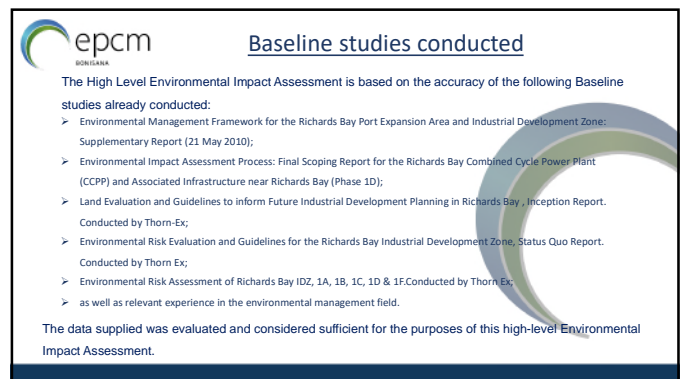
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Proposed Sites and Triggered Activities



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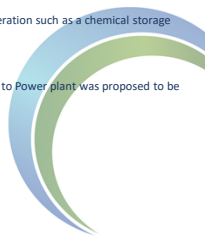


Proposed Sites and Triggered Activities


Phase 1C - Determined to accommodate a light/medium industry type of operation such as a chemical storage facility.

Phase 1D - Identified to accommodate a heavy industry operation and a Gas to Power plant was proposed to be allocated in the site.

Phase 2A - Assessed to accommodate the proposed Oil refinery.




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Triggered Activities : Phase 1C

Proposed Site	Proposed Triggered Activity
Phase 1C	<p>According to the opportunity analysis it is proposed that a storage facility with a capacity between 60 000m³ – 100 000m³ Be constructed on the site. In this case the following activities in terms of Listing Notice 2 will be triggered and this will lead to a Full Scoping and EIA.</p> <ul style="list-style-type: none"> Activity 4 - The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres. <p>An MHI to be considered for the construction of this storage facility</p>




7




Triggered Activities : Phase 1D

Proposed Site	Proposed Triggered Activity
Phase 1D	<p>Phase 1D was earmarked by Eskom for a Gas to power station.</p> <p>In terms of the scope of work the following activities in Listing notice 2 would be triggered and lead to a full Scoping and EIA:</p> <p>Activity 5 - The development and related operation of facilities or infrastructure for the <u>processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products with an installed capacity of 50 cubic meters or more per day, excluding activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies.</u></p> <p>Activity 2 - The development and related operation of facilities or infrastructure for the generation of electricity from a non-renewable resource where the electricity output is 20 megawatts or more.</p>




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Triggered Activities : Phase 1D

Proposed Site	Proposed Triggered Activity
Phase 1D	<p>Activity 9 - The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —</p> <ul style="list-style-type: none"> a) temporarily required to allow for maintenance of existing infrastructure; b) 2 kilometers or shorter in length; c) within an existing transmission line servitude; and d) will be removed within 18 months of the commencement of development. <p>Activity 7 - The development and related operation of facilities or infrastructure for the bulk transportation of dangerous goods —</p> <ul style="list-style-type: none"> I. in gas form, outside an industrial complex, using pipelines, exceeding 1 000 metres in length, with a throughput capacity of more than 700 tons per day; II. in liquid form, outside an industrial complex, using pipelines, exceeding 1 000 metres in length, with a throughput capacity of more than 50 cubic metres per day; or III. in solid form, outside an industrial complex, using funiculars or conveyors with a throughput capacity of more than 50 tons per day.

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Triggered Activities : Phase 2A

Proposed Site	Proposed Triggered Activity
Phase 2A	<p>It is proposed that this facility will generate between 200 000 – 600 000 barrels per day with a storage capacity of >100 000m³. If the storage capacity exceed 500m³ it requires a Full Scoping and EIA as per Activity 4 under the National Environmental Management Act (NEMA).</p> <p>Activity 4 -The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.</p>


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Summary of Triggered Activities




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Summary of Triggered Activities

Number of relevant notice and Act No.	Description
GN R984, Activity 4:	The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.
GN R984, Activity 5:	The development and related operation of facilities or infrastructure for the processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products with an installed capacity of 50 cubic meters or more per day, excluding activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies.


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Summary of Triggered Activities

Number of relevant notice and Act No.	Description
GN R984, Activity 6:	<p>The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding—</p> <ol style="list-style-type: none"> I. activities which are identified and included in Listing Notice 1 of 2014; II. activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; III. the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2000 cubic metres or less; or IV. where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.

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Summary of Triggered Activities

Number of relevant notice and Act No.	Description
GN R984, Activity 28:	<p>IF an AEL is required:</p> <p>[Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), excluding -</p> <ol style="list-style-type: none"> i. activities which are identified and included in Listing Notice 1 of 2014; ii. activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or iii. the development of facilities or infrastructure for the treatment of effluent, wastewater or sewage where such facilities have a daily throughput capacity of 2000 cubic metres or less.]

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Proposed Specialist Studies



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Proposed Specialist Studies

Environmental Specialist Studies
Air Quality Assessment (AQA)
Heritage Scoping Assessment (HAS)
Terrestrial Ecological Habitat Screening
Geohydrological Contamination Risk and Groundwater Assessment
Storm water Management Plan (SWMP)
Waste Management (WM)
Traffic Impact Assessment (TIA)
Heritage Impact Assessment (HIA)
Major Hazardous Installation (MHI)




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Proposed Licence Applications




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Proposed Licence Applications


Proposed License Applications
Air Emissions License (AEL)
Waste Management License (WML)
Water Use License (WUL)




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Proposed EIA Workplan




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Proposed EIA Workplan

The following work plan will become relevant should the application be listed as a full Scoping and EIA application.

- Phase A: Pre-Application**
- Phase B: Submission of Application to competent authority**
- Phase C: Submission of Scoping Report and Plan of Study for EIA**
- Phase D: Public Meeting**
- Phase E: Compilation and Submission of Environmental Impact Assessment (EIA) Report**
- Phase F: Inform Interested and Affected Parties (I&APs)**




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Full Scoping and EIA Timeline


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Full Scoping and EIA Timeline

Actions	Time	Department Time
Site Visit and initial project related discussions	1 week	-
First Phase Public Participation	30 days	-
Submission of Application to competent authority	1 week	10 days
Compile and submit Draft Scoping Report and Plan of Study (PoS) for EIA to IJAPs and the Department	14 days	Acknowledge of receipt of reports within 10 days
Amend reports and submit final Scoping Report and Plan of Study for EIA to the Department	1 week (depending on amendments required)	10 days of receipt Response within 43 days
Conduct EIA, compile and submit Draft EIA report and draft EMP	3 months	Acknowledge receipt of reports – 10days

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Full Scoping and EIA Timeline

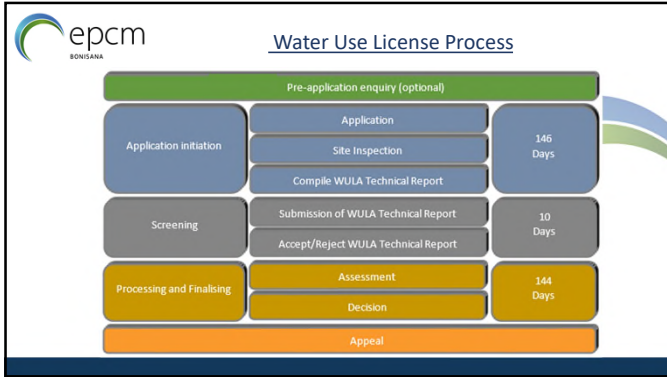
Actions	Time	Department Time
Amend (if required), compile and submit final EIA report and draft EMP	1 month	Acknowledge of receipt of reports within 10 days of receipt, Decision = 107 days after acceptance of final EIA Doc.
Site Visit and initial project related discussions	Within 14 days of receipt of decision	-
Total Time	± 10 - 12 months	± 12 - 18 months.

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Water Use License Process

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Conclusion

The sites assessed will be recommended for each type of operation. It should be noted that the type of operation influences the project location as well as the natural environment to great extents.

In general, it is proposed that the selected sites will require a Full Scoping and EIA with the identified licences playing a major role in the duration of the process.

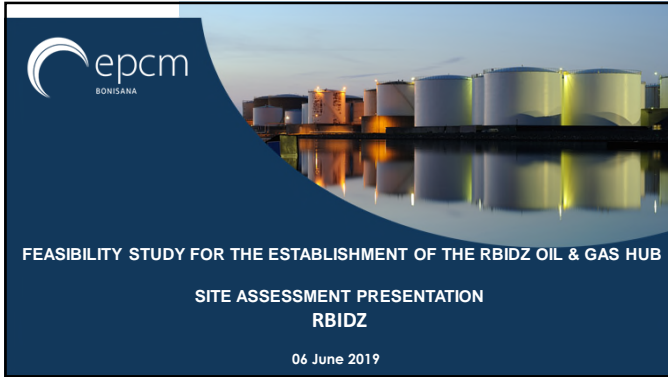
In order to determine exactly which licenses are needed, the exact amount of waste, emission and water present will be required to make an accurate conclusion, and this can only be determined after more detailed engineering has been completed.

The high level findings however indicate that the Richards Bay IDZ has great potential and the selected operations on the identified sites can feasibly be executed.

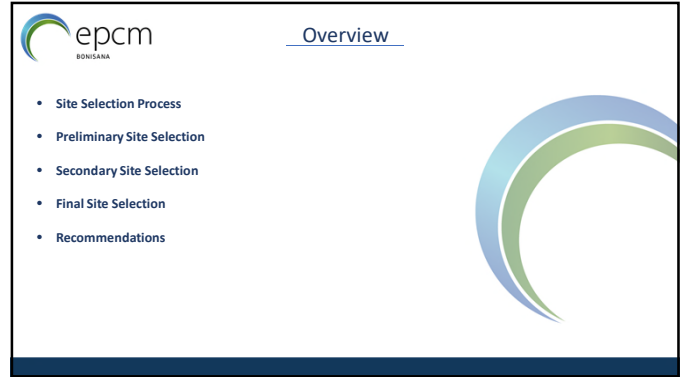
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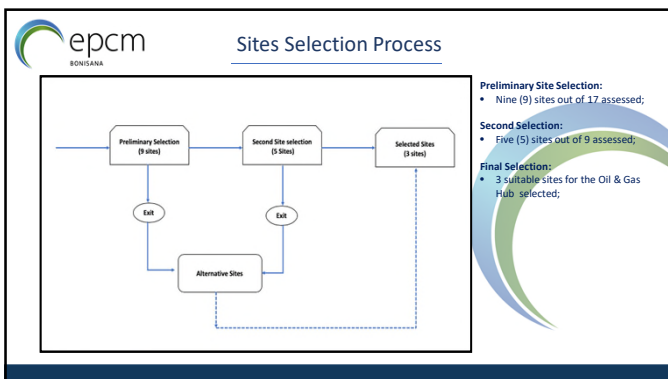
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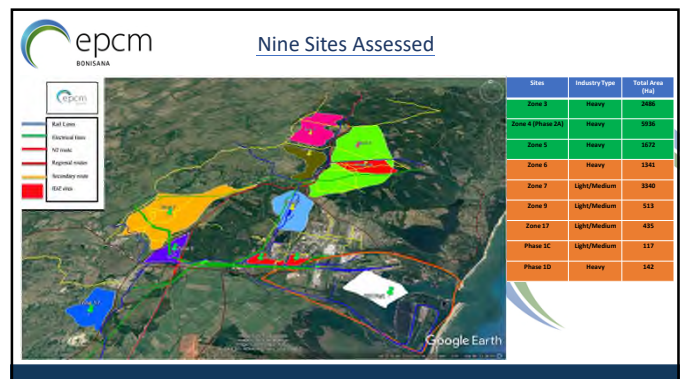
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BONISANA

Preliminary Site Selection

Criteria Used

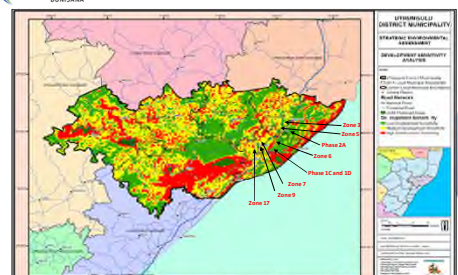
- Development Sensitivity developed by the KCDM;
- Geotechnical Constraints - Study conducted by Golder for the uMhlatuze LM;
- Groundwater Sensitivity - Study conducted by Golder for the uMhlatuze LM;



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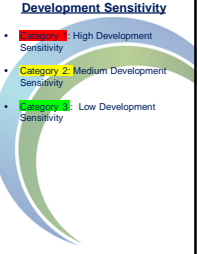
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Preliminary Site Selection



Development Sensitivity

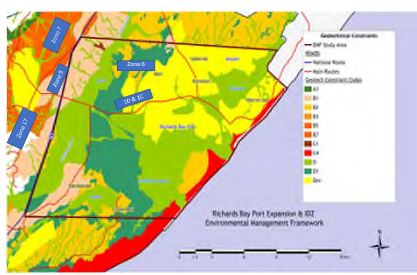
- **Category 1:** High Development Sensitivity
- **Category 2:** Medium Development Sensitivity
- **Category 3:** Low Development Sensitivity



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Preliminary Site Selection



Geotechnical Constraints:

- A:** Have no restrictions on development;
- B:** Are developable but with minor geotechnical and/or development constraints;
- C:** Is developable but with costlier geotechnical and/or development constraints. More detailed geotechnical investigations may be required.
- D:** Recommends no development, or more detailed geotechnical investigations required.

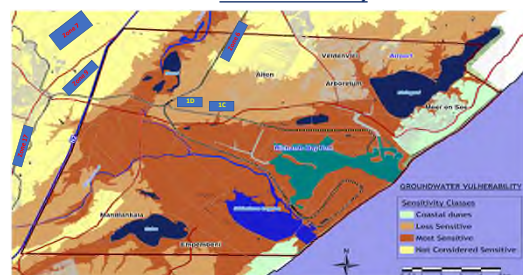
Richards Bay Port Expansion & BZ
Environmental Management Framework

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Preliminary Site Selection

Ground-water Sensitivity



GROUNDWATER VULNERABILITY

- Coastal dunes
- Low Sensitivity
- High Sensitivity
- Not Considered Sensitive

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Preliminary Site Selection: Findings

Zone/Site	Development Sensitivity	Geotech Constraints	Groundwater Sensitivity
Phase 1C	Low Development	D and Dev	Less Sensitive
Phase 1D	Low Development -	D1 and Dev	Less Sensitive
Zone 3	Medium Development Sensitivity	B6 ,B7 ,D and D	Less Sensitive
Zone 4 (Phase 2A)	Low Development	B2 and D	Less Sensitive
Zone 5	Low Development	N/A	Less Sensitive
Zone 6	Low Development	B3 , B5 ,B7 ,D and D1	Less Sensitive
Zone 7	Medium and High Development Sensitivity	B5 ,B7 ,D and D1	Not Considered Sensitive
Zone 9	Medium Development Sensitivity	B6 and D	Not Considered Sensitive
Zone 17	Medium and High Development Sensitivity	B3 , B5 and D	Not Considered Sensitive

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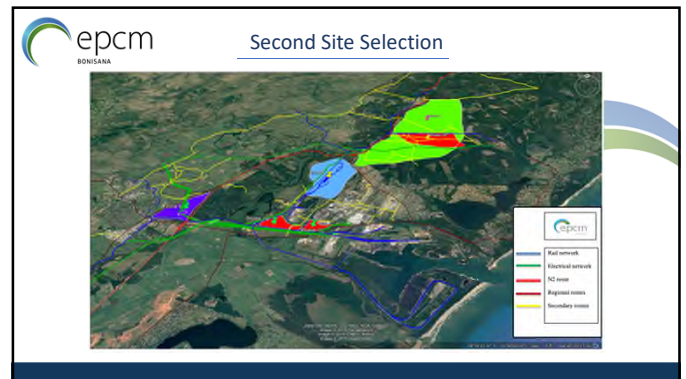
Preliminary Results

Zone/Site	Sensitivity			Selected Sites	Ratings (1 - 5)	
	Development	Geotechnical	Groundwater		1	5
Phase 1C	3	3	2	✓	Good	Acceptable
Phase 1D	3	3	2	✓	Fair	Fair
Zone 3	3	4	2	✗	Bad	Not Acceptable
Phase 2A	2	3	2	✓		
Zone 5	3	4	2	✗		
Zone 6	3	3	2	✓		
Zone 7	4	5	1	✗		
Zone 9	3	3	1	✓		
Zone 17	4	3	1	✗		

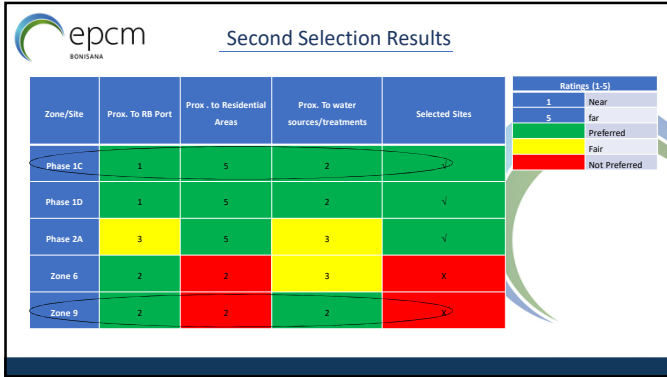
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- epcm**
BONISANA
- ### Second Site Selection
- Criteria Used: Proximity factor**
- Proximity to Richards Bay Port;
 - Proximity to Residential Areas; and
 - Proximity to Water sources and Treatment Works;

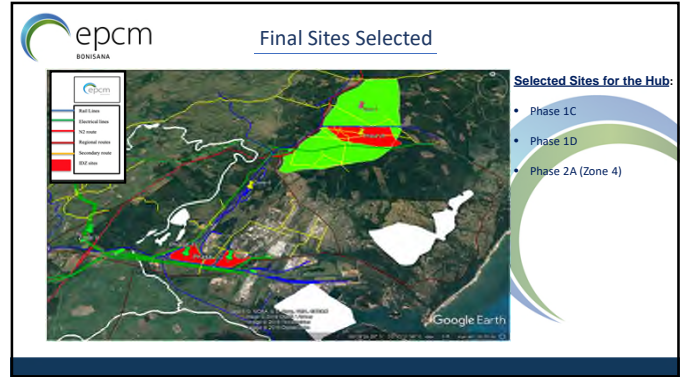
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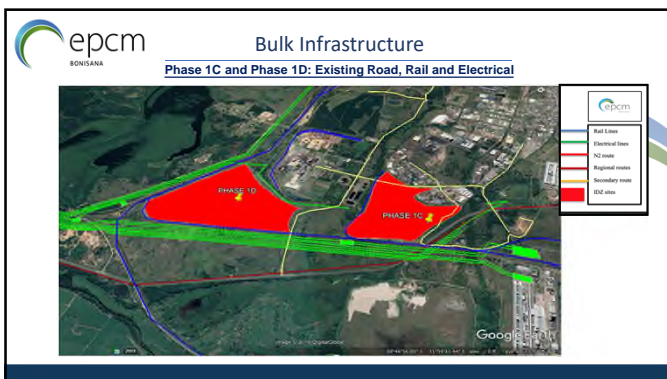
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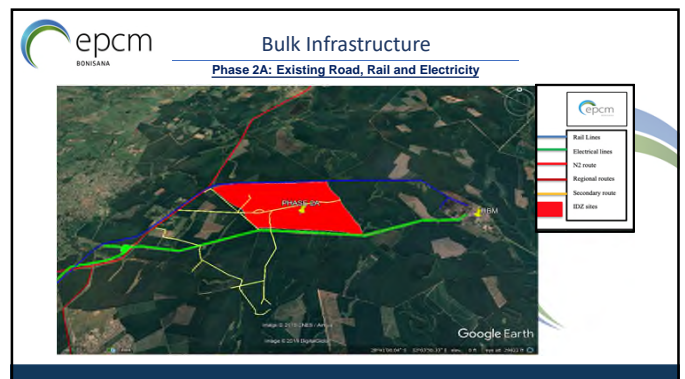
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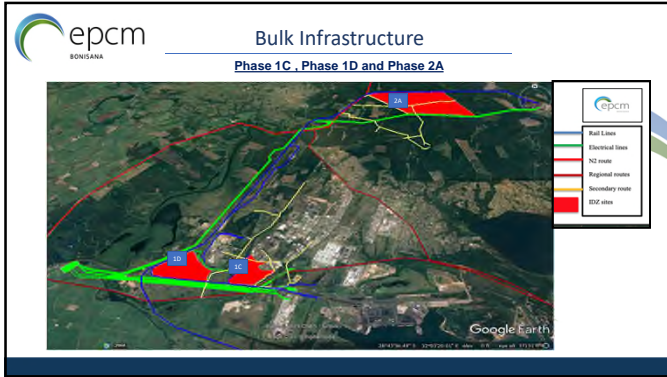
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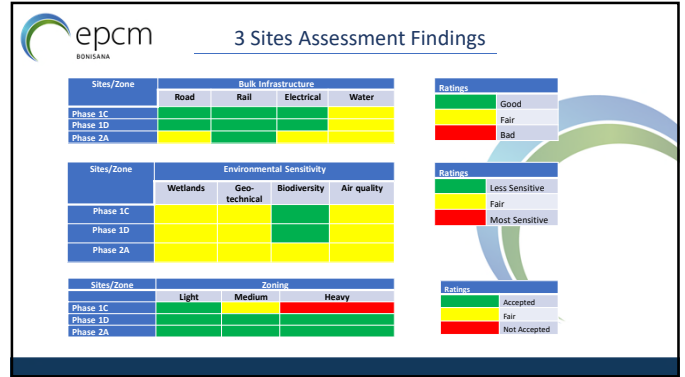
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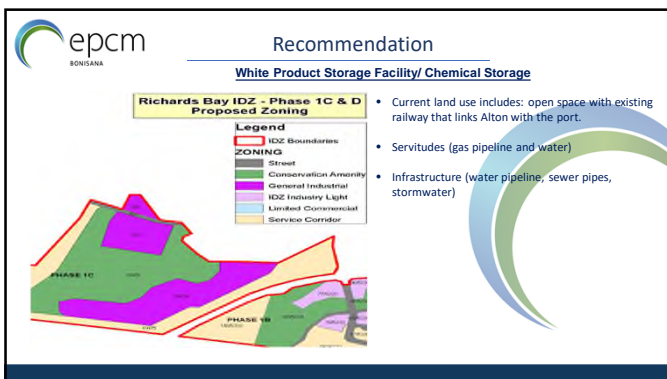
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Recommendation
Gas to Power: Phase 1D

Legend

- IDZ Boundaries

ZONING

- Street
- Conservation Amenity
- General Industrial
- IDZ Industry Light
- Limited Commercial
- Service Center



Phase 1D has its advantages

- The existing bulk infrastructure at proximity,
- Proximity to the port and related industries
- Less vegetation/plantation trees.

Current land use includes: open space with a road and associated stormwater infrastructure.


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Phase 1D




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Recommendation
Oil Refinery

Phase 2A has its advantages


- Close proximity to the port and economic hub (Gauteng)
- Recent indication by ENI/Sasol to explore the coast of KZN
- Eucalyptus tree plantation.



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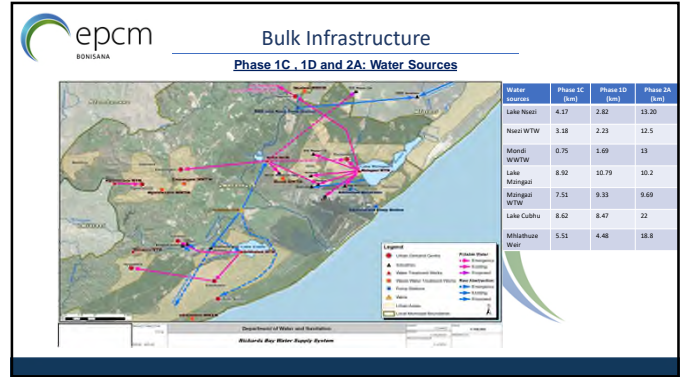
Phase 2A
Oil Refinery



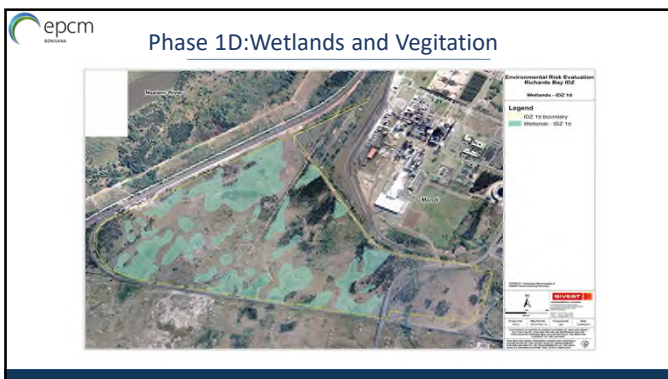
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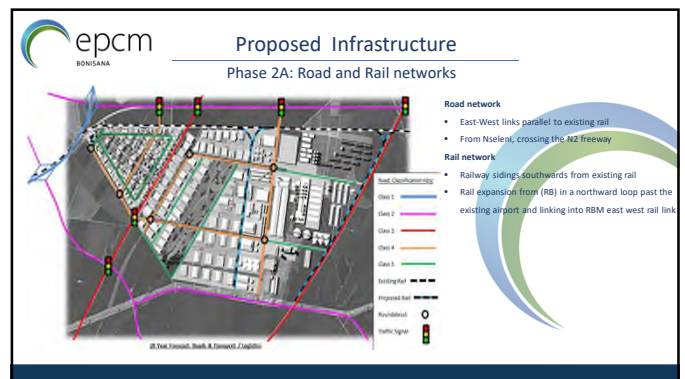
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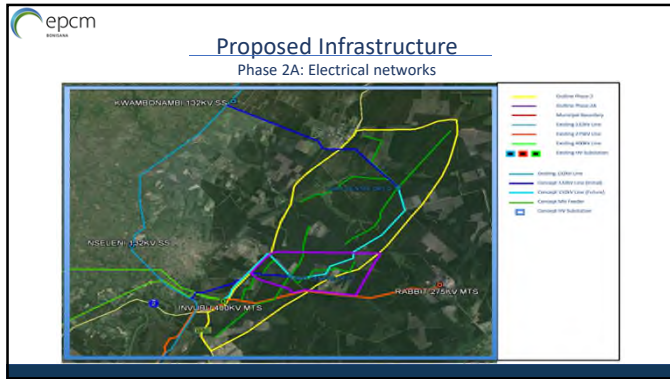
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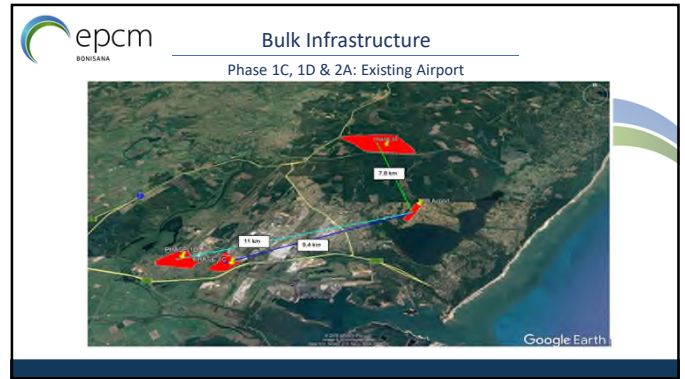
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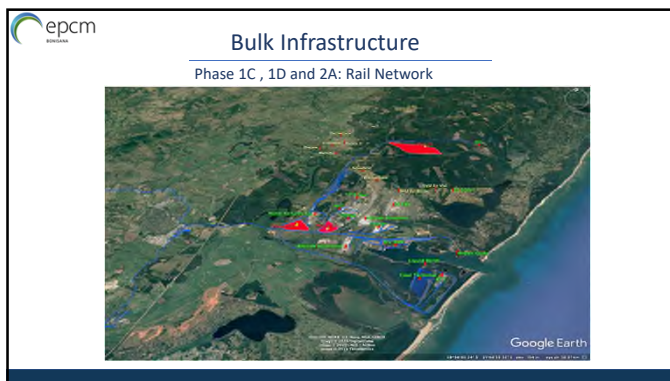
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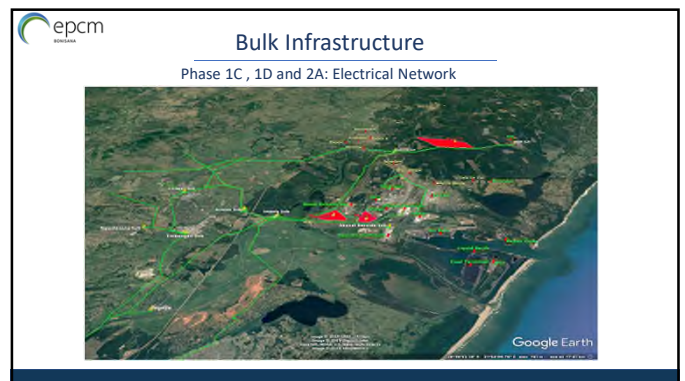
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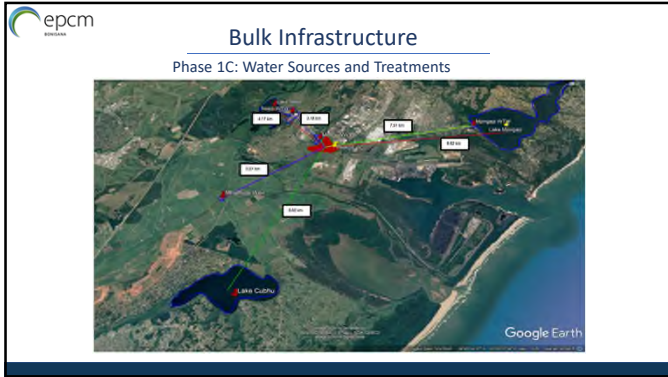
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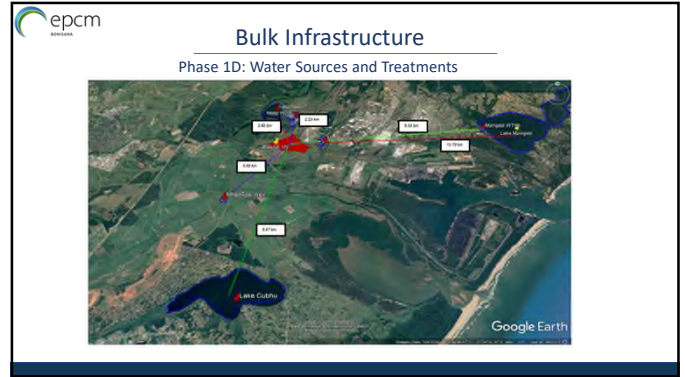
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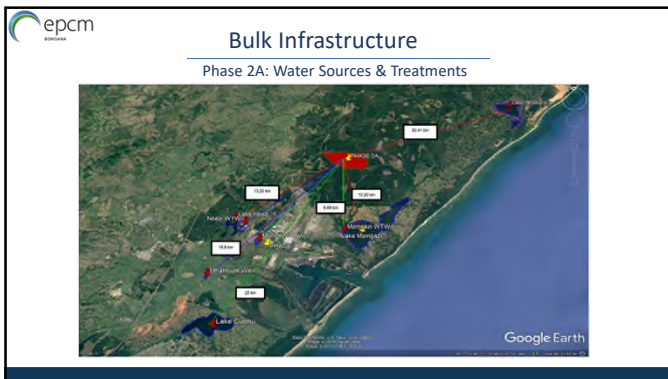
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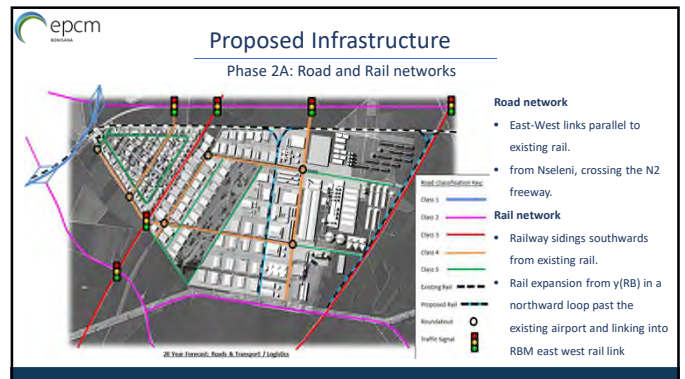
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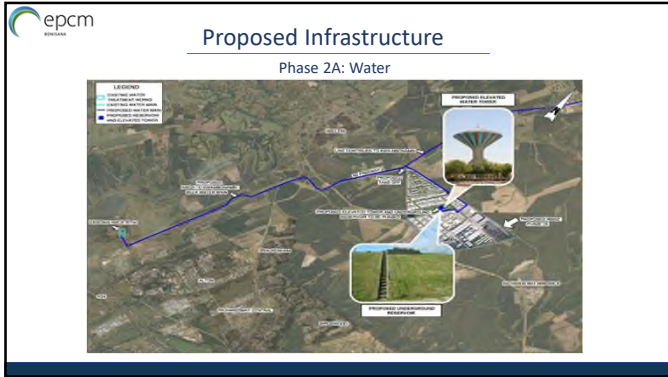
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