

EIMS Ref	1607	Venue	Kelvin Estate Club House	Date	3 April 2024
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I&AP Name	Comment	Response
Mark Jansen Van Rensburg	Prior to the commencement of the tour, Mr Van Rensburg stated interest in how gas could be better than coal, and expressed excitement over whether gas would reduce the amount of soot from coal that affects their properties.	<p>Comments were noted.</p> <p>EAP: The CCGT plant would produce significantly less particulate matter than Kelvin's current coal fired power station. Detailed modelling of the air pollutants will be made available during the EIA phase when the Air Quality specialist study has been undertaken.</p>
	Question on how much space is needed for solar power plants to generate the same energy output.	EAP: Solar developments typically require quite a lot of land at approximately 2 hectares per megawatt as such it would not be feasible considering the available space at the Kelvin owned property on which the CCGT plant is planned.
	Asked if the project is more 'green' and what the implications would be for Eskom and loadshedding.	<p>EAP: The proposed CCGT plant will be producing up to 600MW of electricity using a gas powered turbine and a steam powered turbine that will be powered by the heat produced by the gas turbine increasing the efficiency of the plant. The proposed CCGT plant has less emissions compared to a traditional coal fired power station.</p> <p>The proposed Kelvin Power Station is an intended IPP project to be submitted in the IPP bid window to supply/sell the power produced to the Eskom grid meaning it will contribute to the electricity available to Eskom as such could assist with loadshedding although it will only be worth up to 600MW capacity.</p>
	Commented on the amount of 'red' in the wind rose diagram.	EAP: Explained that the diagram presents the baseline prevalent wind directions as per the monitoring stations.
	Stated that sometimes a loud 'valve' at the power station goes off and shakes their house. Expressed concern over the noise affecting the schools.	<p>EAP: confirmed that an Air quality and noise study would be undertaken to model the potential noise impacts from the proposed development.</p> <p>Client: stated that the proposed CCGT plant will be fitted with silencers and noise proofing where possible as this is standard industry practice to reduce noise impacts.</p>
	Asked if all the cooling towers will be demolished. Asked if some of the buildings could be preserved as they are historic.	EAP: The old A-station cooling towers would be demolished, however, the decommissioning application for the A-station was undertaken as part of a separate application and has been granted an EA. The HIA undertaken during

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		that process stated that some of the old machinery was to be kept at a museum.
	Commented that EIMS is doing a good job with the process and thinks that the project will be good.	EAP: thanked Mr Van Rensburg for his comments and stated that if he had any further comments he could make use of the email provided to submit his comments in writing to EIMS.
	Stated that he has no negative comments to share at this stage and said that he would provide a positive comment.	Comment noted.
Wayne Bruun	Mentioned privately owned land that used to be owned by Kelvin during discussion of the site alternatives.	Comment noted.
	Asked what the monetary value of the project will be.	EAP: The CAPEX value of the project was included in the scoping report and the I&AP was informed on where this information could be accessed.
	Commented on the amount of noise that comes from the plant.	EAP: stated that an Air quality and Noise Impact Study would be undertaken to model the potential noise impacts from the proposed development. Client: stated that the proposed CCGT plant will be fitted with silencers and noise proofing where possible as this is standard industry practice to reduce noise impacts.
	Asked whether the air quality effects of gas could be worse than coal.	EAP: The air quality impacts of the proposed development would most likely be significantly lower than that of coal fired power stations, however, the EAP explained that the Air Quality Impact Assessment would not be done to compare the air emissions of a CCGT plant and that of the coal fired plant but will be compared to the baseline condition and the various applicable standards and regulations.
	Stated that he has been on the EIMS website before.	Comment was noted.
	Asked if EIMS is being paid to conduct the open day and stated that EIMS is doing a good job.	EAP: stated that EIMS are being paid and are hired as independent environmental consultants by Kelvin Power to undertake the environmental authorisation process. The EAP thanked them for their comment regarding the open day.

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I&AP Name	Comment	Response
	Commented that 'they' will hopefully stop stealing the equipment (with the new proposed development).	Comment was noted.
Japie Smith	Asked who EIMS is and what their involvement is.	EAP: stated that EIMS are hired as independent environmental consultants by the client (Kelvin Power (Pty) Ltd) to undertake the environmental authorisation process.
	Asked who will be involved in the construction.	EAP: That will happen later once approvals are in place – it has not been determined yet who will construct the plant.
Robert Couperthwaite	Stated that there was no mention of electricity generation in the literature.	EAP: Provided images of the CCGT, generator to be added to the project description.
	Asked about the usage of diesel.	Client: The diesel will be used for the emergency generators to start the plant when the plant is not connected to external energy supply.
	Asked about the off-takers of the electricity.	Client: The off-takers will be Eskom via the Sebenza substation to the Eskom substation.
	Who will own this? City Power?	Client: Kelvin owns the power station, Kelvin intends to sell the electricity to Eskom through the IPP process. The electricity will be distributed via the Eskom grid.
	Stated that the country needs the additional 600MW of power.	Comment was noted.
	Stated that he has a company north of the proposed site area and is concerned about the pollution. Stated concern about the air quality and particulate matter fallout.	EAP: The proposed CCGT plant will produce significantly less pollution than the current Kelvin Power B-station. However, accurate results and models will be provided by the air quality specialist reports during the EIA phase. Client (Lavhe): The cooling towers and stacks will be short (15m).
	Enquired if Kelvin is South African owned or if it is funded by foreign investments.	Client (Lavhe): Stated that Kelvin is a South African registered private company.
	Supports the idea of the proposed development on the brownfield site.	Comment was noted.
	Stated that roads around Kelvin have deteriorated ever since Kelvin switched from receiving coal via trains to transportation by truck. Damage of roads by coal trucks was impacting them.	EAP: The proposed CCGT plant is only anticipated to have impacts on traffic during construction activities when the various parts and construction material is being delivered to site and potentially more traffic as a result of transportation of staff members. However, post construction there is no anticipated traffic impacts as the gas required to power the CCGT will be

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		piped in from the existing Sasol gas pipeline and as such will not cause any traffic related issues
	Asked if there will be relocation of homes.	EAP: No homes will be relocated.
	Summary of comments: Stated that buildings that can be preserved must be done to preserve the heritage of the site. Stated interest in the modelling of the noise and air quality. Stated that it is an industrial area and therefore has no concerns during construction as the area is already very busy. Stated interest in opportunities for work (as he is an engineer).	Comments were noted. EAP: Encouraged Robert to provide comments on the report by 17 April 2024.
Phil Bishop	Asked when the project will happen.	EAP: Expected EA mid-2025, construction period 2025-2028, and operational in 2029.
	Are they demolishing and rebuilding?	EAP: The A-station would be demolished, however, the decommissioning application for the A-station was undertaken as part of a separate application and has been granted an EA.
	Stated that he lives in Kelvin Estate and that all the houses used to be owned by Kelvin.	Comment noted.
	Concerned about the towers being demolished and the new structures being built. Asked whether there will be any explosions as he is concerned about his house and towers falling on his home.	Client: Demolition will likely be explosives. The removal of rubble will take a while but the rubble could possibly be reused.
	Asked about the timelines for construction.	Client: Construction will take approximately 3 years.
	Do they want the other plant to do the same thing?	Client: They are unsure at the moment based on the current energy strategy.
	Asked about what could be stolen.	EAP & Client: There will be good security measures, fences, etc.
	Asked what emissions that will come from the cooling towers.	EAP: The cooling towers will emit steam.
	Asked if steam is 'greener'.	EAP: The emissions will be cleaner than coal. An Air Quality specialist will conduct an Air Quality Impact Assessment, and some of the concerns that will be considered include emissions such as nitrous oxides. A presentation will be done to disseminate the information from the specialist studies and recommendations. The EAP explained the process of the public participation and the aim of soliciting input, comments/concerns from the public.

<i>EIMS Ref</i>	1607	<i>Project Name</i>	KELVIN POWER STATION COMBINED CYCLE GAS TURBINE PLANT
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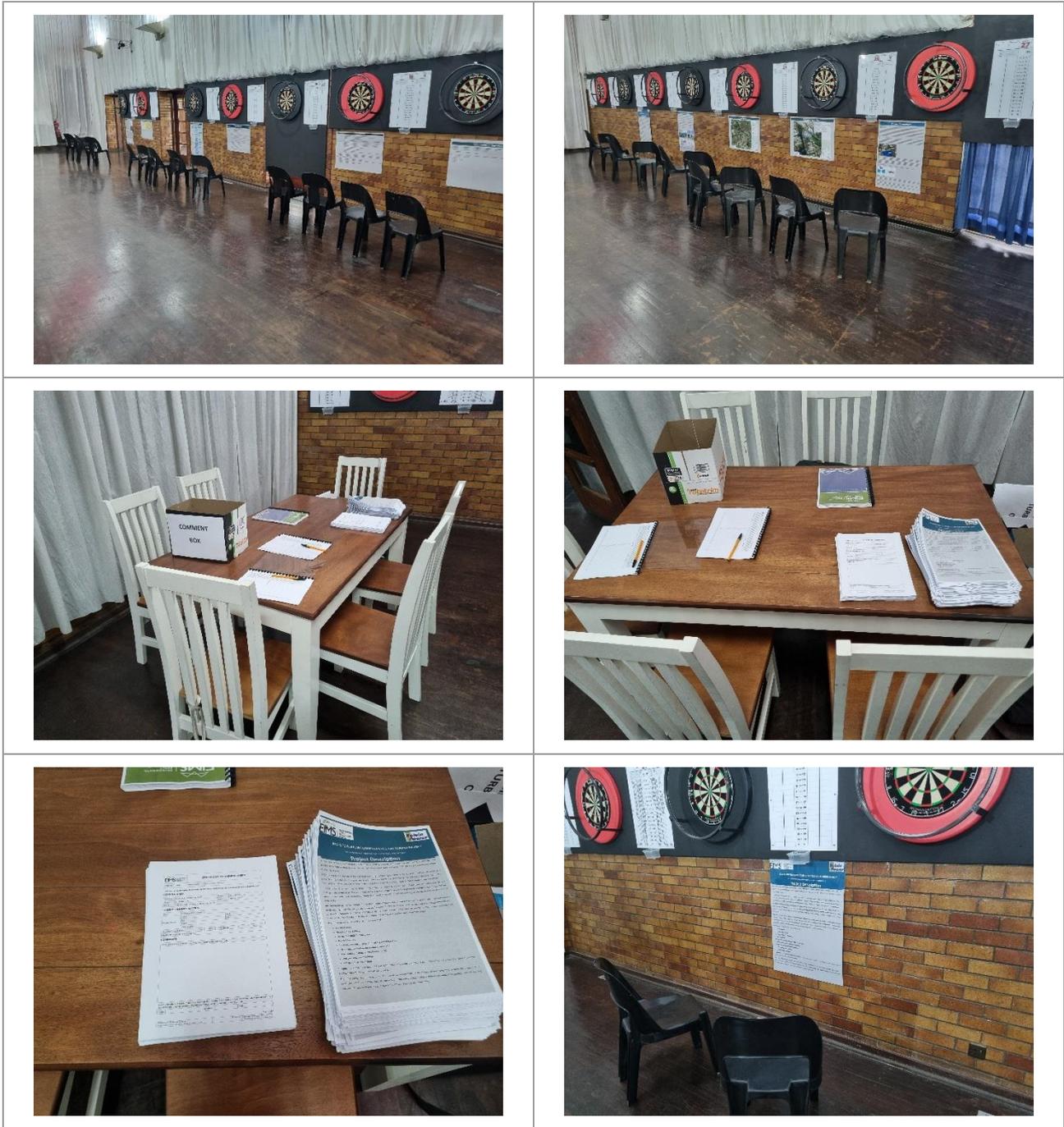
OPEN DAY DETAILS

Town	Venue	Time and Date
Spartan	Kelvin Estate Club House (Kelvin Estate Club House, Cnr Starling & Cape Wagtail Street, Kelvin Estate, Spartan)	3 April 2024, 16:00-19:00

PHOTOGRAPHS



<i>EIMS Ref</i>	1607	<i>Project Name</i>	KELVIN POWER STATION COMBINED CYCLE GAS TURBINE PLANT
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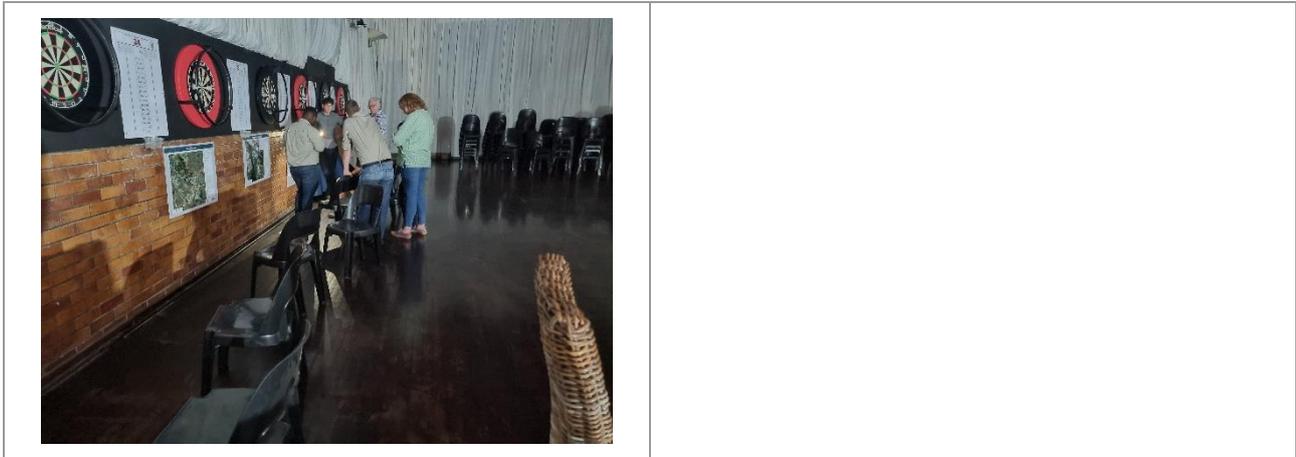


<i>EIMS Ref</i>	1607	<i>Project Name</i>	KELVIN POWER STATION COMBINED CYCLE GAS TURBINE PLANT
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PUBLIC OPEN DAY RECORD

<i>EIMS Ref</i>	1607	<i>Project Name</i>	KELVIN POWER STATION COMBINED CYCLE GAS TURBINE PLANT
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KELVIN POWER PLANT COMBINED CYCLE GAS TURBINE PROJECT

EAP: Environmental Impact Management Services (Pty) Ltd (EIMS)

Project Description

Kelvin intends to construct a **Combined Cycle Gas Turbine (CCGT) power plant** with generation capacity of up to **600 MW** at the **previous Kelvin A-station site area**. Kelvin aims to supply the electricity generated via the CCGT process to Eskom through a Power Purchase Agreement.

A CCGT power plant burns natural gas to produce electricity in a two staged process, creating a pressurised gas which powers a gas turbine that is connected to a generator. A CCGT refers to a gas turbine consisting of a heat recovery system generator that captures exhaust heat produced by the gas turbine to power a steam turbine to produce additional power to run a generator.

The CCGT Power Plant will comprise of gas turbines, heat recovery boilers and steam turbines (with associated High Voltage switchgear and control gear). The gas turbines will receive **natural gas** from the **Sasol gas pipeline network** into the gas turbine where the combustion will take place producing mechanical energy that is converted by a generator to electric power and a hot exhaust gas.

The hot exhaust gas will be captured by the **heat recovery boilers** where treated water will be heated producing high pressure steam with high potential energy. The steam will be moved to the steam turbines where the potential energy contained in the steam will be converted to mechanical energy powering a generator that will produce electricity. The steam is then discharged into a condenser where it is then collected and returned to the boiler to produce more steam (recycling).

The proposed Kelvin Power CCGT plant will consist of :

- **A control room**
- **Steam turbine building**
- **Mechanical draft Cooling tower**
- **Gas turbine unit**
- **Heat recovery steam generator (HRSG) and HRSG stack**
- **Water treatment plant for cooling tower water**
- **Raw water and demineralised water tanks**
- **Fuel gas compressor building**
- **A High Voltage switchyard.**

A **laydown area** has been identified and will be located towards the eastern boundary of the site where the current A-station cooling towers (to be demolished) are located.

The CCGT configuration will allow for the use of the **waste heat** for production of electricity thus allowing for production of electricity with the use of less fuel. The proposed power plant is anticipated to require gas supplied at approximately 40 bar and will consume approximately 21 kg/s with a net efficiency of approximately 60%.

Project Description Continued

The proposed CCGT includes MV to EHV step-up transformers to raise the voltage to the grid specification. Electricity generated at the Kelvin Power CCGT Plant will be evacuated from the plant by means of new **275kV lines** (or possibly cables) from the generating plant to the **Sebenza 275/88kV Substation located adjacent (250m) to the proposed CCGT plant**. The Sebenza Substation already has bays allocated for the integration of Kelvin Power within the substation network. The Sebenza Substation is connected to the Eskom grid via two 275kV powerlines to Prospect Substation each with a transfer capacity of 625MVA .

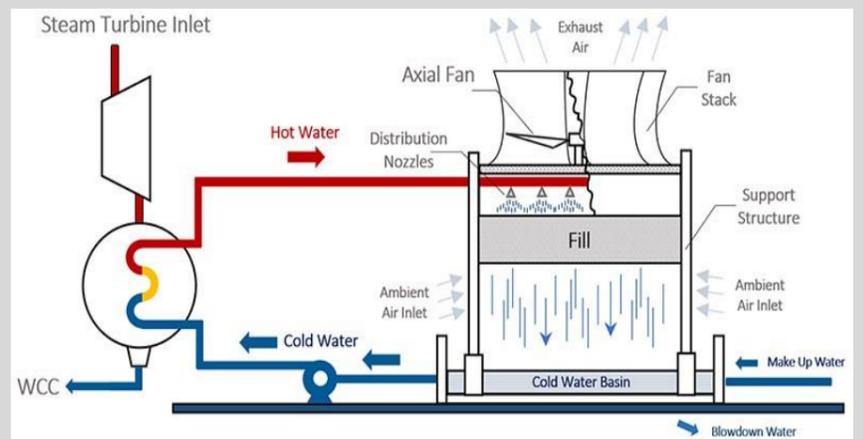
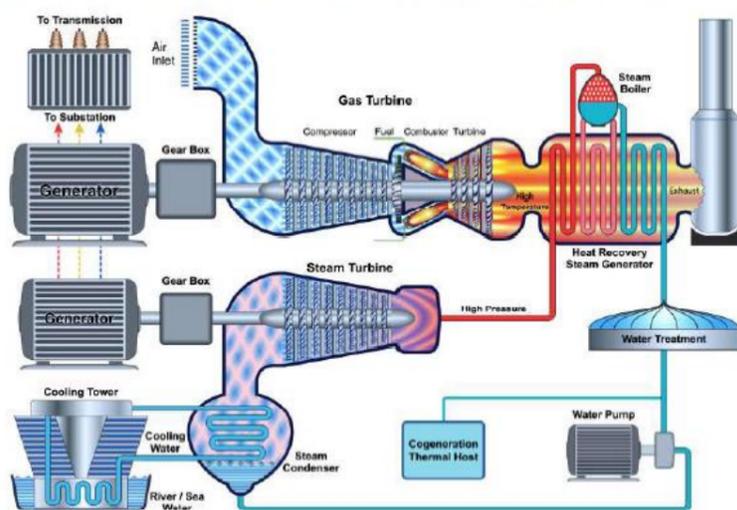
Kelvin Power also aims to construct a **diesel storage area** and a **chemical stores area** whose combined capacities could exceed 500 cubic metres. The exact quantities are to be confirmed during the EIA phase.

Water from the **Diepsloot Waste Water Treatment Works**, will be supplied through an **existing pipeline network**. Process water will be sprayed within the Cooling Tower for cooling and the turbine exhaust steam that will be recirculated within the system. **A Water Treatment Plant** will be installed to supply makeup water from system losses. Waste water will be treated in an Effluent Treatment Plant. Treated effluent water meeting required standards will be **discharged via the existing Kelvin Power effluent discharge point** into the Modderfontein river channel.

Commission of the proposed CCGT plant is expected to occur around **2027/2028**. The planned operational life cycle of the proposed CCGT plant is at least **20 years** from commissioning.



Figure 1: Combined-cycle power system using a gas turbine generator with heat recovery steam generator



Representations showing a typical CCGT Plant (Left) & Representations showing typical mechanical cooling tower (Right)

Project Alternatives

LOCATION OR PROPERTY ALTERNATIVES

Location alternatives are normally a major consideration when developing a new facility to assess the various benefits and impacts of the proposed site. However, in this case the proposed new CCGT Plant can be constructed within land already designated suitable for Power Plant generation and furthermore can piggyback onto existing approved systems negating many of the approvals needed for a virgin land development. Kelvin Power made the strategic decision to locate the proposed CCGT development in the City of Ekurhuleni within the Gauteng Province where Kelvin owns the property on which the development is proposed. The property currently has an existing operational power plant, Kelvin B station and a decommissioned plant, Kelvin A station. The property has existing spatial area to accommodate the individual components of the proposed developments (e.g. the location of the CCGT and associated infrastructure within the study. Kelvin owns the remainder of portion 391 (RE/391) of farm Zuurfontein (33) on which the proposed development will be constructed. The proposed CCGT plant is to be located where the coal fired A-station, currently undergoing a decommissioning process, is located. As mentioned above this portion of property was previously used for power generation and therefore will not require change of use permitting. This modern facility will be sited alongside the currently operational B-station. As such, no alternative properties were considered for this development. Furthermore, the proposed site is located within the South African load centre where demand for power is at its highest thus negating the need for extensive transmission line infrastructure that would be required to evacuate the power to Gauteng should the plant be located remote from the load centre.

DESIGN OR LAYOUT ALTERNATIVES

Design and layout alternatives along with spatial configurations were considered for the proposed development in order to enhance the positive and to reduce the negative impacts. During the prefeasibility studies alternative layout analysis was undertaken for the proposed CCGT plant. The layout alternative analysis took into consideration two main factors, namely, available land and equipment layout. The assessment for the optimum location for the proposed development considered many aspects such as the decommissioning and demolition of the A-station infrastructure including the three cooling towers and location of existing servitudes, environmental, social, health and safety aspects and requirements both during construction and operational activities, as well as the need for temporary laydown areas, traffic, access and egress and optimisation and utilisation of existing infrastructure. The area coloured in dark green below was assessed as the optimum location for siting the CCGT facility. An overview of the available land assessment is represented in below.

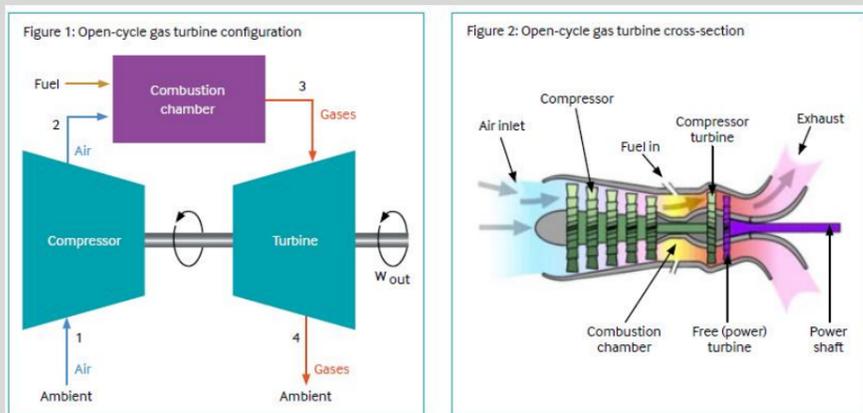


It was noted that the decommissioning of the A-station building including stacks could potentially take longer than the targeted construction start date of the proposed CCGT plant due to removal of asbestos in A-station. As such, the A-station building area is considered as unavailable land for the project and will be avoided by the layout. The optimum land siting area for locating the proposed CCGT plant is the area on which the existing A-station cooling towers, workshop, coal store and conveyor belts, East and West wagon tipplers, track hopper and weigh bridge sites are current located. These facilities are currently undergoing decommissioning/demolition activities as part of the redevelopment programme.

On the available land identified above for redevelopment, a detailed analysis was undertaken of each of the proposed layout design submitted for optimisation of the CCGT plant and associated auxiliary equipment. Following consideration of the various layout designs being proposed i.e., demolition, construction, commissioning, operational, maintenance, environmental, social, health and safety as well as access during these phases. Having identified the optimum configuration for CCGT plant layout, additional cognisance was considered for the placement of cooling towers downstream of prevailing winds, minor adjustments to the substation and evacuation transmission line's location, as well as the proximity of gas turbine and cooling tower to neighbours. See preliminary layout mapping below.

TECHONLOGY ALTERNATIVES

Two types of technologies are currently in place for power generating gas turbines, namely, Open Cycle Gas Turbines (OCGT) and Combined Cycle Gas Turbines (CCGT).



OPEN CYCLE GAS TURBINES (OCGT)

OCGTs are described in International Association of Oil & Gas Producers (IOGP) (2022) as the simplest application of gas combustion for power/electricity generation. OCGTs consist of only a gas turbine and do not recover any waste heat released during the combustion process. OCGTs are thus deemed as less efficient compared to technologies that utilises the extra heat for heating or extra power production. IOGP (2022) highlights that due to the decreased efficiency of an OCGT turbine, more fuel is required per unit power output. The use of OCGT turbines therefore tends to result in increased GHG emissions.

COMBINED CYCLE GAS TURBINE

CCGT power plants refer to a gas turbine system with an additional component known as a heat recovery steam generator (HRSG) for cogeneration. IOGP (2022) defines cogeneration as a process where waste heat recovered from the gas turbine exhaust is further utilised to drive a steam turbine and associated generator for the generation of additional power. CCGT are noted to be more efficient than OCGTs as they can produce more power from less fuel, thus contributing to lower GHG emissions.

Turbine Options A pre-feasibility study was undertaken for the development of a gas power plant with a power output of up to 600 MW. Various gas turbine technologies and configurations were considered. The gas turbine technologies that were considered included the F, H and J class gas turbines as these plants have the highest gas to power conversion efficiencies.

Scoping and EIA Process



Locality Map

Locality Map

1607 Kelvin Power Station CCGT EIA WULA

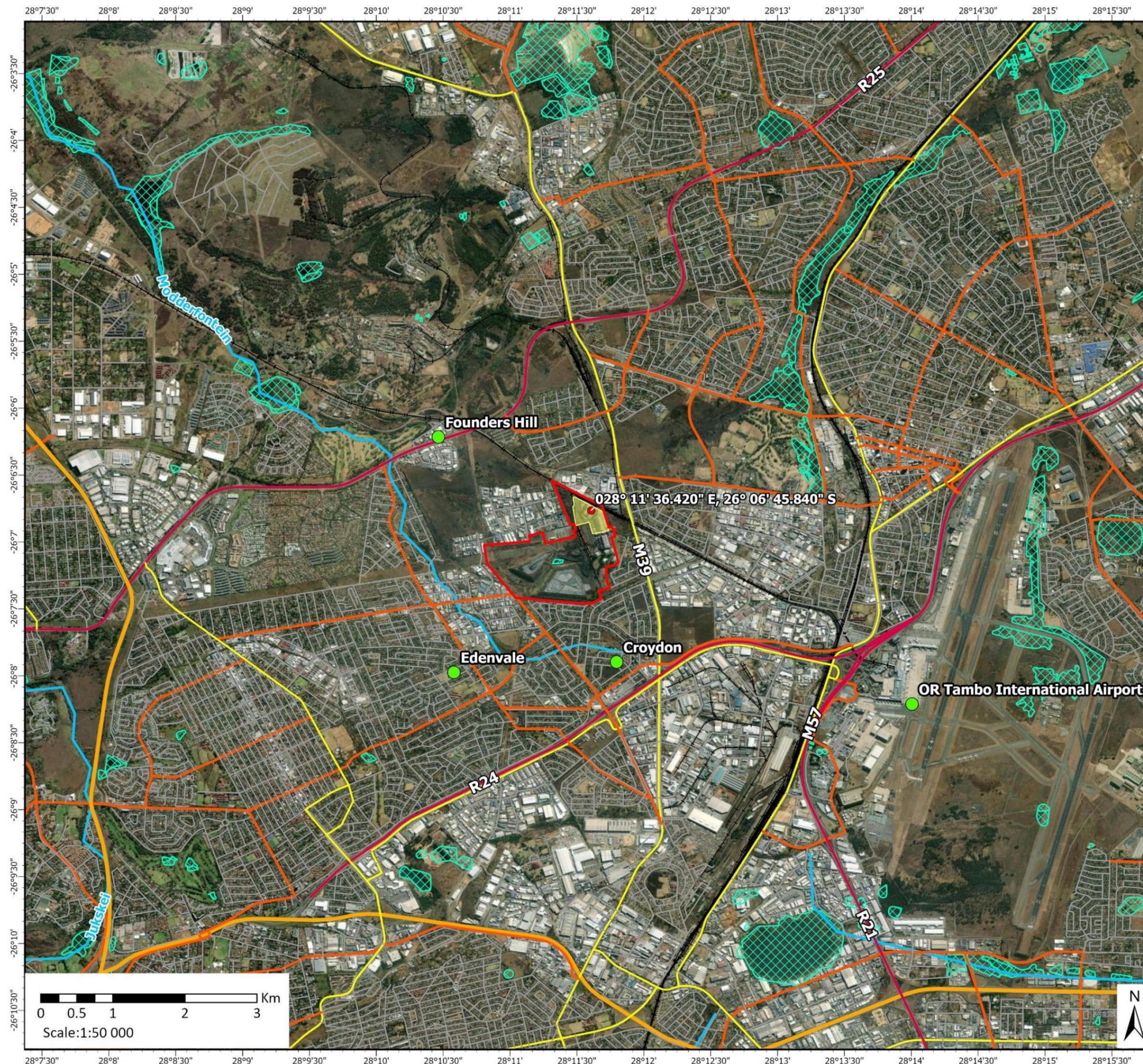
Legend

-  Kelvin Power Station Boundary
 -  Proposed Kelvin CCGT Power Plant
 -  Centre Point of Site
 -  NFEPA Rivers
 -  NFEPA Wetlands
 -  Places
 -  Railway
- Roads**
-  National Freeway
 -  Arterial Route
 -  Secondary Road
 -  Main Road
 -  Street

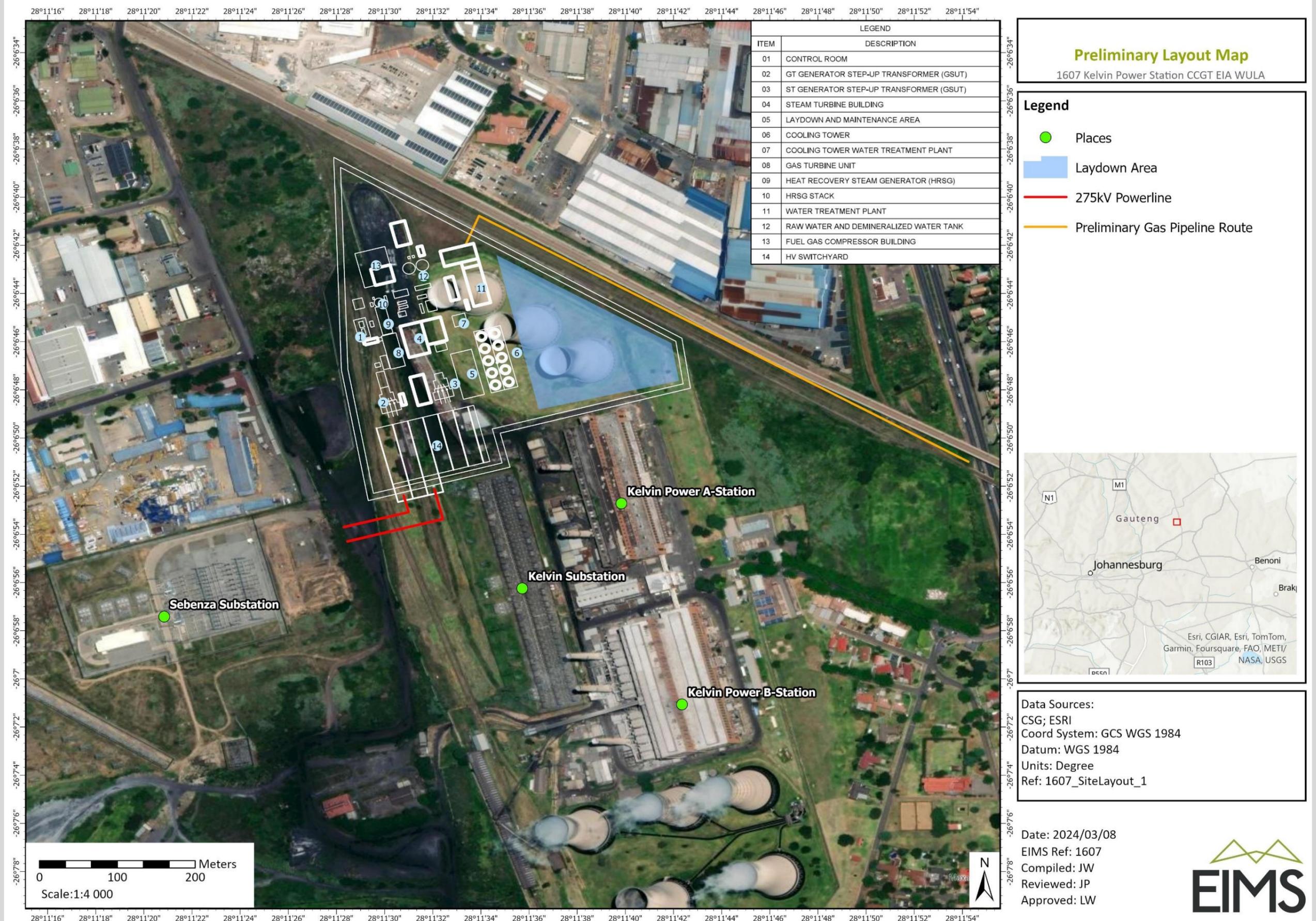


Data Sources:
 CSG; ESRI
 Coord System: GCS WGS 1984
 Datum: WGS 1984
 Units: Degree
 Ref: 1607_Locality_1

Date: 2024/03/08
 EIMS Ref: 1607
 Compiled: JW
 Reviewed: JP
 Approved: LW



Preliminary Layout Map

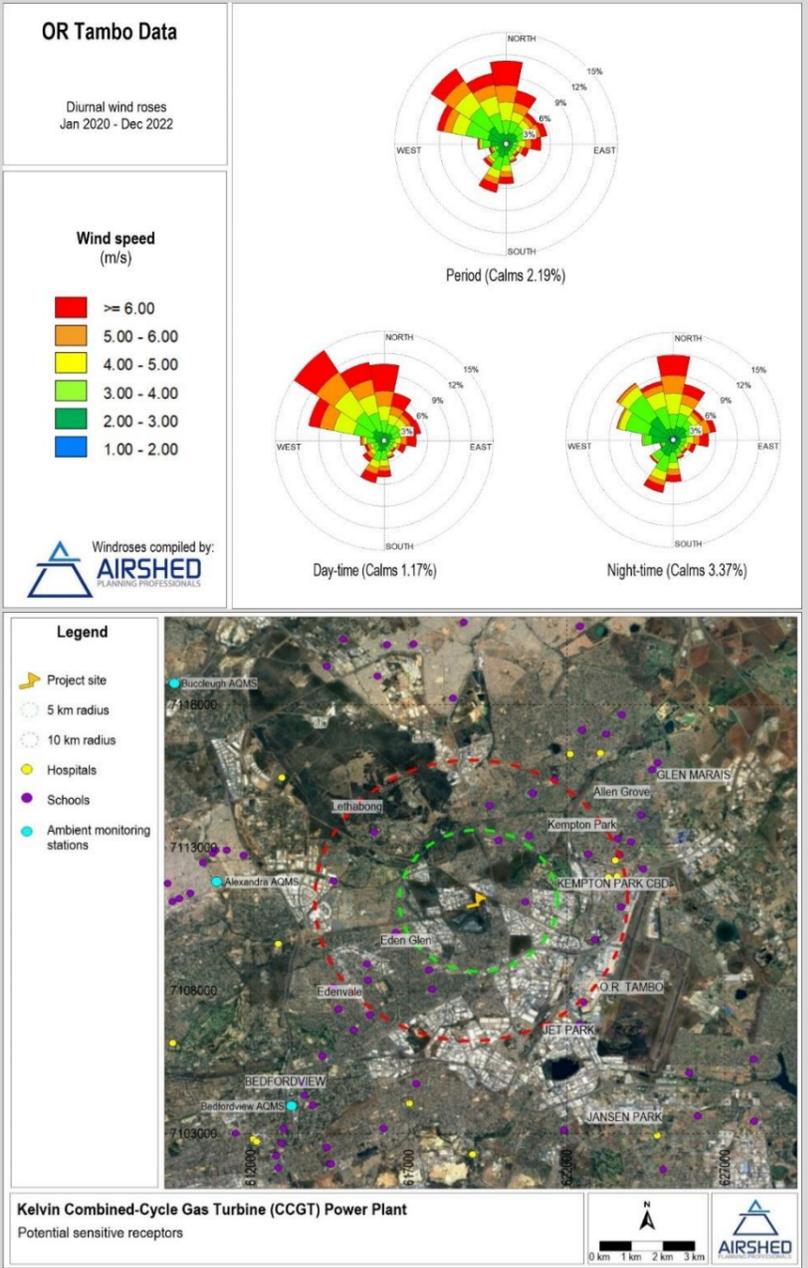
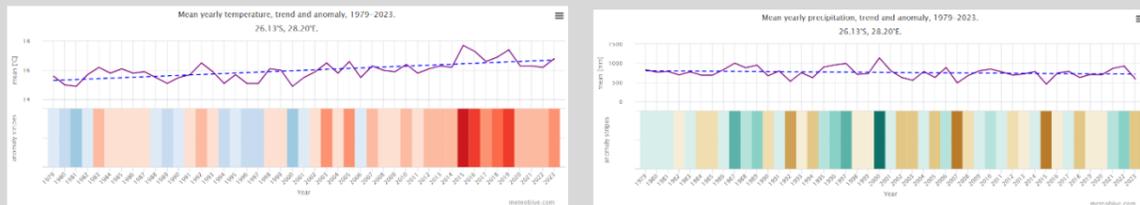


Baseline Environment

Noise: The main meteorological parameters affecting the propagation of noise include wind speed, wind direction and temperature. These along with other parameters such as relative humidity, air pressure, solar radiation and cloud cover affect the stability of the atmosphere and the ability of the atmosphere to absorb sound energy. Wind speed increases with altitude. This results in the 'bending' of the path of sound to 'focus' it on the downwind side and creating a 'shadow' on the upwind side of the source. Depending on the wind speed, the downwind level may increase by a few dB but the upwind level can drop by more than 20 dB. It should be noted that at wind speeds of more than 5 m/s, ambient noise levels are mostly dominated by wind generated noise. Meteorological data from the OR Tambo SAWS meteorological station, for the period 2020 to 2022, was used for the baseline assessment. The measured data set indicates wind flow primarily from the northwestern sector. During the day the predominant wind direction is from the west-northwest with the predominant wind direction during the night from the north. On average, noise impacts are expected to be more notable to the southeast during the day and to the south during the night. Temperature gradients in the atmosphere create effects that are uniform in all directions from a source. On a sunny day with no wind, temperature decreases with altitude and creates a 'shadowing' effect for sounds. On a clear night, temperatures may increase with altitude thereby 'focusing' sound on the ground surface. Noise impacts are therefore generally more notable during the night.

Air Quality: Air Quality Monitoring Stations (AQMS) within the study area include Buccleugh AQMS (~11.5 km northwest of the project) and Alexandra AQMS (~7.8 km west of the project) both owned by the City of Johannesburg and Bedfordview AQMS (~8.8 km southwest of the project) owned by the Ekurhuleni Metropolitan Municipality. Potential sensitive receptors within 5 km from the project include residential areas, i.e., Esther Park, Edleen, Cresslawn, Kelvin Estate, Croydon, Eden Glen and Illiondale. Residential areas within 10 km from the project site include Edenvale, Kempton Park, and Lethabong

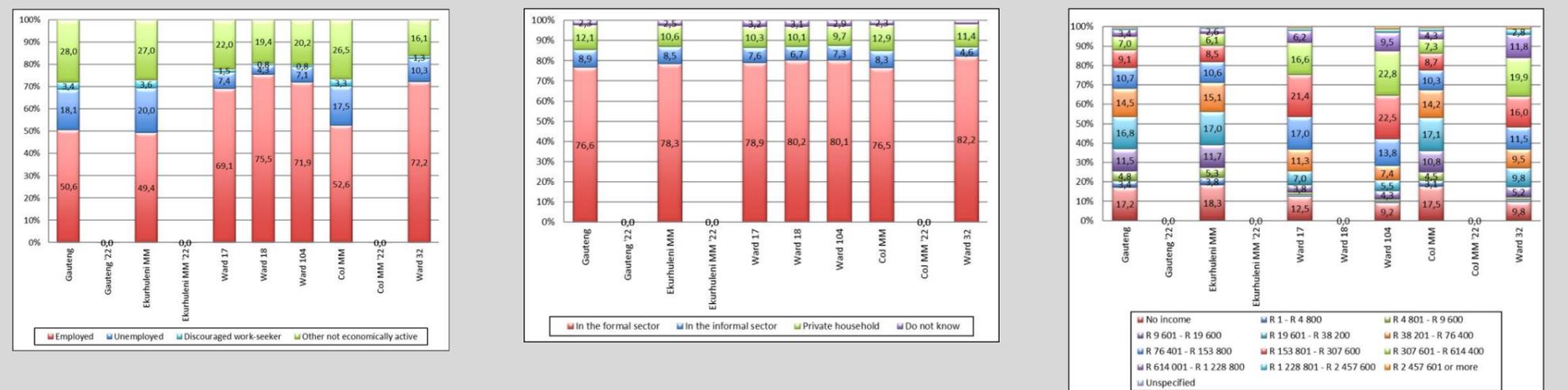
Climate: Recent change in climatic conditions near the project site were accessed from MeteoBlue. Based on a point selected over the project site, an increasing trend in the annual average temperatures have been observed from 15.3°C in 1979 to 16.7°C in 2023. The lower part the first diagram (Below Left) shows the so-called warming stripes. Each coloured stripe represents the average temperature for a year - blue for colder and red for warmer years. The change in rainfall over the same period (1979 – 2023) displays a slight decreasing trend from 807.5 mm in 1979 to 720.1 mm in 2023, where the difference from long-term average for each year in the data set is visualised by the stripes in the lower panel of the 2nd diagram (Below Right) - brown stripes indicate lower than average rainfall and green stripes above average rainfall).



Surface Water: The Kelvin site is situated on the boundary of two quaternary catchments, A21C and A21A, with 97% of the site in quaternary catchment A21C, the Jukskei River catchment. An unnamed tributary drains north-west for approximately 1.1km to confluence with the Modderfonteinsspruit from the catchment of the ash dams where effluent is discharged. The Modderfonteinsspruit confluences with the Jukskei River which drains in a north westerly direction and confluences with the Crocodile River approximately 35 km downstream. The station is situated within an industrial area, however it is also close to a number of residential areas. In addition, there are large areas of Alexandra, located downstream, where it is understood that informal use of water from the Jukskei River occurs. A-station, the area now proposed for the CCGT plant, is located in an area where there are no water resources that would be directly affected by runoff. Drainage from this section is currently via stormwater drains that drain directly to Main Channel which ultimately discharges to Modderfonteinsspruit. Kelvin has implemented a surface water monitoring programme that includes daily monitoring of the effluent and weekly monitoring at the effluent discharge point into the unnamed tributary as well as at points up and downstream of this in the Modderfonteinsspruit.

Cultural Resources: The Kelvin Power Station consists of two independent Stations, namely A-Station and B-Station, with related infrastructure. The original natural and historical landscape has been completely altered over the years since the Power Station was developed and had been in use, and as a result, if any significant cultural heritage (archaeological and/or historical) sites, features or material did exist here in the past it would have been completely destroyed or extensively disturbed as a result. Some of the structures and material related to the Power Station (and in this case A-Station) is however older than 60 years of age and has some cultural heritage (historical) significance. The site proposed for the CCGT plant is the old A-Station site for which approval for decommissioning of the stie has already been obtained, which included a heritage assessment. Much of the machinery and technology associated with A-Station, even if out of date and obsolete, forms part of this history and the way electrical power was generated in the past. This needs to be preserved in some form after the A-Station has been finally decommissioned and demolished. It however has to be noted here that although B Station is slightly younger than A-Station, a large part of the original Kelvin Power Station will be left intact and therefore be preserved as part of the landscape.

Social: The proposed site for the project is located in Ward 17 of the City of Ekurhuleni Metropolitan Municipality that is located in the Gauteng Province. Wards 18 and 104 of the City of Ekurhuleni Metropolitan Municipality and Ward 32 of the City of Johannesburg are in close proximity of the site. CoE is home to the largest airport in South Africa. Ekurhuleni is Gauteng's first aerropolis. This is a metropolis with an airport at its centre. O.R. Tambo International Airport has two terminals handling domestic and international flights. Terminal A handles international traffic and Terminal B domestic flights. The airport services airlines from all five continents and plays a vital role in serving the local, regional, intra-, and inter-continental air transport needs of South Africa and sub-Saharan Africa. It is the biggest and busiest airport in Africa. Census 2022 has not yet released employment data. Census 2011 shows relatively high levels of employment in the area, with the highest proportions of employed people in Ward 18 of the Ekurhuleni MM. It must be noted that these proportions might have decreased since 2011 due to the impact of Covid 19 pandemic and the continual loadshedding implemented by Eskom. The majority of the employed people in the areas under investigation work in the formal sector. Census 2022 has not yet released data on household income. In 2011 Ward 17 of the Ekurhuleni had the highest proportion of households (18.37%) with an average household income of R19 600 or less.



Preliminary Impact Assessment

Impact	Alternative	Phase	Pre-Mitigation							Post Mitigation							Priority Factor Criteria				
			Nature	Extent	Duration	Magnitude	Reversibility	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Confidence	Cumulative	Irreplaceable	Priority Factor	Final score
Impacts on Existing Infrastructure and Services	Alternative 1	Planning	-1	1	2	2	3	2	-4	-1	1	2	1	2	2	-3	Medium	2	1	1,13	-3,375
Impacts Due to Communication Inefficiency	Alternative 1	Planning	-1	3	4	4	3	3	-10,5	-1	3	2	2	2	2	-4,5	Medium	2	1	1,13	-5,0625
Impacts on Soils	Alternative 1	Construction	-1	2	2	1	3	3	-6	-1	2	2	1	3	3	-6	Medium	1	1	1,00	-6
Impacts on Soils	Alternative 1	Operation	-1	2	3	1	3	3	-6,75	-1	2	3	1	3	3	-6,75	Medium	1	2	1,13	-7,59375
Impacts on Soils	Alternative 1	Decommissioning	-1	2	2	1	3	3	-6	-1	2	2	1	3	3	-6	Medium	1	1	1,00	-6
Ambient Air Quality Impacts	Alternative 1	Construction	-1	3	2	2	1	3	-6	-1	3	2	2	1	2	-4	Medium	1	1	1,00	-4
Ambient Air Quality Impacts	Alternative 1	Operation	-1	3	4	2	1	3	-7,5	-1	2	4	3	1	2	-5	Medium	3	1	1,25	-6,25
Ambient Air Quality Impacts	Alternative 1	Decommissioning	-1	3	2	3	1	3	-6,75	-1	3	2	3	1	2	-4,5	Medium	1	1	1,00	-4,5
Noise Impacts	Alternative 1	Construction	-1	3	2	3	2	4	-10	-1	3	2	3	2	3	-7,5	Medium	1	1	1,00	-7,5
Noise Impacts	Alternative 1	Operation	-1	3	4	3	3	3	-9,75	-1	3	4	2	3	3	-9	Medium	1	1	1,00	-9
Noise Impacts	Alternative 1	Decommissioning	-1	3	2	3	2	4	-10	-1	3	2	3	2	3	-7,5	Medium	1	1	1,00	-7,5
Climate Change Impacts	Alternative 1	Construction	-1	4	2	2	2	3	-7,5	-1	4	2	2	2	3	-7,5	Low	1	2	1,13	-8,4375
Climate Change Impacts	Alternative 1	Operation	-1	5	4	4	3	3	-12	-1	5	4	3	3	-11,25	Low	2	2	1,25	-14,0625	
Climate Change Impacts	Alternative 1	Decommissioning	-1	4	2	2	2	3	-7,5	-1	4	2	2	2	3	-7,5	Low	1	2	1,13	-8,4375
Heritage Impacts (incl impacts on fossils)	Alternative 1	Construction	-1	2	5	2	2	1	-2,75	-1	2	5	1	2	1	-2,5	Medium	1	2	1,13	-2,8125
Waste Management Impacts	Alternative 1	Construction	-1	2	2	3	3	3	-7,5	-1	2	2	2	3	3	-6,75	Medium	2	2	1,25	-8,4375
Waste Management Impacts	Alternative 1	Operation	-1	2	4	3	3	3	-9	-1	2	4	2	3	3	-8,25	Medium	1	1	1,00	-8,25
Waste Management Impacts	Alternative 1	Decommissioning	-1	2	2	3	3	3	-7,5	-1	2	2	2	3	3	-6,75	Medium	2	2	1,25	-8,4375
Impact on Health and Safety	Alternative 1	Construction	-1	2	2	4	3	3	-8,25	-1	2	2	3	3	2	-5	Medium	1	3	1,25	-6,25
Impact on Health and Safety	Alternative 1	Operation	-1	2	4	4	3	3	-9,75	-1	2	4	3	3	2	-6	Medium	1	3	1,25	-7,5
Impacts on Terrestrial Biodiversity	Alternative 1	Construction	-1	3	2	2	3	3	-7,5	-1	3	2	1	3	3	-6,75	Medium	2	2	1,25	-8,4375
Impacts on Terrestrial Biodiversity	Alternative 1	Operation	-1	3	4	2	3	3	-9	-1	3	4	1	3	3	-8,25	Medium	2	2	1,25	-10,3125
Visual Impacts	Alternative 1	Operation	-1	3	4	1	3	4	-11	-1	3	4	1	3	3	-8,25	Medium	3	1	1,25	-10,3125
Employment Creation	Alternative 1	Construction	1	3	4	1	3	4	11	1	3	4	2	3	4	12	Medium	1	1	1,00	12
Employment Creation	Alternative 1	Operation	1	3	4	2	3	3	9	1	3	4	3	3	3	9,75	Medium	1	1	1,00	9,75
Job Losses	Alternative 1	Decommissioning	-1	3	4	2	3	5	-15	-1	3	4	1	3	5	-13,75	Medium	1	1	1,00	-13,75
Generation of electricity	Alternative 1	Operation	1	5	4	4	2	5	18,75	1	5	4	4	2	5	18,75	Medium	1	1	1,00	18,75
Indirect social impacts	Alternative 1	Construction	-1	3	3	3	2	3	-8,25	-1	3	3	2	2	3	-7,5	Medium	2	1	1,13	-8,4375
Indirect social impacts	Alternative 1	Operation	-1	3	4	3	2	3	-9	-1	3	4	2	2	3	-8,25	Medium	2	1	1,13	-9,28125
Indirect social impacts	Alternative 1	Decommissioning	-1	3	3	3	2	3	-8,25	-1	3	3	2	2	3	-7,5	Medium	2	1	1,13	-8,4375

Employment creation was identified as having a medium positive impact significance before and after mitigation during the construction and operational phase. Construction vehicles, industrial instrumentation and operators of these vehicles and equipment will be required during construction phase. Although certain aspects of the construction of the proposed plant are technically specialised, there remain opportunities for local contractors to become involved in components of construction, which are less plant - specific. The use of local contractors increases the number of employment opportunities for local people during the construction phase. Approximately 500 temporary job opportunities are to be created during the construction phase of the project. Approximately 100 employment opportunities (50 skilled and 50 unskilled) will be made available during the operational phase.

Plan of Study for EIA

Aspect	Company Responsible	Scope of Work / Terms of Reference
Air Quality Assessment	Airshed Planning Professionals	<p>The impact assessment phase of study will include the following:</p> <ul style="list-style-type: none"> • The compilation of an emissions inventory, comprising the identification and quantification of potential sources of emissions due to the project; Dispersion simulations of all potential pollutants from the project for applicable averaging periods; • Evaluation of potential for human health impacts; and, • Determination of environmental risk according to stipulated impact assessment methodology
Noise Assessment	Airshed Planning Professionals	<p>The following will be included in the environmental noise impact assessment study:</p> <ul style="list-style-type: none"> • Compilation of project source term; • Attenuation modelling of all potential noise sources due to project operations; • Evaluation of potential noise impacts on human receptors due to project activities; and, • Determination of environmental noise risk according to the EIMS stipulated Impact Assessment methodology.
Socio-economic Assessment	Equispectives	<p>The following methodology is proposed:</p> <ul style="list-style-type: none"> • The study will commence with a baseline description of the study area that will include a review of available literature. This will include relevant legislation and existing provincial and municipal documents and studies, as well as any additional literature that is deemed to be applicable to the study. This study will focus on the local and regional level. • Necessary demographic data will be obtained from Stats SA and other available official documents. • A stakeholder identification and analysis will be conducted to inform the impact assessment and assist with planning the fieldwork. Fieldwork will be used to obtain additional information and communicate with key stakeholders. • Stakeholders typically include social structures such as ward councillors, municipal representatives, landowners, community representatives, farmer's associations, forums and political leaders, amongst others. Vulnerable stakeholders will be identified and consulted with in an appropriate manner. • Information will be obtained via focus groups, formal and informal interviews, observation, immersions, in the-moment discussion groups, the Internet and literature reviews. Notes will be kept of all interviews and focus groups. • An interview schedule might be used instead of formal questionnaires. An interview schedule consists of a list of topics to be covered, but it is not as structured as an interview. It provides respondents with more freedom to elaborate on their views. • The final report will focus on current conditions, providing baseline data. Each category will discuss the current state of affairs, but also investigate the possible impacts that might occur in future. • Recommendations for mitigation will be made at the end of the report. • The study will have a participatory focus. This implies that the study will focus strongly on including the local community and key stakeholders. Participatory methods will be used to identify local economic development projects. • Impacts will be rated according to the prescribed impact tables and risks will be calculated using social risk assessment methods. • Information obtained through the stakeholder engagement process will inform the writing of the report and associated documents.
Climate Change Assessment	Airshed Planning Professionals	<p>The impact assessment will include the following information:</p> <ul style="list-style-type: none"> • An estimation of the CO₂-equivalent emissions from the project, associated fuel use, vegetation clearing activities (if applicable), and electricity use; • Estimate the impact of the project on national greenhouse gas emissions; • Evaluation the potential impact of global climate change on the project by identifying potential physical risks to the project, employees, and communities; • Provide the potential risk of climate change on the project and the risk of the project on climate change; • Determination of environmental risk according to stipulated Impact Assessment methodology and, • Recommendation of mitigation and management measures, where applicable. <p>The climate change impact assessment report will consider Scope 1 emissions, which are the emissions directly attributable to the proposed project, Scope 2 emissions, which are the emissions associated with bought-in electricity over the lifetime of the project, and Scope 3 emissions (as far as is reasonable and practically possible), which consider the "embedded" carbon in bought-in materials and downstream emissions.</p>
Major Hazardous Installation Study	RISCOM	<p>The scope of the risk assessment will include:</p> <ul style="list-style-type: none"> • Review of revised designs of proposed processing units, inventories, routing and transport conditions for all alternatives;

Aspect	Company Responsible	Scope of Work / Terms of Reference
		<ul style="list-style-type: none"> • Development of accidental spill and fire scenarios for the facility; • Using generic failure rate data (for tanks, pumps, valves, flanges, pipework, gantry, couplings and so forth), determination of the probability of each accident scenario; • For each incident developed, determination of consequences (such as thermal radiation, domino effects, toxic-cloud formation and so forth); • For scenarios with off-site consequences (greater than 1% fatality off-site), calculation of maximum individual risk (MIR), taking into account all generic failure rates, initiating events (such as ignition), meteorological conditions and lethality. • Assessing the risk assessment to the criteria of SANS 1641; and commenting on suitability of the project; • Suggest mitigation, if possible, for successful implementation. <p>This information will then be used to identify any shortcomings and to rank the risks for possible risk reduction programmes. The results of the assessment will be tabled in a document addressing some or all of the topics listed in the MHI regulations and would not be adequate for submission as a MHI risk assessment. It should also be noted that the risk assessment will not constitute an environmental risk assessment covering topics such as pollution.</p>
Heritage and Palaeontology	PGS Heritage	<p>Assuming a new Heritage Assessment is required the following will be undertaken:</p> <ol style="list-style-type: none"> 1) Desktop Study: An archaeological and historical desktop study will be undertaken by utilising the previous studies conducted. This will be augmented by an assessment of old topographical maps and previous archaeological and heritage impact assessments undertaken for the study area and surroundings. 2) Fieldwork: An experienced fieldwork team inclusive of heritage specialists and architectural historian from PGS will undertake an archaeological and heritage site survey to identify the heritage resources within the study area. Tracklogs will be recorded, and the locations of all heritage resources identified during the fieldwork will be documented using a hand-held GPS. Furthermore, the documentation will reflect a brief qualitative description and statement of significance for each site and includes a photographic record of all the sites. 3) Report: A Heritage Impact Assessment will be written inclusive of sub-specialist studies. <ul style="list-style-type: none"> • Assessment of the significance of the proposed development during the Pre-construction, Construction, Operation, Decommissioning Phases. • Comparative assessment of alternatives (infrastructure alternatives will be provided); • Recommend mitigation measures in order to minimise the impact of the proposed development; • Design and material guidelines irt heritage design if required, and • Implications of specialist findings for the proposed development (e.g. permits, licenses etc) <p>A previous heritage assessment was already completed for the decommissioning project in 2021. It is possible that exemption from the requirements of a full HIA will be granted for the CCGT project, and an exemption letter submitted to SAHRA in this regard.</p>

The same method of assessing impact significance as was used during the Scoping phase will be applied during the EIA phase. The significance of environmental impacts will be rated before and after the implementation of mitigation measures. These mitigation measures may be existing measures or additional measures that may arise from the impact assessment and specialist input. The specialist studies will recommend practicable mitigation measures or management actions that effectively minimise or eliminate negative impacts, enhance beneficial impacts, and assist project design. If appropriate, the studies will differentiate between essential mitigation measures, which must be implemented and optional mitigation measures, which are recommended. The EIA and EMPr will be compiled in line with the requirements of Appendix 3 and 4 of the NEMA EIA Regulations.

The proposed public participation process to be followed for the EIA phase is provided below.

- The commenting periods that will be provided to the I&AP's (and the competent authorities) will be 30 days as per the relevant legislative requirements.
- The dates of the review and commenting period for the draft EIA/EMPr will be determined at a later date and communicated to all registered I&AP's through faxes, emails, SMS's and/or registered letters.
- The location at which the hard copy of the EIA report will be made available is at the same public places in the project area that the Scoping Report was made available, sent electronically to stakeholders who request a copy, and placed on the EIMS website: www.eims.co.za.
- The public participation will be undertaken in compliance with NEMA GNR 982 (Chapter 6).
- A public meeting will be held during the review period for the EIA report. Focus group meetings will also be held with key stakeholders as and where necessary.
- All comments and issues raised during the comment periods will be incorporated into the final EIA Report.

Submission of Comments

The Public Participation Process (PPP) for the proposed project has been undertaken in accordance with the requirements the NEMA in line with the principles of Integrated Environmental Management. Comments received during this Scoping Report review period will be collated and added to the Public Participation Report and updated accordingly for inclusion in the finalised Scoping Report to be submitted to the Competent Authority (CA). Should the CA accept the Scoping Report, an EIA Report including and Environmental Management Programme (EMPr) will then be compiled and presented for public comment as part of this EIA process during which time further stakeholder engagement will take place.

The Scoping Report will be available for public review from 16 March 2024 – 17 April 2024, for a period of 30 days at the following venues:

- Kempton Park Library; and
- Electronic copies will be available on the EIMS website (www.eims.co.za/public-participation/).

The Scoping Report will be made available for public review and comment for a period of 30 days from 16 March 2024 – 17 April 2024. Contact details are provided below:

Environmental Impact Management Services (Pty) Ltd (EIMS)

P.O. Box 2083 Pinegowrie 2123

Phone: 011 789 7170 / Fax: 086 571 9047

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