NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

APPLICATION FOR AN ELECTRICITY GENERATION LICENCE IN TERMS OF THE ELECTRICITY REGULATION ACT, 2006 (ACT NO. 4 OF 2006).

Please return completed form to:

HOD: Electricity Licensing and Compliance
National Energy Regulator of South Africa
Kulawula House, 526 Vermeulen Street
Arcadia, 0083
Pretoria

Or:

HOD: Electricity Licensing and Compliance
National Energy Regulator of South Africa
P.O. Box 40343
Arcadia
0007
Tel (012) 401 - 4600
Fax (012) 401 - 4700

SECTION A PARTICULARS OF APPLICANT

A1 Full name of applicant (business name) and business registration number

Karpowership SA Saldanha Bay (RF) Proprietary Limited
Reg. No: 2020/754347/07

A2 Address of applicant, or in the case of a body corporate, the registered head office

Physical address

164 Totius Street
Groenkloef, Pretoria

Postal address
Same as physical address

A3 Telephone number of applicant

As below

A4 Fax number of applicant

N/A

A5 Email address of applicant

Baris.Alimgil@karpowership.com

A6 Contact person

First name Kishoor

Surname Pitamber

Telephone No 011 682 2032

Mobile No 083 262 1473

Fax No. 011 432 6115

Email address kishoor@siriseng.co.za

A7 Legal form of applicant

- Company

  - **Applicant:**

Applicant	**Registration Number**
Karpowership SA Saldanha Bay (RF) Proprietary Limited	2020/754347/07

  - **Current Directors of Applicant:**

Name	**ID/Reg Number**
HAREZI YILMAZ, ZEYNEP	Redacted
KARADENIZ, ORHAN REMZI	Redacted
KATMER, MEHMET	Redacted
SECHABA NOTSI MAFA MOLETSANE	Redacted
NARISSA RAMDHANI	Redacted

Note to Section A

1) State whether the applicant is a local government body, a juristic person established in terms of an act of parliament, a department of state, a company or other legal body.

2) If the applicant is a local government body, attach a copy of the proclamation establishing such body. Where the applicant is a company, the full names of the current directors and the company registration number are required.

3) Executive summary

KARPOWERSHIP AT A GLANCE

- **Global** - diversified - high growth **unique** power generation enterprise
- Based on **Powerships** and floating **LNG assets**
- **Emerging** to **developed** markets, **long term** IPP projects or short to medium term bridge gap solutions (base load, peak shaving, mid-merit)
- 2,700 employees from 21 different countries

- 10,000+ jobs created around the world
- Project sizes from **small** (30MW) to **utility scale** (3,000MW)
- One stop shop: In-house **Design, EPC, O&M, Development** and **Investment** capabilities (own shipyard, strong balance sheet and human resources)
- Delivering **innovative** and flexible technical, contractual and financial solutions **for fast track implementation**
- **Eliminating** completion and construction related **risks** and **re-deployment flexibility** securing sustainable economics over the long lifetime of the assets
- **Turn-key** solutions covering the entire value chain, fuel supply to power generation
- **Improving environmental baseline**, utilizing state-of-the-art **technologies** and delivering a tangible instrument of change for migration to cleaner fuels
- Embracing all international HSE regulations and **global best practices**
- **Power for people**: Local integration, energizing local communities and economies

A UNIQUE PROPOSITION

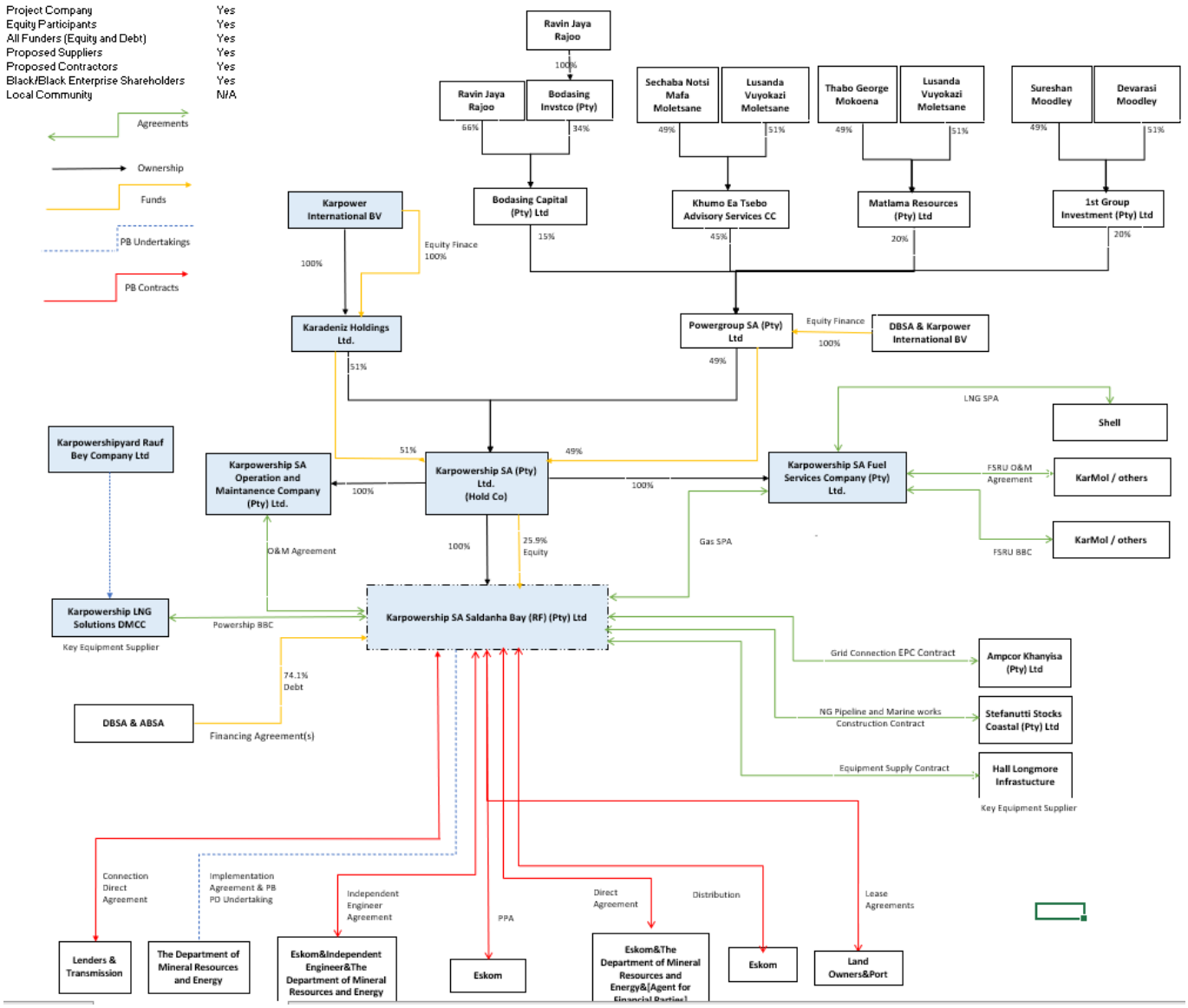
- *A Powership is a **floating power plant**, either self propelled or barge mounted*
- ***Karpowership owns and operates the world's first integrated floating LNG to Power fleet***
- *Powerships:*
  - ***delivered in 3 – 6 months** ready to operate*
  - *deliver the **most competitive** cost of electricity*
- ***30 completed Powerships** with an **installed capacity exceeding 5000 MW***
- ***4000 MW in the construction pipeline** with capacities ranging between 30 – 620 MW*

PROJECT LOCATIONS

Coegha (Port Elizabeth)
450 MW
1xKhan class Powership
1xShark class Powership
1xFSRU

Richards Bay
450 MW
1xKhan class Powership
1xShark class Powership
1xFSRU

Saldanha Bay
320 MW
1xKhan class Powership
1xFSRU


Project Company Yes
Equity Participants Yes
All Funders (Equity and Debt) Yes
Proposed Suppliers Yes
Proposed Contractors Yes
Black/Black Enterprise Shareholders Yes
Local Community N/A
Agreements
Ownership
Funds
PB Undertakings
PB Contracts
Ravin Jaya Rajoo
100%
Ravin Jaya Rajoo
66%
Bodasing Invstco (Pty)
34%
Sechaba Notsi Mafa Moletsane
49%
Lusanda Vuyokazi Moletsane
51%
Thabo George Mokoena
49%
Lusanda Vuyokazi Moletsane
51%
Sureshan Moodley
49%
Devarasi Moodley
51%
Karpower International BV
100%
Equity Finace
100%
Bodasing Capital (Pty) Ltd
15%
Khumo Ea Tsebo Advisory Services CC
45%
Matlama Resources (Pty) Ltd
20%
1st Group Investment (Pty) Ltd
20%
Karadeniz Holdings Ltd.
51%
Powergroup SA (Pty) Ltd
49%
Equity Finance
100%
DBSA & Karpower International BV
LNG SPA
Shell
Karpowershipyard Rauf Bey Company Ltd
Karpowership SA Operation and Maintanence Company (Pty) Ltd.
100%
51%
Karpowership SA (Pty) Ltd. (Hold Co)
49%
100%
Karpowership SA Fuel Services Company (Pty) Ltd.
FSRU O&M Agreement
KarMol / others
FSRU BBC
KarMol / others
O&M Agreement
100%
25.9% Equity
Gas SPA
Karpowership LNG Solutions DMCC
Powership BBC
Key Equipment Supplier
Karpowership SA Saldanha Bay (RF) (Pty) Ltd
74.1% Debt
DBSA & ABSA
Financing Agreement(s)
Grid Connection EPC Contract
Ampcor Khanyisa (Pty) Ltd
NG Pipeline and Marine works Construction Contract
Stefanutti Stocks Coastal (Pty) Ltd
Equipment Supply Contract
Hall Longmore Infrastucture
Key Equipment Supplier
Connection Direct Agreement
Implementation Agreement & PB PD Undertaking
Independent Engineer Agreement
PPA
Direct Agreement
Distribution
Lease Agreements
Lenders & Transmission
The Department of Mineral Resources and Energy
Eskom&Independent Engineer&The Department of Mineral Resources and Energy
Eskom
Eskom&The Department of Mineral Resources and Energy&[Agent for
Eskom
Land Owners&Port

SECTION B COMMENCEMENT DATE OF LICENCE

B1 Desired date from which the licence (if granted) is to take effect

31 August 2022

Note to Section B

4) The normal processing time for a licence application is 120 days once all relevant information has been provided and there are no objections received.

    - **Please refer to Section K (Additional Information) to this form.**

5) If the applicant intends operating more than one generation station under the proposed licence, please complete separate application forms for each generation station.

SECTION C PARTICULARS OF PROPOSED GENERATION STATION

C1 Name of generation station

Saldanha Bay Powership

C2 Geographical location of generation station (please attach maps) and GPS coordinates (x^0xx'xxx" S, y^0yy'yyy" E)

33° 0'44.95"S, 17°59'45.10"E

C3 Address of generation station

Port of Saldanha Bay

C4 Contact person at generation station

First name and Surname	Kishoor Pitamber
Telephone No	011 682 2032
Mobile No	083 262 1473
Fax No	011 432 6115
Email address	kishoor@siriseng.co.za

C5 Type of generation station (thermal, nuclear, hydro, pumped storage, gas turbine, diesel generator or other) (Please specify)

Natural gas fuelled Combined Cycle (Heat Recovery Steam Turbine) Thermal Generation

C6 Expected commissioning date for a proposed generation station or at which the station was commissioned (if an existing station). Also state construction period required if applicable.

31 August 2022

C7 The installed capacity (existing and/or planned) of each unit within the generation station (MW)

Existing Capacity (Nameplate rating)

N/A

Planned Capacity (nameplate rating)

414 MW (18.32 MW x 21Gas Engine + 2 x 15 MW STG)

The contract capacity for the Saldanha Bay Project is 320 MW. The generating station that will be utilized to supply the contracted capacity is planned to have a higher installed capacity. The configuration of the generating facility is planned to be 21 x 18.32 MW gas engines + 2 x 15 MW heat recovery steam turbines.

The total planned installed capacity is 414 MW. Having excess capacity will ensure high availability, high reliability and security of supply via the built-in redundancy. It will also improve the generating station's capability for ancillary services such as voltage and frequency regulation even when the station is operating at its maximum contracted capacity.

Powerships utilize modular internal combustion engine technology which provides industry leading dispatch flexibility and ancillary service capability; thus, also providing the most efficient solution for lower dispatch levels / load factors – increasing flexibility.

Because of ease of integration , we are using our Powerships from our fleet which are ready to deploy. Powership designs are unique and standardized. Even we have the excess capacity, our affordable pricing strategy drove economies of scale to achieve one of the lowest priced project under RMIPPPP.

C8 Maximum generation capacity (MW) expected to be available from the generation station and energy to be produced (MWh) over the next 5years of operation. These estimates should be based on modelling of how the power station will fit into the demand profile of its customers, taking into account the least cost energy purchase consideration and demand management options of customers.

YEAR	Max MW	Total MWh	Own use MWh	Export (Sales) MWh
2022	**320**	**943,394**	**23,010**	**920,384**
2023	**320**	**2,827,308**	**68,959**	**2,758,349**
2024	**320**	**2,827,973**	**68,975**	**2,758,998**

2025	**320**	**2,811,504**	**68,573**	**2,742,931**
2026	**320**	**2,804,321**	**68,398**	**2,735,923**

C9 Estimate of the energy conversion efficiency of the generation station/ Capacity factor where applicable.

9160 MJ/MWh; estimate of conversion efficiency: 43.6%

C10 Expected future life of the generation station.

25 Years

SECTION D PARTICULARS OF LONG-TERM ARRANGEMENTS WITH PRIMARY ENERGY SUPPLIERS

D1 Name of primary energy supplier/s (mining house, colliery or other fuel supplier) if applicable

- **Fuel Supplier: Redacted**

D2 Particulars of the contractual arrangements with primary energy supplier if applicable

- **Contractual Arrangement:-**

Redacted

Notes to Section D

6) Please provide brief particulars of any long term agreements entered into with fuel suppliers and copies of such contracts (Signed Fuel Supply Agreements).

- **Particulars of Fuel Supply Arrangements**

Redacted

Attachment: See Item 2 in the Support Documents - Table of Contents. Redacted

SECTION E MAINTENANCE PROGRAMMES AND DECOMMISSIONING COSTS

E1 Details of any proposed major maintenance programmes, including the expected cost and duration thereof, covering the next six years. Project proposals to state the expected availability, planned outage rate and forced outage rate of the plant over the first five years of operation.

Redacted

Attachment: See Item 7 in the Support Documents - Table of Contents. Redacted

E2 Details of any major decommissioning costs expected during the life span of the power station and provided for in the project feasibility study.

E3 Details of major generation station expansion and modifications planned for in the feasibility study (Dates, Costs in Rands (state year) and description)

- Redacted

SECTION F CUSTOMER PROFILE

F1 Particulars of the person or persons to whom the applicant is providing or intends to provide electricity from the generation station

Redacted

F2 Network connection details (connection points, voltages, wheeling arrangement, single line diagram)

- Redacted

- Redacted **Attachment:** See Item 6 in the Support Documents Table of Content Redacted

- Redacted **Attachment:** See Item 3 in the Support Documents - Table of contents

Redacted

F3 Provide summary details of Power Purchase Agreements with customer including purchasing price etc. (Please attached Power Purchase Agreements). Redacted

- **Summary of Power Purchase Agreement: -**

- Redacted

Attachments:

See Item 4 in the Support Documents - Table of Contents. Redacted

Attached as Annexure A of the Supplementary Annexure Bundle is the returnable schedules submitted as part of the applicant's bid response containing the information that will be used to populated the schedules to the Power Purchase Agreement. Redacted

Notes to Section F

1) For example, supply to ESKOM or supply to local government distribution system. Please include the details of power purchase agreements entered into and the price structure of the contract.

Redacted

SECTION G FINANCIAL INFORMATION

G1 Submit projections of and current statements of the accounts in respect of the undertaking carried on by the applicant, showing the financial state of affairs of the most recent period, together with copies of the latest audited annual accounts where such have been prepared.

Redacted

G2 Submit annual forecasts for the next five years of costs, sales and revenues generated by the project, stating the assumptions underlying the figures.

Redacted

- **Attachment:** See Item 7 in the Support Documents - Table of Contents. Redacted

G3 Estimates of net annual cash flows for subsequent periods (5 years; 10 years; 15 years) sufficient to demonstrate the financial security and feasibility of operating the generation station.

- Redacted
- **Attachment:** See Item 7 in the Support Documents - Table of Contents. Redacted

G4 Project financing: Who will finance the project, how is funding split between debt and equity, and what is the terms and conditions of the funding agreements.

- Redacted

Attachment: See Item 7 in the Support Documents - Table of Contents. Redacted

In addition, also fill in table below:

Total capital cost of the project (including IDC)	
Interest During Construction (IDC)	
Post tax real IRR (for the whole project)	Redacted
Nominal IRR after Tax (for the whole project)	
Debt/Equity Ratio	
Payback period	

Notes to Section G

2) The financial projections should be based on a production plan for the generation station and the revenue generated by participating in the electricity market and by bilateral contracts (Power Purchase Agreements) with customers. Reference to the latest version of National Integrated Resource Plan (IRP) is required to demonstrate that the proposed power purchase agreement is the least cost solution available to the electricity purchaser.

   Redacted

SECTION H HUMAN RESOURCES INFORMATION

H1 Submit details of the number of staff and employees and their categories in the service of the applicant at the generation station and in any support services separate from the generation station. Also provide information regarding relevant qualifications and experience in critical areas e.g. Professional registration (Engineering Council of South Africa – ECSA), Government Certificate of Competency.

1. **What is the skill level for working on the project?**

   Redacted

2. **What types of jobs will be available during construction and then during operations for the local immediate community?**

   Redacted

3. Training and Powership Academy

Redacted

Attachment: See Item 8 in the Support Documents - Table of Contents. Redacted

SECTION I PERMISSION FROM OTHER GOVERNMENT DEPARTMENTS OR REGULATORY AUTHORITIES

I1 What progress has been made to obtain the required permits and approvals for the generation project? Please provide copies of permits issued by the relevant environmental and safety agencies in respect of the operation of the generation station.

OVERVIEW OF ENGAGEMENTS WITH GOVERNMENT AND REGULATORS

Engagements are underway with all key stakeholders.
Most processes and approvals required for fulfilling the PB PD Undertakings are in progress and on schedule:

- Environmental Approval (EA) applications submitted on the 26th April 21
- NERSA applications submitted including Generation and Distribution licenses
- Eskom Budget Quote applications submitted, and fees paid
- Engagements commenced with SARS
- Independent Engineer candidates submitted awaiting approval from IPP Office
- Ring fenced project companies established
- Transmission lines approved in principle subject to conclusion of land consents
- Water use, permitting and licensing ongoing
- Discussions with lenders and lender advisors underway
- All gas license applications have been submitted
- Shared port infrastructure - discussions with Total are ongoing

LICENCES AND APPROVALS

- The Applicant has commenced discussions with the TNPA regarding the relevant authorisations required to be obtained in respect of the National Ports Act. A copy of the agreement will be provided to NERSA once concluded.
- The Applicant has submitted and/or is in the process of submitting the relevant licence applications required pursuant to the Gas Act in order to construct and operate the gas pipeline between the FSRU and the powership(s).
- The fuel supplier has submitted and/or is in the process of submitting the relevant licence applications to NERSA in order to operate the regasification unit and the storage tanks on the FSRU and the trade in gas.

ENVIRONMENTAL AND SAFETY PERMITS

Attachments: See Item 9 in the Support Documents - Table of Contents.

NEMA: Environmental Authorisation & EMPr

The Scoping and EIA is required in terms of the environmental authorisation. The Scoping Phase was undertaken during 2020 and the Scoping and Plan of Study approved by DEFF on 06 January 2021. The EIA Phase commenced thereafter and the Public Participation Process for the Draft

EIAR closed on 31 March 2021. The final EIAR and EMPr are planned to be submitted on 21 April 2021. DEFF to issue a decision within 57 days. Please refer to attached approved Scoping and Plan of Study and I&AP Notice for EIA Phase.

Waste Management Licence:

No Waste Management License is required. Please refer to attached independent Legal Opinion.

Integrated Water Use Licence:

Not Integrated Water Use Licence is required. Please refer to attached independent Legal Opinion.

GN R704:

GN R704 is not applicable.

Approvals in terms of sections 6 and or 7 of the Water Services Act, 108 of 1997:

Water Services Act, 108 of 1997 is not applicable.

Provisional atmospheric emission licence, in terms of the NEMAQA:

The Public Participation Process was completed as part of the EIAR process. The online SAAELIP was submitted in March 2021. The draft Air Emissions Impact Report was updated following the Public Participation Process. Awaiting the decision from DEFF: Air Quality. Please refer to attached proof of submission.

Biodiversity and or conservation permits, in terms of the NEMBA:

Site walkover of the potential alignments will be conducted in early April 2021 and the permits compiled for submission.

Biodiversity off-set programme:

No biodiversity off-set programme is required.

Protected tree licences, in terms of the NFA:

Site walkover of the preferred alignment will be conducted in early April 2021 and the permits compiled for submission DFFE.

Biodiversity and or conservation permits, in terms of the CARA:

Site walkover of the preferred alignment will be conducted in early April 2021 and the permits compiled for submission to DFFE.

Biodiversity and or conservation permits, in terms of other applicable provincial laws:

Site walkover of the preferred alignment will be conducted in early April 2021 and the permits compiled for submission.

Heritage approvals in terms of the NHRA/other applicable provincial laws, and if applicable, Phase II mitigation permits and other heritage approvals:

A Heritage Impact Assessment and Underwater Archaeological Impact Assessment were concluded for the terrestrial and underwater environments. No heritage aspects were identified and no permits are currently required. Comments were received from Heritage Western Cape and further comments are anticipated in early April 2021. A Phase II Mitigation Permit from SAHRA will be required if any archaeological material is removed from `the site'. This would apply during monitoring of vegetation clearing operations and bulk earthworks/excavations (terrestrial and underwater component). Please refer to attached SAHRA and HWC comments.

Dam safety licence and registration certificates in terms of the NWA (or the equivalent thereof as required by former water laws, including registration for waste water treatment works):

Not applicable.

Coastal Water Discharge Permit in terms of NEM:ICMA:

A letter was submitted to DEFF to clarify the applicability. DEFF confirmed a Coastal Water Discharge Permit is not applicable. Please refer to attached.

Written Approval from the South African Civil Aviation Authority for consent in terms of the Civil Aviation Act, 2009 to erect a potential obstacle to aviation

Application was made to CAA in November 2020. The CAA representative indicated that the application is currently processed. Written consent is imminent.

MUNICIPAL CONSENTS:

Controlled Emitters in terms of the NEMAQA:

Applications are currently being compiled for submission to the Local Authority –West Coast District Municipality.

The Fire Safety By-Law, 2007 & Permit for permanent or temporary above-ground storage tank for a flammable liquid

The Fire Chief was identified and engagement to follow this week to finalise applications.

Permits, certificates and notifications in terms of the Occupational Health and Safety Act, 1993, including registration with the local authority as a major hazard installation in terms of the Major Hazard Installation Regulations, 2001

The Fire Chief was identified and engagement to follow this week to finalise applications.

Operation of an offshore installation: Pollution safety certificate (MPA)

After consultation with SAMSA, SAMSA to review the Regulations and the applicability to be confirmed given the uniqueness of the project.

SECTION J BROAD-BASED BLACK ECONOMIC EMPOWERMENT

J1 Please provide information in terms of the following categories:

Attachments: See Items 10 - 15 in the Support Documents - Table of Contents. Redacted

SECTION K ADDITIONAL INFORMATION

Provide any other relevant information related to this application

Additional Information:

Redacted

. Attachment: See Item 16 in the Support Documents - Table of Contents. Redacted

SECTION L DECLARATION

On behalf of the applicant, I hereby declare that:

(a) the applicant shall at all times comply in every respect with the conditions attached to any licence that may be granted to the applicant;

(b) the applicant shall at all times comply with lawful directions of the National Energy Regulator of South Africa;

(c) the information provided by me on behalf of the applicant is accurate and complete in all respects; and

(d) I am authorised to make this declaration on behalf of the applicant.

Signed:

Full name(s) of Signator(y/ies):

Mehmet Katmer	

Position held (if the applicant is a company, co-operative, partnership, unincorporated association or any other body corporate):

Director	

Date:

28.05.2021

APPLICATION FOR AN ELECTRICITY GENERATION LICENCE IN TERMS OF THE ELECTRICITY REGULATION ACT, 2006 (ACT NO. 4 OF 2006)

Applicant:

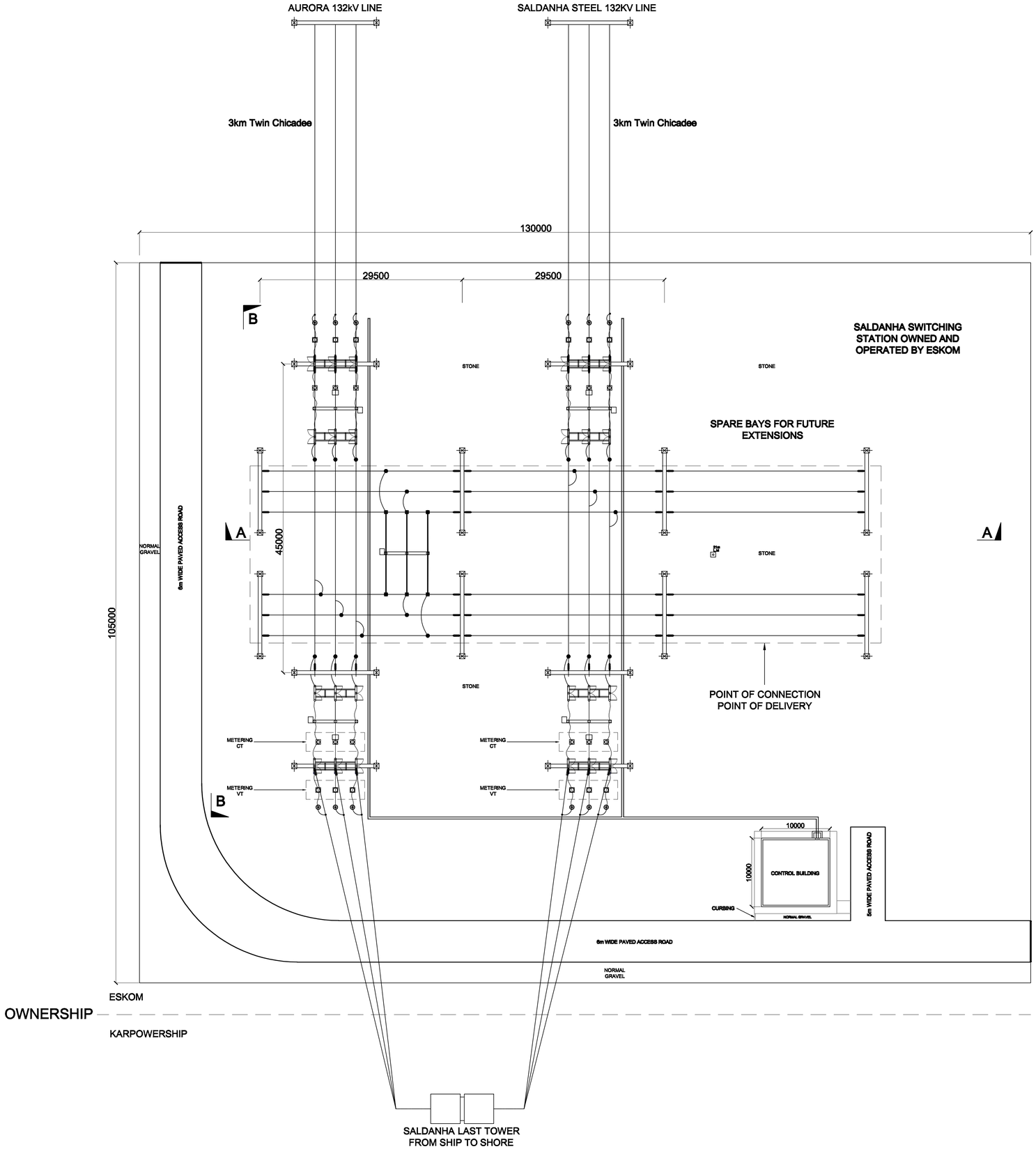
Karpowership SA Saldanha Bay (RF) Proprietary Limited)

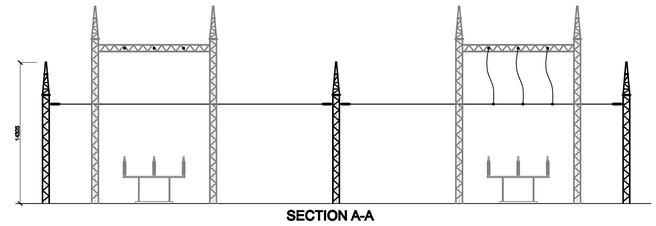
TABLE OF CONTENTS:

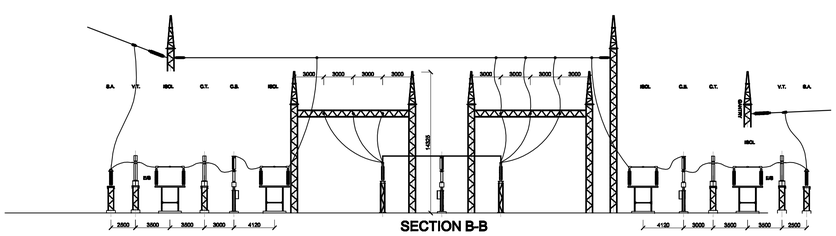
SUPPORTING DOCUMENTS - KARPOWERSHIP SALDANHA BAY

	TABLE OF CONTENTS
ITEM	**DESCRIPTION**
1.	Section C - Saldanha 132kV Switching Station Rev6
2.	Section D – KPS RSA GSA Term Sheet - (Fuel Co - Saldanha) 13.12.2020 **Redacted**
3.	Section F – Connection Agreement PROFORMA 24.11.2020 **Redacted**
4.	Section F - RMIPP RFP - Power Purchase Agreement **Redacted**
5.	Section F - Saldanha Powership Single Line Diagram
6.	Section F - CEL - Saldanha **Redacted**
7.	Section G - Annex - III - Saldanha **Redacted**
8.	Section H - Job Creation Table Operating Measurement Period **Redacted**
9.	Section I – Environmental and safety permit documents
	2020 10 19 Memo to Triplo4 re Karpowership WUL Port of Saldanha Bay
	2020 10 20 Memo to Triplo4 re Karpowership WML Saldanha
	Coastal Discharge Permit Feedback
	Final Section 38 Response to NID – HIA Gas to Power
	SAAELIP - Proof of Submission
	Saldanha Bay Powership project DEIA comment
	Water Allocation Requirements S21 Abstraction - Saldanha
10.	Section J – BBBEE Appendices - SB **Redacted**
11.	Section J - Saldanha Ownership - Bid Response **Redacted**

12.	Section J - Saldanha Skills Development Plan **Redacted**
13.	Section J - Saldanha Management Control Bid Response **Redacted**
14.	Section J - Saldanha Supplier Development Plan **Redacted**
15.	Section J - Saldanha Enterprise Development Plan **Redacted**
16.	Section K – Letter of Appointment **Redacted**
17.	SIP 20a Preferred Bidder Karpowership - SIP Status RMIPPPP 29032021







Rev	Date	Drawn	Revison Details
00	02/10/20	PL	Initial Design
01	06/11/20	PL	Addition of Line Bays
02	16/11/20	PL	Additional note on CT
03	25/11/20	PL	Delivery Point
04	27/11/20	PL	Aerial View
05	30/11/20	PL	Tower Line Modification

Rev	Date	Drawn	Revison Details

Client:
POWERSHIP
164 Totius Street
Groenkloof
Pretoria

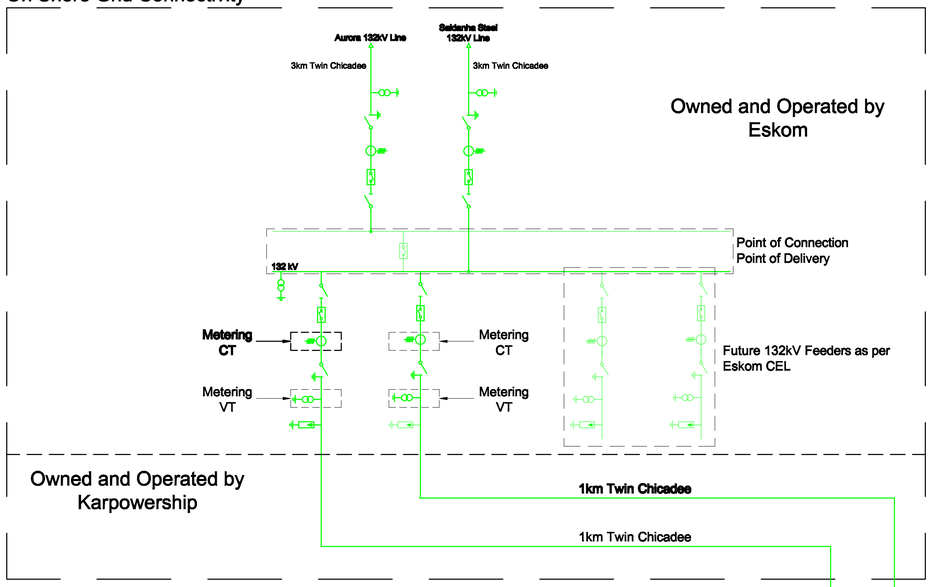
Site:
SALDANHA

Drawing Title:
SALDANHA 132kV SWITCHING STATION

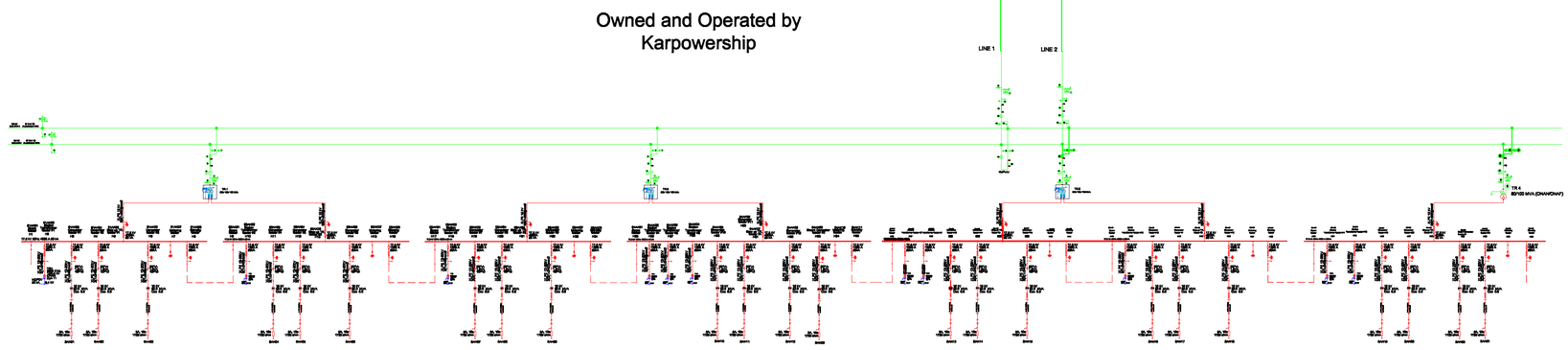
Siris Engineering (Pty) Ltd
Bassonia Office Park
Cussonia Drive
Bassonia
Tel: (011) 682 1971
Fax: (011) 432 6115
SIRIS ENGINEERING

Drawn By:	Checked By:
P Lekgari	V Chinniah
Approved By:	Scale:
K Pitamber	1:300
Date:	Size:
12/12/2020	A1
Drawing No:	Revison:
SE-PWS-STR-SDSW-0001-06	06

On Shore Grid Connectivity



Khan Class Powership



CONDUCTORS	
Ⅰ	2 X 954 MCM ACSR Conductors
Ⅱ	114/10 mm Aluminyum Boru. Bus Pipes
Ⅲ	7 0/ 5 mm Aluminyum Boru. Bus Pipes

132 kV EQUIPMENT LIST

Symbol	Qty.	Equipment Name	Characteristics	Manufac.	Type.
1	24	Voltage Transformer	132/√3 / 0.1/√3 / 0.1/√3 / 0.1/√3 / 0.1/3 31.5kA 4500 pF Str: 0.2+0.2+3P+3P 10+10+30+30VA (insulators will be 170 kV)	Emek	KGT-170
3	12	Current Transformer	170 kV 800-1000-1200/5-5-5-5-5 A 31.5kA 25mm/kV Str:0.2sFs5+0.2sFs5+5P20+5P20 15+15+30+30VA	Emek	AT -170
3A	6	Current Transformer	170 kV 2200-2500-2800-3150/5-5-5-5 A 31.5kA 25 mm/kV Str:0.2sFs5+0.2sFs5+5P20+5P20 15+15+30+30VA	Emek	AT -170
3C	3	Current Transformer	170 kV 1500-3150/5-5-5 A 31.5kA 25 mm/kV Str:0.5sF5+5P20+20 10+30+30 VA	Emek	AT -170
4	8	Normal disconnecting switches	170 kV 2500 A, 31,5 kA 3s 25 mm/kV	Güral	CBD-2500
4T	4	disconnecting switches (with earth.blade)	170 kV 2500 A, 31,5 kA 3s 25 mm/kV	Güral	CBDE-2500
TB	2	Earthing switches	170 kV 31,5 kA 3s 25 mm/kV	Güral	EF-170
4A	6	Normal disconnecting switches	170 kV 3150 A, 31,5 kA 3s 25 mm/kV	Güral	
5	4	Circuit Breaker (Without Autoreclosing)	170 kV 2000 A, 31,5 kA 3s	Siemens	3AP1 FG
5A	3	Circuit Breaker (Without Autoreclosing)	170 kV 3150 A, 31,5 kA 3s	Siemens	3AP1 FG
6	18	Lightning Arrester	144 kV 10 kA znO	Siemens	
7	3	Power Transformer	200 / 100 / 100 MVA 121±12X1,25 -154±12X1,25 % /15-15 kV YNd11d11 ONAN / ONAF / OFAF		
8	14		170 kV C4 750	Ç.Seramik	KS-9023-4
9	1	Power Transformer	100 MVA 121±12X1,25 -154±12x1,25 % /15 kV YNd11 ONAN / ONAF		

CONDUCTORS	
Ⅰ	2 X 954 MCM ACSR Conductors
Ⅱ	1 X 954 MCM ACSR Conductors
Ⅲ	96 mm ² Earth wire conductors

EQUIPMENT LIST

Symbol	Qty.	Equipment Name	Characteristics	Manufac.	Type.
1	6	Voltage Transformer	132/√3 / 0.1/√3 / 0.1/√3 / 0.1/√3 / 0.1/3 31.5kA 4500 pF Str: 0.2+0.2+3P+3P 10+10+30+30VA (insulators will be 170 kV)		
3	6	Current Transformer	170 kV 100-200-400/5-5-5 A 31.5kA Str:0.2sFs5+0.2sFs5+5P20+5P20 15+30+30VA		
3A	3	Current Transformer	170 kV 400-800-1200-1600/5-5-5-5 A 31.5kA Str:0.2sFs5+0.2sFs5+5P20+5P20 15+15+30+30VA		
4	2	Serial disconnecting switches	170 kV 1250 A, 31,5 kA 3s		
4A	1	Serial disconnecting switches	170 kV 2000 A, 31,5 kA 3s		
4T	1	disconnecting switches (with earth.blade)	170 kV 2000 A, 31,5 kA 3s		
TB	1	Earthing switches	170 kV 31,5 kA 3s		
5	3	Circuit Breaker (Without Autoreclosing)	170 kV 2000 A, 31,5 kA 3s		
6	9	Lightning Arrester	120 kV 10 kA znO		
7	2	Power Transformer	60 / 80 MVA 121±12X1,25 -154±12X1,25 % /15 kV YNd11		

Date / Tarih		Revised by

KARPOWERSHIP

KARES

Design/Tasarım

Drawn By / Çizan	Murat AYVAZ		**Date / Tarih**	**21.09.2020**
Prepared By/Hazirlayan	Murat AYVAZ		Date / Tarih	21.09.2020
Checked By/Kontrol	**Murat AYVAZ**		**Date / Tarih**	21.09.2020

Drawing Name / Çizim Adı :

SALDANHA
SINGLE LINE DIAGRAM

Drawing No / Çizim No	Revision/Sürüm	Sheet No./Sayfa No.	Scale/Ölçek	Size/Boyut
KPS 16-SDN-PLN-001	2	1 OF	N.T.S	A1

FORM A1 (594 x 841)

Email: janicetooley@jtaenvirolaw.com
Cell: 083 650 5691

19 October 2020

PER EMAIL: Ms Hantie Plomp
Triplo4 Sustainable Solutions
hantie@triplo4.com

Dear Hantie

MEMORANDUM OF ADVICE: KARPOWERSHIP: WATER USE LICENSING: PORT OF SALDANHA BAY

1. Triplo4 has asked me to advise on whether or not Karpowership SA (Pty) (Ltd) requires a water use licence in terms of the National Water Act 36 of 1998 (NWA) for its proposed project at the Port of Saldanha Bay.

2. The NWA regulates the use of water in relation to water resources[1] (as defined), which are for the most part, freshwater aquatic systems, but also include estuaries[2], where these water systems interact with the marine environment to the extent defined.

3. It should be noted up front that the NWA and its various regulations and notices do not provide definitions for all terms used to describe water uses, and the water uses themselves are lightly phrased. In the absence of recent and comprehensive policy guidelines on the water uses listed in the NWA, it makes interpretation extremely difficult when trying to conclusively determine whether or not a project requires a water use licence, especially Karpowership's project which is technologically unique. For this reason, it is strongly advised that the advice contained herein is confirmed with the Department of Water and Sanitation (DWS) prior to commencing the project and as early as possible in the planning stage.

---

[1] Section 1 of the NWA: "***water resource****" includes a watercourse, surface water, estuary, or aquifer*.

[2] *Ibid*. "***"estuary"*** *means a partially a partially or fully enclosed body of water -*

(a) which is open to the sea permanently or periodically; and

(b) within which the sea water can be diluted, to an extent that is measurable, with fresh water drained from land.

4. Section 21 of the NWA identifies the following eleven water uses:

(a) taking water from a water resource;

(b) storing water;

(c) impeding or diverting the flow of water in a watercourse[3];

(d) engaging in a stream flow reduction activity contemplated in section 36[4];

(e) engaging in a controlled activity identified as such in section 37 (1)[5] or declared under section 38 (1)[6];

(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;

(g) disposing of waste in a manner which may detrimentally impact on a water resource;

(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;

(i) altering the bed, banks, course or characteristics of a watercourse;

---

[3] *Ibid*. "***watercourse****" means -*

(a) a river or spring;

(b) a natural channel in which water flows regularly or intermittently;

(c) a wetland, lake or dam into which, or from which, water flows; and

(d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse,

and a reference to a watercourse includes, where relevant, its bed and banks.

[4] In terms of Section 36 of the NWA, a streamflow reduction activity is "*the use of land for afforestation which has been or is being established for commercial purposes*".

[5] In terms of Section 37(1) of the NWA, controlled activities are:

(a) irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork;

(b) an activity aimed at the modification of atmospheric precipitation;

(c) a power generation activity which alters the flow regime of a water resource;

(d) intentional recharging of an aquifer with any waste or water containing waste; and

(e) an activity which has been declared as such under section 38.

[6] An additional controlled activity has been declared in terms of Section 38(1):

"The exploration and or production of onshore naturally occurring hydrocarbons that requires stimulation, including but not limited to hydraulic fracturing and or underground gasification, to extract, and any activity incidental thereto that may impact detrimentally on the water resource".

(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and

(k) using water for recreational purposes.

5. Of these eleven water uses, based on my understanding of the technical components of the project and the receiving environment as described in the draft Scoping Report that has been prepared as part of the application for environmental authorisation, including preliminary specialist findings:

5.1. **Five**[7] water uses are clearly not relevant to Karpowership's project (those that are not underlined in the list above) and require no further discussion.

5.2. **Six** water uses are also considered not applicable (these are underlined in the list above) but require some discussion to show why this is so. They pertain to:

5.2.1. to the abstraction and discharge of seawater as part of the cooling systems on board the Powerships[8]; and

5.2.2. the gas pipelines within the Port and the transmission lines that will traverse the Saldanha Special Economic Zone and adjoining privately-owned industrial land.[9]

6. The following six water uses are discussed further in respect of their applicability to the project at the Port of Saldanha Bay:

6.1. **Section 21(a):** The abstraction of water from the Port for the cooling processes for the generation of power on board the Powerships does not trigger a Section 21(a) water use because these Port waters are not considered to be a "water resource" as defined by the NWA.

6.2. **Section 21(f) and (g):** Likewise, Section (f) and (g) water uses are not triggered because the Port is not a water resource. It could also be argued that the cooling water discharged from the Powerships does not contain waste, although this latter point may be disputed by DWS officials who tend to interpret any water exposed to an industrial process, as being potentially contaminated. Nonetheless, the interpretation of wastewater is irrelevant given that the Port is not a water resource.

[7] Water uses 21 (b); (d); (e); (j) and (k).

[8] Water uses 21(a); (f); (g) and (h).

[9] Water uses 21(c) and (i).

6.3. **Section 21(h):** Although the water disposed of from the Powerships will have been heated in a power generation process, it will be disposed of into the Port. The description of this water use does not specify that in order for it to be triggered, the disposal must be into a water resource. However, given the ambit of the NWA to regulate and protect water resources, it is my view that because the Port of Saldanha does not fall within the NWA definition of a water resource, this water use is also not applicable.

6.4. **Section 21(c) and (i)**[10]**:** Because the gas pipeline will be located within the Port, it is not anticipated that it will trigger either a 21(c) or (i) water use. It has also been confirmed by the specialist that the nearest watercourse is 2 km away from the gas pipeline.

A 500m radius of the transmissions lines was assessed by the wetland specialist who found no watercourses, including wetlands[11] at risk. Thus, these water uses are also not applicable.

7. In conclusion, based on the proposed project configuration, there are no water uses associated with Karpowership's project at the Port of Saldanha, and therefore, no water use licence is required nor is it necessary to determine the applicability of a General Authorisation.

8. I trust that the memo provides the information requested by Triplo4 at the level and for the purpose for which such advice was sought.

9. Please do not hesitate to contact me should you require clarity on the contents hereof.

Yours sincerely,

Janice Tooley

[10] Although Section 21(c) and Section 21(i) water uses are listed separately in the NWA, they are regulated and administered jointly in respect of general authorisation and water use licensing.

[11] Section 1 of the NWA: *"**wetland**" means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil*

Email: janicetooley@jtaenvirolaw.com
Cell: 083 650 5691

20 October 2020

PER EMAIL: Ms Hantie Plomp
Triplo4 Sustainable Solutions
hantie@triplo4.com

Dear Hantie

MEMORANDUM OF ADVICE: KARPOWERSHIP: WASTE MANAGEMENT LICENCES: PORT OF SALDANHA

1. Triplo4 has asked me to provide a memo on whether Karpowership SA (Pty) (Ltd) requires a waste management licence in terms of the National Environmental Management: Waste Act 59 of 2008 (NEMWA) for its project at the Port of Saldanha.

2. Section 20 of NEMWA prohibits a person from commencing, undertaking or conducting a waste management activity, except in accordance with prescribed norms and standards, or a waste management licence in respect of that activity, if a licence is required. Further, it is an offence to contravene Section 20.

3. Waste management activities are listed under Government Notice (GN) 921 in Government Gazette 37083 of 29 November 2013 (as amended by GNs 332, 633 and 1094 of 2 May 2014, 24 July 2015 and 11 October 2017 respectively).

4. Activities listed under Categories A and B require a waste management licence while those activities listed under Category C, require compliance with prescribed norms and standards.

5. It is understood from the information provided by Karpowership that the waste streams generated by the project will be mainly waste from the repair and maintenance of the Powerships and Floating Storage Regasification Unit (FSRU) including used oil, scrap metals, plastics, oily rags, bilge water, empty chemical and paint containers, used light bulbs and tubes, used batteries, paper, packaging, as well as kitchen waste, sewage

and grey water from the ablution facilities and a small amount of healthcare risk waste from the on-board clinic. All waste will be stored on board temporarily and at regular intervals collected from the vessels for off-site treatment and/or disposal by authorised service providers.

6. Triplo4, the independent Environmental Assessment Practitioner has compared all Karpowership's anticipated waste activities against the waste management activities listed under NEMWA and determined that no activities listed in Category A or B activities are triggered, and for this reason, no waste management licence is required.

7. Having considered the waste-related information provided by Karpowership to Triplo4, I concur with Triplo4's findings that no waste management licence is required.

8. Triplo4 also considered Category C waste management activities, which do not require a waste management licence but do require compliance with the relevant norms and standards. The following two Category C activities were identified as being potentially relevant to the Karpowership project:

8.1. 5(1): The storage of general waste at a facility that has the capacity to store in excess of 100m^3 of general waste at any one time, excluding the storage of waste in lagoons or temporary storage of such waste.

8.2. 5(2): The storage of hazardous waste at a facility that has the capacity to store in excess of 80m^3 of hazardous waste at any one time, excluding the storage of hazardous waste in lagoons or temporary storage of such waste.

9. However, given that Karpowership's various waste streams which will be stored separately in relatively small receptacles and containers around the Karpowership vessels close to where the waste is generated until collected by authorised service providers either for recycling or disposal, and because there will be no waste facility on board as defined[1] that will exceed the prescribed thresholds, these two Category C activities are also not applicable.

I trust that the memo provides the information requested by Triplo4 at the level and for the purpose for which such advice was sought.

[1] Definition of facility in GN 921 GG of 37083 of 29 November 2013 (as amended): ***"facility"*** *means a place, infrastructure, structure or containment of any kind including associated structures or infrastructure, wherein, upon or at, a waste management activity takes place and includes a waste transfer facility, a waste storage facility, container yard, waste disposal facility, incinerators, lagoons, recycling, co-processing or composting facilities.*

Please do not hesitate to contact me should you require clarity on the contents hereof.

Yours sincerely,

Janice Tooley

environment, forestry
& fisheries

Department: Environment, Forestry
and Fisheries
REPUBLIC OF SOUTH AFRICA

P. O. Box 52126, Victoria and Alfred, Waterfront, Cape Town, 8002

Ref No.: 2020/Nonapp/KarPower Project
Enquiries: Mr Rueben Molale
Tel: (021) 819 2455
E-mail: rmolale@environment.gov.za

Triplo4 Sustainable Solutions (Pty) Ltd
Attention: Mrs Hantie Plomp
P. O. Box 6595
ZIMBALI
4418

Per e-mail: hantie@triplo4.com

Dear Mrs Plomp

THE APPLICABILITY OF THE COASTAL WATERS DISCHARGE PERMIT REGULATIONS, 2019 WITH RESPECT TO THE PROPOSED GAS TO POWER PROJECT IN SOUTH AFRICA

1. The Department refers to your letter dated 18 September 2020.
2. This Department has reviewed the information contained in your letter and in the document titled "Coastal Discharge Requirements- Karpowership" and has noted the following:
   - The Karpowership will be a floating power plant.
   - The proposal is that the effluent will be discharged directly from the ships into the sea within three locations, which include: Port of Ngqura, Port of Richards Bay and Port of Saldanha Bay.
3. This Department is of the opinion that the propose activities will not require a Coastal Waters Discharge Permit (**"CWDP"**) in terms of section 69 of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (the **"ICM Act"**). Written authorisation from this Department will thus not be required prior to the commencement of the said proposal.
4. This determination is based on the following:
   - The discharge of effluent will originate from floating ships and not from land-based sources.
   - Section 69(1) of the ICM Act states that a CWDP is required for the lawful discharging of effluent that originates from land-based sources.
5. Please be advised that should the plans be amended and any effluent stream originate from land-based sources, written authorisation would be required prior to the commencement of the activities.
6. The developer must be reminded of the duty of care towards the environment imposed on all persons in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (**"NEMA"**). Section 28(1) of NEMA

specifically states that *"Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradations from occurring, continuing or recurring, or in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment"*. Section 58 of the ICM Act in turn provides that section 28 of NEMA applies to any impact caused by any person that has an adverse effect on the coastal environment which means that there is a general duty to avoid adverse effects on the coastal environment. Please note that the ICM Act defines "adverse effect" as any actual, potential or cumulative impact on the environment that impairs, or may impair, the environment or any aspect of it to an extent that is more than trivial or insignificant. Given the unique and dynamic nature of the coastal environment, the Department is particularly concerned about any potential adverse impacts to any estuarine ecosystem – in this case the Port of Richards Bay estuary. The Department will provide further comments during the Environmental Impact Assessment public participation process as more details on the effluent constituents and the impacts of the effluent on the coastal environment should be provided in the specialist reports. At that stage, the Department may require that certain monitoring and mitigation measures be implemented in order to safeguard against significant environmental harm of that estuarine environment.

7. Please advise the developer to comply with any other statutory requirements that may be applicable to the establishment of the Karpower gas to power project within the different ports.

8. The Department reserves the right to revise initial comments and request further information from you based on any new or revised information received.

9. Kindly quote the above-mentioned reference number in any future correspondence regarding this letter.

Director: Coastal Pollution Management

Dr Yazeed Peterson

Department of Environment, Forestry and Fisheries

Date: 09/10/2020

ILifa leMveli leNtshona Koloni
Erfenis Wes-Kaap
Heritage Western Cape

Our Ref: HM/WEST COAST/SALDANA BAY/ FARM 1238 (ERF 16001), PORTION 65 OF FARM 127, PORTION 17 OF FARM 127, REMAINDER OF FARM 127, REMAINDER OF FARM 1139, PORTION 1 OF THE FARM 1139, PORTION 3 OF THE FARM 1112, PORTION 3 OF THE FARM 129, REMAINDER OF FARM 129, PORTION 5 OF FARM 129, REMAINDER OF FARM 189 AND PORTION 2 OF FARM 189
Case No.: 21020407SB0204E
Enquiries: Stephanie Barnardt
E-mail: stephanie.barnardt@westerncape.gov.za
Tel: 021 483 5959
Date: 23 February 2021

Jenna Lavin
34 Harries Street, Plumstead
jenna.lavin@ctsheritage.com

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: HIA REQUIRED
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape Provincial Gazette 6061, Notice 298 of 2003

NOTIFICATION OF INTENT TO DEVELOP: PROPOSED GRID CONNECTION INFRASTRUCTURE TO GAS-TO-POWER TO NATIONAL GRID ON FARM 1238 (ERF 16001). PORTION 65 OF FARM 127, PORTION 17 OF FARM 127, REMAINDER OF FARM 127, REMAINDER OF FARM 1139, PORTION 1 OF THE FARM 1139, PORTION 3 OF THE FARM 1112, PORTION 3 OF THE FARM 129, REMAINDER OF FARM 129, PORTION 5 OF FARM 129, REMAINDER OF FARM 189 AND PORTION 2 OF FARM 189, SALDANHA BAY, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)

CASE NUMBER: 21020407SB0204E

The matter above has reference.

Heritage Western Cape is in receipt of your application for the above matter received on 8 February 2021. This matter was discussed at the Heritage Officers Meeting held on 15 February 2021.

You are hereby notified that, since there is reason to believe that the Proposed Grid Connection Infrastructure to Gas-to-Power to National grid, Saldanha Bay will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of Section 38(3) of the NHRA be submitted. Section 38(3) of the NHRA provides

*(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a)**: Provided that the following must be included:***

(a) The identification and mapping of all heritage resources in the area affected;
(b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;
(c) an assessment of the impact of the development on such heritage resources;
(d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
(f) if heritage resources will be adversely affected by the proposed development, The consideration of alternatives; and
(g) plans for mitigation of any adverse effects during and after the completion of the proposed development.

This HIA must in addition have specific reference to the following:
- Palaeontological impact assessment
- Archaeological impact assessment

Street Address: Protea Assurance Building, Green Market Square, Cape Town, 8000 • **Postal Address:** P.O. Box 1665, Cape Town, 8000 • **Tel:** +27 (0)21 483 5959 • **E-mail:** ceoheritage@westerncape.gov.za

Straatadres: Protea Assuransie-gebou, Groentemarkplein, Kaapstad, 8000 • **Posadres:** Posbus 1665, Kaapstad, 8000 • **Tel:** +27 (0)21 483 5959 • **E-pos:** ceoheritage@westerncape.gov.za

Idilesi yendawo: kumgangatho 3, kwisakhiwo iprotea Assurance, Greenmarket Square, ekapa, 8000 • **Idilesi yeposi:** Inombolo yebhokisi yeposi 1665, eKapa, 8000 • **Iinombolo zomnxeba:** +27 (0)21 483 5959 • **Idilesi ye-imeyile:** ceoheritage@westerncape.gov.za

ILifa leMveli leNtshona Koloni
Erfenis Wes-Kaap
Heritage Western Cape

The HIA must have an overall assessment of the impacts to heritage resources which are not limited to the specific studies referenced above.

The required HIA must have an integrated set of recommendations.

The comments of relevant registered conservation bodies; all Interested and Affected parties; and the relevant Municipality must be requested and included in the HIA where provided. Proof of these requests must be supplied.

Please note, should you require the HIA to be submitted as a Phased HIA, a written request must be submitted to HWC prior to submission. HWC reserves the right to determine whether a phased HIA is acceptable on a case-by-case basis.

If applicable, applicants are strongly advised to review and adhere to the time limits contained the Standard Operational Procedure (SOP) between DEADP and HWC. The SOP can be found using the following link http://www.hwc.org.za/node/293

Kindly take note of the HWC meeting dates and associated agenda closure date in order to ensure that comments are provided within as Reasonable time and that these times are factored into the project timeframes.

HWC reserves the right to request additional information as required.

Should you have any further queries, please contact the official above and quote the case number.

.....
Colette Scheermeyer
Acting Chief Executive Officer

Heritage Western Cape
Erfenis Wes-Kaap
ILifa leMveli leNtshona Koloni

23 February 2021

environment, forestry & fisheries
Department: Environment, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

South African Atmospheric Emission Licensing & Inventory Portal

SAAELIP - Facility

Print

CONFIRMATION OF SUBMITTAL

1. Your application has been received and will be reviewed shortly.
2. Check your account, email and text message for system notification at various mile stones.
Thank you for using the SNAEL system.

Please click Here to print your receipt.

Submittal Summary

Submittal ID:	**4438**	Submittal Name:	**AEL Application**
Submitted Date:	**1/4/2021 5:05:17 PM**	Submitted by:	**Ravin Rajoo** **164 Totis Street** **City of Tshwane Metropolitan Municipality GT 0027** **0837878600** **ravinrajoo@powershipsa.co.za**
Status:	**Complete Submittal**	Submission Method:	**On-line submission**

Submittal Form List

- A. General Information
- B. Contact Information
- C. Raw Materials & Production
- D. Control Device
- E. Stack
- F. Emission Unit
- G. Reporting Group
- H. Activity and Emission
- I. Monitoring, Management, & Mitigation

Attachment List

AEL Signature Form (Required) -- Online

- ael sign sb.jpg

Complaints Register (Part A: Section A.2) (Required) -- Online

- COMPLAINTS REGISTER.docx

Process Flow Diagram (Part A: Section A.4) (Required) -- Online

- process flow.jpg

Supporting Documents (Optional) -- Online

- CACLBE1220920p14.pdf
- CTCLBE1220920p13.pdf

Certification Receipt

Certification Statement:	**Declaration of accuracy of information provided:** **Application for an atmospheric emission license / provisional atmospheric emission license as envisaged in chapter 5 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).** **I, as the Accounting Officer or delegated by the Accounting Officer, declare that the information provided in this application or attached to the application is, to the best of my knowledge, in all respects factually true and correct. I am aware that the supply of false or misleading information in the application form is a criminal offence in terms of section 51(1)(f) of the Act.**
Certification Question:	**what is your favorite pet's name?**
Certification Question Answer:	*******
PIN Number:	**********
Responsible Officer:	**Ravin Rajoo**

Sender IP Address:	**154.73.240.6**

Print

(Last modified Time: 2019-08-07 03:34 PM PID: 12PRDWEB085)

Gas to Power Powership at Port of Saldanha

Our Ref:

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Briege Williams
Tel: 021 462 4502
Email: bwilliams@sahra.org.za
CaseID: 15687

Date: Friday March 12, 2021

Interim Comment

In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Hantie Plomp
Triplo4 Sustainable Solutions

The Project entails the generation of electricity from floating mobile Powerships moored in the Port of Saldanha Bay. The Port activities falls under the jurisdiction of the Transnet National Port Authority (TNPA) and the associated land-based activities are located on land owned by Transnet, Eskom and other private landowners. The proposed combined design capacity for the Powership is 415MW, comprising 21 gas engines and 2 steam turbines. A Floating Storage Regasification Unit (FSRU) will act as the storage and regasification facility. A Liquefied Natural Gas Carrier will supply the Liquefied Natural Gas (LNG) to the FSRU over a 1 to 2 day period approximately every 20 days. From the Powership, power will be evacuated via a 132kV transmission line over a distance of approximately 7,5 km to the Eskom Blouwater Substation which feeds into the national grid.

The South African Heritage Resources Agency (SAHRA) would like to thank you for submitting the Draft Environmental Impact Assessment Report for the Proposed Gas to Power Powership Project at the Port of Saldanha Bay, Saldanha Local Municipality, Western Cape, South Africa.

The project entails the generation of electricity from floating mobile powerships moored in the Port of Saldanha including two ships berthing during the project lifespan namely a Floating Storage Regasification Unit (FSRU), and one Powership. A subsea gas pipeline will connect the FSRU to the powership and a transmission line from the powership will feed the substation and national grid.

Although most of the proposed project is land based, the Maritime and Underwater Cultural Heritage (MUCH) unit is required to comment on the proposed subsea gas pipeline. The preferred route of the pipeline is likely to be perpendicular to the coast and run adjacent to the existing gas pipeline parallel to the Iron Ore jetty and will be approx. 3.5km in length. The pipeline will be brought to site in sections and assembled ready for installation, it will then be pulled into the sea.

SAHRA commented on the Draft Scoping Report (DSR) in November 2020 where it was noted that although a Heritage Impact Assessment (HIA) had been undertaken to assess any possible impacts on terrestrial

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

heritage, no work was undertaken to assess any impacts on maritime heritage. Despite this, the MUCH unit at SAHRA considered the possibility of any impact on maritime heritage resources to be low due to the extensive development of the area in previous years and so it was recommended that "……*the DSR still needs to refer to the possibility of impacts and a plan for surveying the pipe laydown area must be incorporated. During the installation of the pipeline the area must be surveyed for heritage remains prior to the laying of the pipeline."* SAHRA also advised that "…*there is still a chance that historic remains could be uncovered during the works. In this case all works must cease and SAHRA must be notified immediately to provide further advice."*

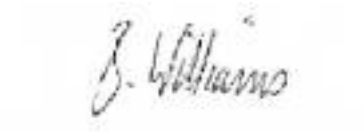
SAHRA is disappointed to note that the DEIA makes no reference to maritime heritage despite part of the project being below the high-water mark. SAHRA's comments which were provided for the DSR phase of the project have not been considered for inclusion in the DEIA.

While the possibility of encountering maritime heritage is considered to be low, it must be referenced in the EIA so that should heritage resources be encountered during the proposed work, then the correct protocol will be followed.

SAHRA insists that a paragraph must be inserted under section 8.3.12 (Heritage, Archaeology and Palaeontology) to note the need for input on mitigation of impacts to maritime and underwater cultural heritage resources should they be discovered during the pipeline laydown area survey. Section 4.2.1 must also refer to Maritime heritage to show that its presence has been considered.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully



_____

Briege Williams

an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Briege Williams
Tel: 021 462 4502
Email: bwilliams@sahra.org.za
CaseID: 15687

Date: Friday March 12, 2021

Heritage Officer
South African Heritage Resources Agency

_____

Lesa la Grange
Manager: Maritime and Underwater Cultural Heritage
South African Heritage Resources Agency

ADMIN:
Direct URL to case: https://sahris.sahra.org.za/node/543515
(, Ref:)

Terms & Conditions:

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.

Our Ref: 0282

E-BL01.200445 – Karpowership Project: Water Abstraction & Allocation

Date: 20 October 2020

For the attention of: Mr. Tsunduka Khosa

Director
Water Use Licensing
Department of Water and Sanitation
Ndinaye House
178 Francis Baard Street
Pretoria Central
0001
Email: khosat@dws.gov.za

RE: CONFIRMATION OF THE NATIONAL WATER ACT REQUIREMENTS FOR THE USE OF COASTAL WATER FOR THE GAS TO POWER PROJECT PROPOSED FOR THE PORT OF SALDANHA BAY

Dear Mr. Khosa

This letter serves as a formal enquiry to present the scope of the project to the Department and confirm the applicable legal requirements in terms the National Water Act as regards to water abstraction and allocation of water for energy generation purposes for the proposed Powership to be located within the Port of Saldanha Bay.

1. PROJECT BACKGROUND AND STRATEGIC IMPORTANCE

Triplo4 Sustainable Solutions (Pty) Ltd has been appointed by Karpowership SA Pty Ltd to undertake the environmental legal processes for the proposed gas to power project at the Strategic Economic Zones located at Nelson Mandela Bay Metropolitan Municipality, Western Cape.

This project entails the generation of electricity from a floating mobile power station as provided by Karpowership. The power station has been built into various ships and has a generating capacity starting from 30 MW up to 470 MW. The notion is that these power stations can travel easily to where there is a demand, moor in the relevant port, tie in to the national grid and start generating power immediately.

1.1. Eskom Power Reliability and Government's Response to the Energy Demand

This proposed project is in response to the call from National Government in terms of the RFP for the Risk Mitigation Independent Power Producer's Programme (RMIPPPP).

The objective of the Programme is to procure between 2000 –3000 MWs of power generation capacity that can be implemented, to mitigate the security of supply risk on the basis of the shortest possible lead time to commercial operation.

Past experiences show that Eskom has not always been able to meet the electrical demands of the country. Industrialisation of South Africa has led to increased demand for electricity by an ever-growing population from a strained power service, namely Eskom. This has led to a number of power shortfalls throughout the country, as supply cannot meet demand. The power shortfalls and the unreliable electricity generation has had major impact on the South African economy. Furthermore, certain temporary and permanent shut downs of power plants across the country have come with serious impacts to energy supply.

This has generated the need for a diversified/ innovative power supply. This is based on national policy and informed by ongoing planning undertaken by the Department of Energy (DoE) and the National Energy Regulator of South Africa.

The National Development Plan (NDP) 2030 has outlined access to electricity as one of the "Elements of a Decent Standard of Living". South Africa has faced significant electricity shortages over a number of years and the escalating electricity crises experienced since 2007 has significantly impacted the standard of living of its citizens and resulted in ruinous economic losses. In order to achieve sustainable and inclusive growth by 2030, South Africa needs to invest in a strong network of economic infrastructure to support the country's medium and long term objectives according to the NDP 2030.

The vision of the NDP includes the promotion of economic growth and development though adequate provision of quality energy services that are competitively priced, reliable and efficient. Addressing access to energy will promote sustainable development, encourage economic competition and ensure that living standards are maintained and improved.

The use of natural gas from LNG in power generation provides a cleaner alternative to coal and other fossil fuels, reducing carbon and other emissions such as SO_2 and PM_{10}, resulting in both immediate and long-term benefits for public health and the environment. Access to cost-effective temporary base-load generation of a significant magnitude will help to solve the problem by supplying the power to meet the load which is often being shed or reduced at present. Reliable power generation facilities are required to address both the immediate power shortfalls, as well as the longer term increasing demand for electricity.

2. PROJECT SCOPE

2.1. Project Overview

Karpowership is the only owner, operator and builder of the first Powership™ (floating power plant) fleet in the world and plays an active role in medium to long-term investments; with more than 2500 employees globally. Currently, Karpowership owns and operates 20 Powerships with an installed capacity exceeding 3,100 MW and another 5,000 MW are under construction or in the pipeline. Karpowership is operational in Indonesia, Lebanon, Mozambique, Ghana, Sierra Leone, Guinea Bissau and Gambia. (www.karpowership.com).

The Powership refers to a barge or ship which has been adapted to incorporate elements which allow for the generation of electricity through the utilisation of natural gas (NG). The Powerships are assembled off-site and will be delivered fully equipped and functional to the relevant Ports, therefore posing no construction risk within the proposed port locations.

The Powerships are equipped with reciprocating engines for power generation, allowing reliable supply of electricity with minimal impacts from load profile and number of starts and stops. Powerships, with their modular generation capability, allow for greater technical flexibility for load cycling and shedding.

A Floating Storage Regasification Unit (FSRU) will store liquefied natural gas (LNG) fuel and convert the LNG to NG, to be delivered to the Powership as per planned gas pipeline. A LNG carrier shall periodically supply LNG to the FSRU and will temporarily stay in the location to offload the LNG cargo. Refer to table of figures below, showing the types of Powerships, FSRU and Project Concept.

Table 1: Images of Various Powerships

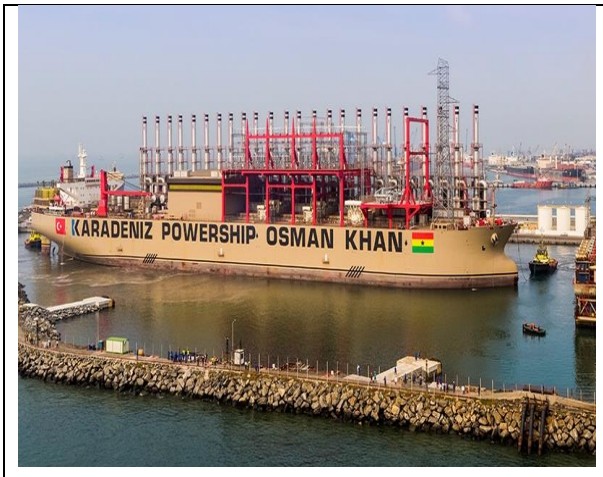
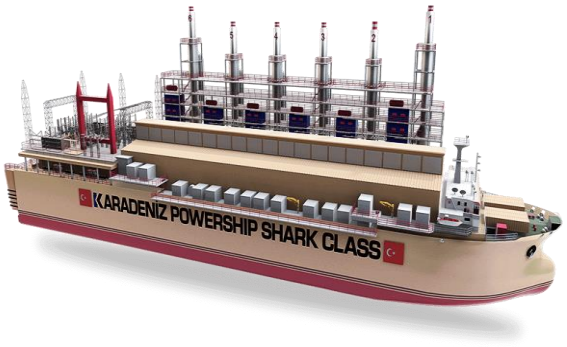
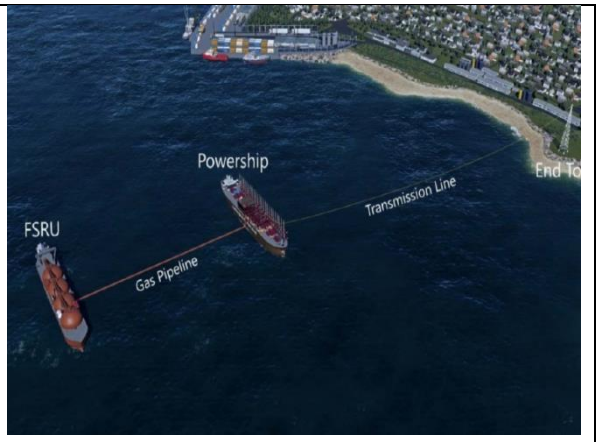
	

Image 1: Example of a Powership – Khan Class	Image 2: Example of a Powership – Shark Class

	
Image 3: Floating Storage & Regasification Unit (FSRU)	Image 4: Project Concept

A LNG carrier shall supply LNG to the FSRU and will only stay 1-2 days to offload the LNG cargo. The LNG remains on the FSRU and is regasified to natural gas which is then pumped from the FSRU to the Powership via gas pipeline.

The FSRU is specifically designed, constructed and equipped to supply the fuel gas required for the power generator engines installed on the Powership. FSRU regasifies the required amount of LNG and sends this to the Powership in gaseous form (NG) continuously through a connecting pipeline. The NG is supplied to the engines. The engines in operation drive the generator shaft to generate electricity, and the heat generated by the engines may be captured and used by additional steam turbines for increased efficiency the electricity generated is transmitted through the overhead transmission line and the substation to the national grid.

2.2. Proposed Site Locations

Key consideration for a feasible positions within the port is the turning circle for the LNG carrier as well as that the approach channel to be shared with the container terminal, i.e. traffic in basin from container vessels, cargo vessels and tugs. It is a criterion for the facility that it is aft of the approach channel entrance and outside the turning circle so as to not too impede vessel traffic movement in the port. This will keep the safety exclusion zones required for the ship-to-ship transfer from the LNG to the FSRU. Another significant aspect for site location is the ability to evacuate power to land based substations.

Port of Saldanha Bay:

Figure 1 below indicates the preferred location of the Powership at Small Bay. Transnet during the public participation process also indicated that in terms of the long term strategic plans, positioning at Big Bay may be preferable from the planning perspective.

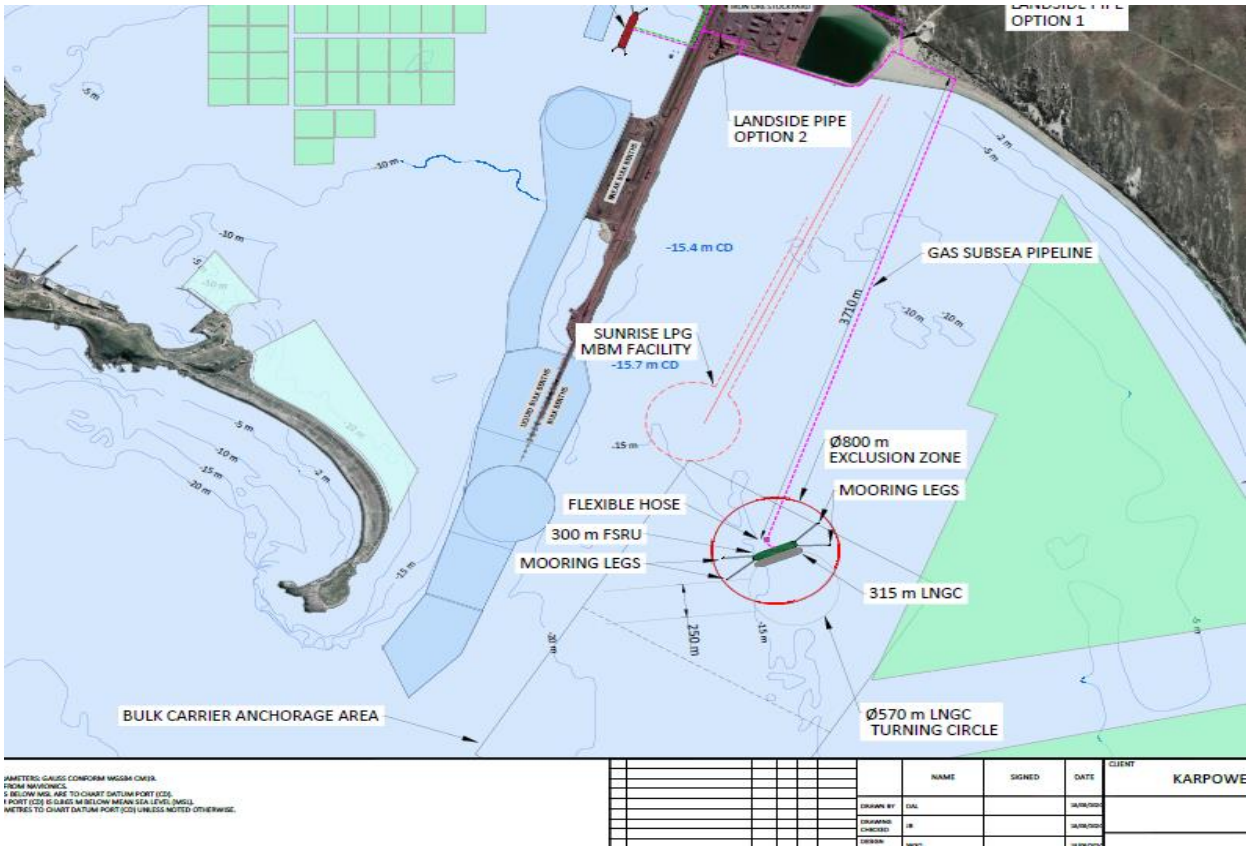


Figure 1: Preferred location of the Powership at Small Bay

The potential impacted water is the coastal water of the Indian Ocean. The Powerships are Port based and no abstraction or discharge will occur from land based facilities or fresh water resources.

2.3. Gas Pipeline

A gas pipeline is required to be installed between the FSRU & Powership to ensure gas supply for power generation. The gas pipeline for the proposed project is proposed to be installed along the sea bed. This facility is approximately 2 kilometres away from the identified land based water resource.

2.4. Transmission Lines and Water Resources

The power generated on the Powership will be converted by the on-board High Voltage substation and transmitted to land via transmission lines. Connection options to the substation on land by overhead line were considered in detail in the technical assessment undertaken by Siris Engineering (Pty) Ltd.

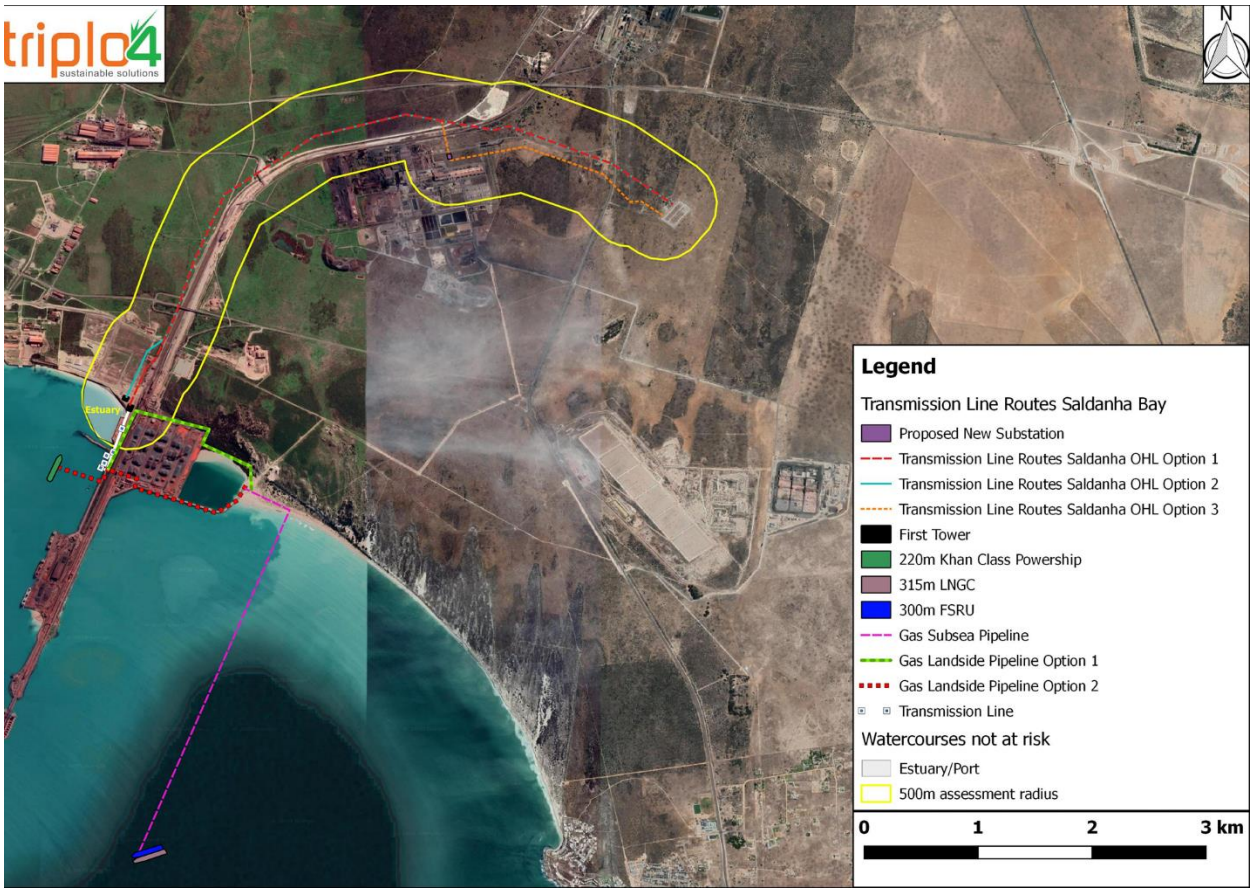


Figure 2: Wetland Delineation Map

The preferred transmission line is supported by the EAP. There are no impacts identified as the nearest water resource is situated 700m away from the proposed project.

2.5. Water Abstraction and Allocation

The Powership primarily uses seawater for cooling of the reciprocating engines, condensers and other auxiliaries. Water is also required for steam generation. The Powership operates a once through cooling system, which abstracts seawater directly for cooling and discharges directly back into the sea. No biocides or chemicals are added to the water.

It was confirmed by the Department of Environment, Forestry and Fisheries: Oceans & Coasts that no coastal discharge permit will be required as no discharge will occur from land based activities.

Abstraction of water from the Port's coastal water will have no impact on the availability of water for other Port based activities or facilities given the abundance of supply.

3. LEGAL REQUIREMENTS IN TERMS OF WATER ABSTRACTION or ALLOCATION FROM COASTAL WATERS

3.1. National Water Act

The NWA regulates the use of water in relation to water resources (as defined – a watercourse, surface water, estuary and aquifer), which are for the most part freshwater systems, but also include estuaries, where these water systems interact with the marine environment to the extent defined.

3.2. S21 (a): Taking Water from a water resource

Section 21(a): The abstraction of water from the Port (allocation of water) for the cooling processes for the generation of power on board the Powerships does not trigger a Section 21(a) water use because these Port waters are not considered to be a "water resource" as defined by the NWA. The Port water is situated within coastal water.

3.3. S21 (c) & (i): Impeding or diverting the flow of water in a watercourse and Altering the bed, banks, course, or characteristics of a watercourse

The gas pipeline will be located within the Port, therefore, it is not anticipated that it will trigger either a 21(c) or (i) water use. It has also been confirmed by the specialist that the nearest watercourse is 2km away from the gas pipeline.

A 500m radius of the transmissions lines was assessed by the wetland specialist who found no watercourses, including wetlands at risk. Thus, these water uses are also not applicable.

4. REQUEST TO THE COMPETENT AUTHORITY

We herewith respectfully request the Department to confirm our understanding that no water use licence nor a General Authorisation is required in terms of Section 21 of the NWA.

Yours Sincerely,

Mr. Mehmet Katmer, Director

KARPOWERSHIP SA PROPRIETARY LIMITED
Address: 164 Totius Street, Groenkloof, Pretoria, Gauteng, 0027
Postal address: PO Box 619, Pretoria, Gauteng, 0001
www.karpowership.com

PUBLIC WORKS AND INFRASTRUCTURE
INFRASTRUCTURE SOUTH AFRICA
REPUBLIC OF SOUTH AFRICA

Department of Public Works and Infrastructure l Central Government Offices l 256 Madiba Street l Pretoria l Contact: +27 (0)12 406 1627l +27 (0)12 323 7573
Private Bag X9155 l CAPE TOWN, 8001 l RSA 4th Floor Parliament Building l 120 Plain Street l CAPE TOWN l Tel: +27 21 402 2228 Fax: +27 21 462 4592
www.publicworks.gov.za

Dr Kgosientsho Ramokgopa
a/ Head: Infrastructure South Africa
Chairperson: SIP Steering Committee
Email: Boitumelom@presidency.gov.za
Kgosientsho@presidency.gov.za

To Whom It May Concern,

STRATEGIC INTEGRATED PROJECT (SIP) 20a EMERGENCY / RISK MITIGATION POWER PURCHASE PROCUREMENT PROGRAMME (2000 MW) – ACKNOWLEDGEMENT OF PROJECT STATUS

The Risk Mitigation (Independent) Power Purchase Procurement Programme (RMPPPP) forms part of the Energy Strategic Integrated Project No. 20, which was gazetted in Government Gazette 43547 on 24 July 2020. These projects are classified as Strategic Integrated Projects (SIP) and are to be managed within the requirements as set out in the Infrastructure Development Act (Act No. 23 of 2014).

As per the announcement of the Honourable Mr. Gwede Mantashe, Minister of the Department Mineral Resources and Energy (DMRE), on the 18th of March 2021, the following projects received Preferred Bidder status within the RMPPPP:

i. **Karpowership SA Coega (Project No. RM-TA-0145-001)**
ii. **Karpowership SA Richards Bay (Project No. RM-TA-0145-002)**
iii. **Karpowership SA Saldanha (Project No. RM-TA-0145-003)**

The SIP Steering Committee of 6 November 2020 confirmed that all projects classified with Preferred Bidder status within the RMPPPP will be regarded as SIP projects to be expedited in terms of Schedule 2 (Section 17(2)) of the Infrastructure Development Act (Act No. 23 of 2014).

The following individuals from Infrastructure South Africa are responsible for the Energy Infrastructure Portfolio and SIP 20a, and may be contacted for further assistance:

STRATEGIC INTEGRATED PROJECT No. 20a: RMPPPP	
Alvino Wildschutt-Prins	*Gary King*
Overall Management and Lead SIP Programme Management Office	SIP 20 Lead
Alvino@presidency.gov.za	garyk@idc.co.za
Mobile: 072 650 2449	Mobile: 063 503 2662 / 082 885 0636

I hereby request that you please assist the Preferred Bidders with the necessary approvals, authorisations, licences, permissions and exemptions, as determined within the boundaries of the Infrastructure Development Act (Act No 23 of 2014). Your assistance will be much appreciated.

We wish the Preferred Bidders all the best in the development of this project.

Yours sincerely,

Dr Kgosientsho Ramokgopa

Chair: Strategic Integrated Project Steering Committee

Date: 29 March 2021