MEETING NOTES

JOB TITLE	Hendrina Green Hydrogen and Ammonia facility
PROJECT NUMBER	41104000
DATE	16 August 2022
TIME	11h00
VENUE	MS Teams
SUBJECT	Pre-application Meeting with MDARDLEA
CLIENT	Enertrag SA
PRESENT	Ashlea Strong (AS) – WSP Olivia Allen (OA) - WSP Thirushan Nadar (TN)- WSP Sandhisha Jay Narain (SJN) – ENERTRAG SA Sean Maphosa (SM)- ENERTRAG SA Dineo Tswai (DT) – Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA)
APOLOGIES	Charity Mthimunye (CM) – MDARDLEA Michael Barnes (MB)- ENERTRAG SA

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MATTERS ARISING	ACTION
NOTE: These notes constitute a summary of the key discussion points and decisions made during the discussion. They are not intended to reflect the exact discussions held.	
1.0 INTRODUCTIONS SJN opened meeting welcoming everyone and handed over to WSP. Each team proceeded with introductions (WSP, MDARDLEA & ENERTRAG SA) AS stated that SJN (ENERTRAG SA) will be mainly involved in the Hendrina Green Hydrogen and Ammonia facility; and OA will be the key contact and EAP from WSP. AS noted, that MB gave apologies for not attending	None
2.0 PRESENTATION AS requested that all questions should be raised with the "hand" function on MS teams WSP initiated the presentation for the Hendrina Green Hydrogen and Ammonia project overview details and specifications. The presentation is included in **Appendix A**. The presentation outlined the overall project, including the project background, locality, Environmental Authorisation (EA) process, triggered listed activities, specialist studies required and the Public Participation Process. AS enquired whether ENERTRAG SA has identified an SPV for this project or will it be done under ENERTRAG SA at this stage. **Project Overview** AS stated that the proposed facility will trigger a full EIA process as the infrastructure will be up to 25 Hectares and will require a significant amount of clearance. **High-Level Process Flow** AS enquired whether medical grade oxygen can be produced from the production process; SJN responded that this is not a typical practice but can be considered in future. **Authorisations required** SJN confirmed that a full AEL licence will not be required for the project after liaison with the district municipality. **Listed Activities** AS enquired whether to include both listed Activity 27 of Listing Notice (LN) 1 and LN 2 or to only include Activity 27 of LN 2	MDARDLEA noted this point SJN confirmed as ENERTRAG SA MDARDLEA confirmed to include both
3.0 QUESTIONS AND ANSWERS MDARDLEA enquired whether there has been confirmation as to how waste will be stored on site and whether a Waste Management Licence (WML) is required. AS confirmed that it will not need a WML since the quantity of waste to be generated is small. However, once the facility is in operation or being constructed, the Applicant will consider applying for Category C for the temporary storage of waste (storage for no longer than 90 days). AS requested confirmation of the case officer for the project. MDARDLEA stated that it will depend on the workload of the individual, but this will be confirmed once the application is received. AS enquired whether the Department would prefer a hard copy of the report or a one drive link of the electronic version of the reports, MDARDLEA confirmed that both a hard copy and an electronic copy of the reports can be submitted and two hard copies must be submitted to MDARDLEA.	WSP noted this

4.0	**CONCLUDING** – No further comments from attendees – Meeting notes will be circulated – Meeting concluded	Presentation attached to minutes

APPENDIX A: PRESENTATION

MDARDLEA Pre-Application Meeting

Hendrina Green Hydrogen & Ammonia Facility

4 August 2022

Introductions

- Developer:
  ENERTRAG South Africa (Pty) Ltd:
  - Sandhisha Jay Narain

- EAP:
  WSP Group Africa (Pty) Ltd:
  - Thirushan Nadar (Environmental Consultant)
  - Olivia Allen (Project Manager)
  - Ashlea Strong (Project Director)

- Authority:
  Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA):
  - Charity Mthimunye

Agenda

1. Overview of the Project
   - Background
   - Location
   - Project Description
2. Overview and Confirmation of Permitting Process
   - Listed Activities
   - Specialist Assessments as identified by DFFE Screening Tool
   - Specialist Studies commissioned
   - Specialist Studies not commissioned
3. Public Participation Process
4. Timeframes
5. Questions and Discussions
6. Way Forward

1. Overview of the Project

Background

ENERTRAG SA proposes to develop the Hendrina Renewable Energy Complex, the complex comprises of five separate projects namely:

- Hendrina North Wind Energy Facility (up to 200MW) over 3600ha*
- Hendrina South Wind Energy Facility (up to 200MW) over 2900ha*
- Hendrina North Grid Infrastructure (up to 275kV) – 15km*
- Hendrina South Grid Infrastructure (up to 275kV) – 16km*
- **Hendrina Green Hydrogen and Ammonia Facility (up to 25Ha)**

The proposed **Hendrina Green Hydrogen and Ammonia facility** will be located 17km west of Hendrina, in the Steve Tshwete Local Municipality, of the Nkangala District Municipality, Mpumalanga Province.

* The competent authority for the remainder of the projects is the **Department of Forestry, Fisheries and the Environment (DFFE)**

1. Overview of the Project

Applicant

The proposed project will be applied for by the developer Enertrag South Africa (Pty) Ltd

1. Overview of the Project

Location

	Camden Green Hydrogen & Ammonia
Province:	Mpumalanga
District Municipality:	Nkangala District Municipality
Local Municipality:	Steve Tshwete Local Municipality
Size of Facility:	Up to 25 hectares

Three alternative Project locations are being investigated for the development of the proposed Project:

1. Overview of the Project

Location- Alternative 1

Site Alternative 1
Located on Portion 3 of the Farm Dunbar 189IS, at the site of an old abandoned farmyard and has three powerline options from the associated Hendrina North and South Wind Energy Facilities ("WEF") and has two options for water supply to the Site as follows:
Powerline option 1 is up to 2km in length, to the Hendrina North WEF substation Option 1 on Portion 1 of the Farm Dunbar 189IS;
Powerline option 2 is up to 7km in length, to the Hendrina North WEF substation Option 2 on Portion 3 of the Farm Hartebeestkuil 185IS;
Powerline option 3 is up to 1.5km in length, to the Hendrina South WEF substation on Portion 3 of the Farm Dunbar 189IS.
Water Option 1 constructing a new pipeline (up to 16km) from the Komati Power Station
Water Option 2 constructing a new pipeline (up to 4km) from the Usuthu water pipeline network.

1. Overview of the Project

Location- Alternative 1

Proposed pipeline
Proposed powerline
Proposed GH&A site

1. Overview of the Project

Location- Alternative 2

Site Alternative 2
Located on Portion 3 of the Farm Dunbar 189IS and Portion 18 of the Farm Weltevreden 193IS, adjacent to the proposed Hendrina South WEF substation and has three powerline options from the associated wind farms and two water supply options to the site as follows:
Powerline option 1 is up to 3km in length to the Hendrina North WEF Option 1 substation on Portion 1 of the Farm Dunbar 189IS;
Powerline option 2 is up to 8km in length to the Hendrina North WEF substation Option 2 on Portion 3 of the Farm Hartebeestkuil 185IS;
Powerline option 3 is up to 0.5km in length to the Hendrina South WEF substation on Portion 3 of the Farm Dunbar 189IS;
Water Option 1 constructing a new pipeline (up to 17km) from the Komati Power Station
Water Option 2 constructing a new pipeline (up to 5km) from the Usuthu water pipeline network.

1. Overview of the Project

Location- Alternative 2

Proposed pipeline
Proposed powerline
Proposed GH&A site

1. Overview of the Project

Location- Alternative 3

Site Alternative 3
Site Alternative 3 is located on Portions 14 and 15 of the Farm Weltevreden 193IS and has three powerline options from the associated wind farms and two water supply options as follows:
Powerline option 1 is up to 5km in length to the Hendrina North WEF Option 1 substation on Portion 1 of the Farm Dunbar 189IS;
Powerline option 2 is up to 5km in length to the Hendrina North WEF substation Option 2 on Portion 3 of the Farm Hartebeestkuil 185IS;
Powerline option 3 is up to 7km in length to the Hendrina South WEF substation on Portion 3 of the Farm Dunbar 189IS.
Water Option 1 constructing a new pipeline (up to 19km) from the Komati Power Station.
Water Option 2 constructing a new pipeline (up to 7km) from the Usuthu water pipeline network.

1. Overview of the Project

Location- Alternative 3

Proposed pipeline
Proposed powerline
Proposed GH&A site

Farm Portions affected by the Project Alternatives

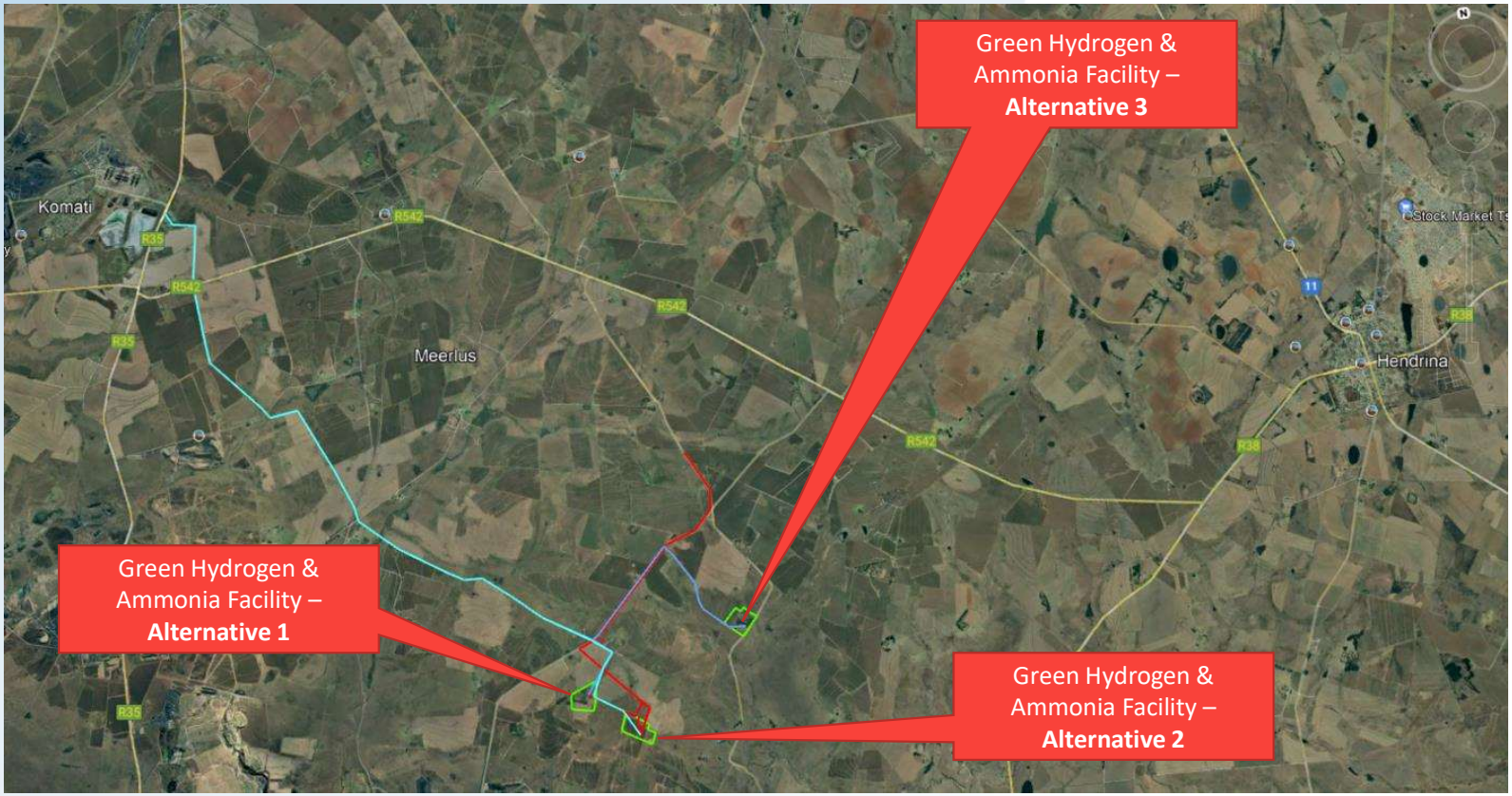
Parent Farm	Farm No.	Portion No.
Alternative 1		
Dunbar	189IS	3
Alternative 2		
Dunbar	189IS	3
Weltevreden	193IS	18
Alternative 3		
Weltevreden	193IS	14
Weltevreden	193IS	15

Farm Portions affected by the Project Alternatives

Parent Farm	Farm No.	Portion No.
Associated pipelines and powerlines may affect portions of the following land parcels:		
Bultfontein	187IS	1
Bultfontein	187IS	2
Bultfontein	187IS	3
Bultfontein	187IS	4
Bultfontein	187IS	6
Bultfontein	187IS	10
Bultfontein	187IS	14
Dunbar	189IS	0
Dunbar	189IS	1
Dunbar	189IS	2
Dunbar	189IS	4
Dunbar	189IS	5
Dunbar	189IS	6
Dunbar	189IS	7
Geluk	26IS	6
Geluk	26IS	7
Hartebeestkuil	185IS	3
Komati Power Station	56IS	0
Wilmansrust	47IS	1
Wilmansrust	47IS	3
Wilmansrust	47IS	9

1. Overview of the Project

Locality of the Proposed Project Alternatives



1. Overview of the Project

What is Green Hydrogen and Ammonia Production?

They are three types of Hydrogen, namely brown, grey, and green hydrogen. These are named based on the process used to make them, and the emissions each process emits.

- Brown hydrogen requires the burning of fossil fuels (coal) in order to complete the gasification process. This processes releases vast greenhouse gases (GHG) emissions into the atmosphere.
- Grey hydrogen is extracted from natural gases through a process known as steam reforming. This process also releases GHG emissions into the atmosphere.
- **Green** hydrogen and ammonia production differs from traditional production technologies in that the process relies exclusively on renewable resources (renewable energy) and for input air and water (feedstock), to produce commercially usable green hydrogen and ammonia. This method has no associated GHG emissions.

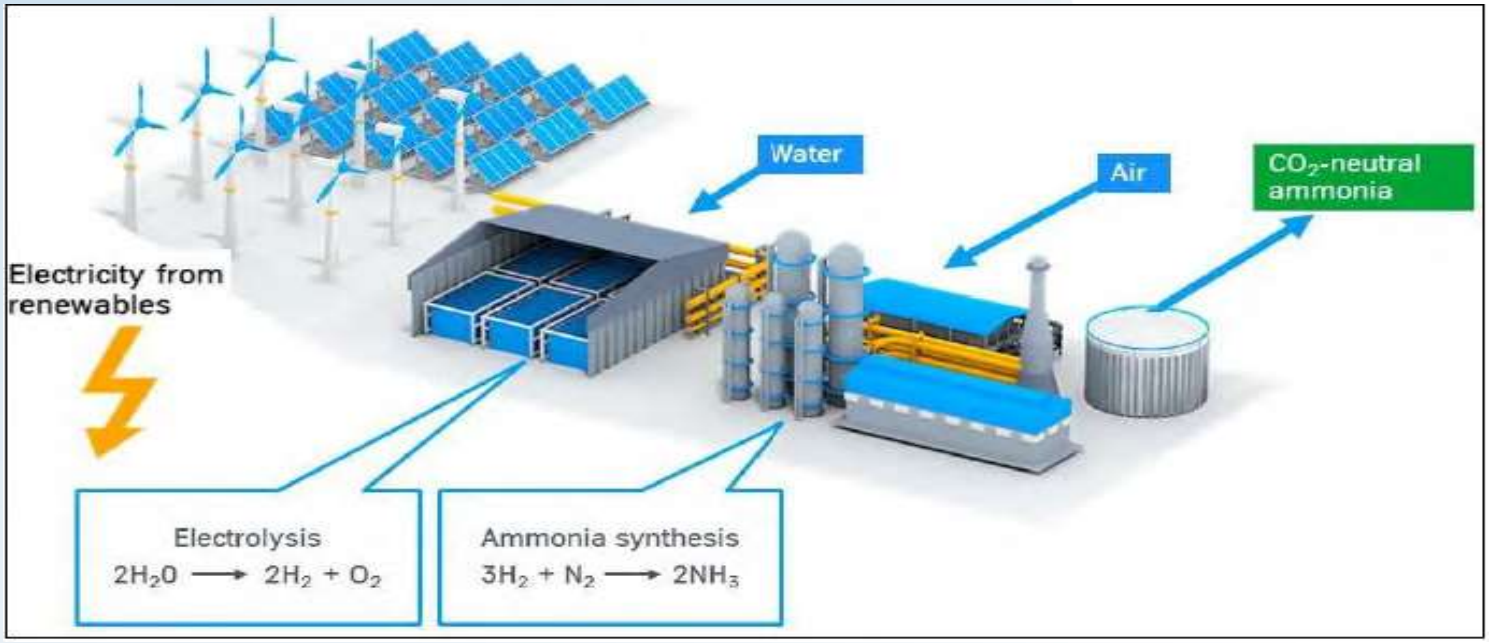
1. Overview of the Project

What are Hydrogen and Ammonia used for?

- Hydrogen may be utilised in fuel cells to generate electricity and in the transport industry via various derivatives.
- Hydrogen is used for welding and in the production of other chemicals such as methanol and hydrochloric acid and also has other commercial uses like the filling of balloons.
- Hydrogen is also a primary input to the production of ammonia.
- Ammonia is primarily used in the production of ammonium nitrate (fertiliser).
- Ammonia is also used as refrigerant gas and the manufacture of plastics, explosives, textiles, pesticides and other chemicals.
- Ammonia can also be used as a stable ‘carrier’ of hydrogen, allowing hydrogen to be readily stored and transported.

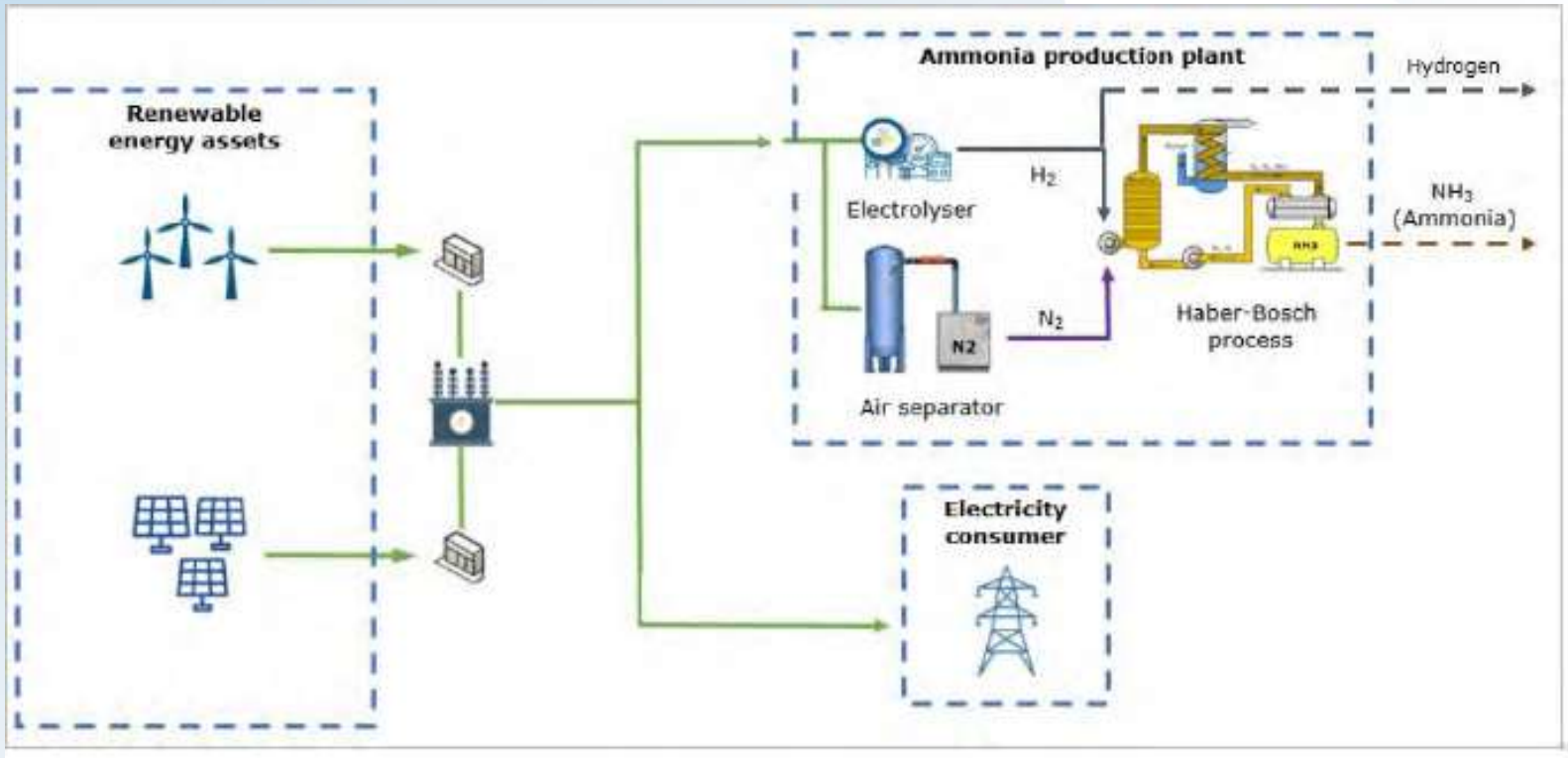
1. Overview of the Project

Example of Integrated Hydrogen and Ammonia Complex



1. Overview of the Project

High-Level Process Flow



1. Overview of the Project

These are Provisional Values which are subject to change, pending further layout revisions

Facility Components

No.	Component	Footprint (Ha)	Storage Capacity (m^3 / tons)	Maximum Throughput (m^3 / tpa)
1	Water Reservoir	2	6 800 / 6 800	800 / 800
2	Water Treatment Unit	1.5	N/A	192 000 / 192 000
3	Electrolyser Unit	1	N/A	(1 239 157 – 301 932 367) / 20 000
4	Air Separation Unit	0.5	N/A	92 905 405 / 110 000
5	Ammonia Processing Unit	2	N/A	149 253 / 100 000
6	Liquid Air Storage System (LAES)	1	3 983/ 3 505	460 227 / 405 000
7	Liquid Ammonia Storage Tank	2	2 273/ 1 523	261 194 / 175 000
8	Hydrogen and Oxygen Storage Tank Farm	12	59 566/ 800	5 576 208 / 90 000
9	Ancillary infrastructure	3	n/a	n/a
	Total Footprint	**25**		

1. Overview of the Project

Components – Water Reservoir

- Water is required for the production of hydrogen and for heating and cooling purposes
- Water will be stored in a water reservoir with a footprint of up to 2ha.
- The water reservoir will have a capacity of approximately 6800m3.
- The water reservoirs will consist of a reinforced concrete or steel cylindrical tanks.
- Possible water sources:
  - Groundwater
  - Municipal Water
  - Purified Wastewater
  - Usuthu Pipeline

These are Provisional Values which are subject to change, pending further layout revisions

1. Overview of the Project

These are Provisional Values which are subject to change, pending further layout revisions

Components – Water Treatment

- Purified water from the water treatment facility is the main input to the next step in the process, namely the electrolyser
- Water treatment technology:
  - Water treatment facilities usually contain multi-filtration stages and pumps.
  - Water for the facility must first be purified (ASTM Type II quality) through a Reverse Osmosis system (RO).
  - The RO system consumes between 10-16 litres of water per kg -of hydrogen. Water consumption ultimately depend on the quality of the feed water.
  - The facility is estimated to consume up to 192 000tpa of water per annum
- Water treatment is associated with the generation of concentrated wastes removed from the water, such as brine salt.
- The quantity of brine produced is directly related to the quality of the feedwater and efficiency of the RO process.
- Based on standard tap water, it can be assumed that for every 10 litres of purified water there will be 4 litres of bine produced.
- Liquid brine can be made into a solid through several available technologies such as, settlement tanks, cooling water circuits, and forced crystallization.

1. Overview of the Project

These are Provisional Values which are subject to change, pending further layout revisions

Components – Water Treatment cont.

- Based on the water samples taken to date and the quality of the Usuthu pipeline feedwater, a total dissolved solids content of around 200mg/l is anticipated.
- Should plant consume up to 192 000 tons of water, this would result in a maximum of 38 tons of sold salt being created per year (~105kg per day) assuming all salts are removed.
- This represents the worst-case scenario.
- Liquid brine will be dewatered to recycle water and reduce the need for new input water. This dewatered, solid brine will then be readily disposed off at the nearest suitably licenced waste disposal facility.
- On-site storage of solid brine blocks will be in containerised waste skips with sufficient capacity for replacement every 1 – 2 weeks, during which time a large truck will remove the filled container to a waste disposal facility .
- Many of the surrounding mines have existing, licensed waste management facilities potentially suitable for the disposal of such wastes, or nearby waste disposal facilities may be utilised.

1. Overview of the Project

Components – Water Treatment cont.

- Alternatively (least preferred option), the wastewater will be used for irrigation water for the local famers by diluting the concentrated liquid brine produced by the hydrogen and ammonia plant by introducing additional fresh water, or where possible re-used process water from the RO plant.

- In addition, should sufficient quantities of feed water be available, brine may be diluted with fresh feedwater and used for Solar PV panel washing, dust suppression or similar use.

These are Provisional Values which are subject to change, pending further layout revisions

1. Overview of the Project

These are Provisional Values which are subject to change, pending further layout revisions

Components – Electrolyser

- The up to 150MW electrolyser will have a footprint of up to 1ha.
- The Electrolyser will use direct electric current (obtained from the Renewable Energy Facilities) to drive an otherwise non-spontaneous chemical reaction
  - The separation of $2H_2O$ (water molecule from the RO process) through a reduction-oxidation (redox) process into H_2 (Hydrogen on the cathode side) and O_2 (Oxygen on the anode side).
  - Electrolysers are modular and currently range in size from 5MW – 20MW. It is proposed that the Green Hydrogen Facility will consist of 15 sets of 10MW electrolysers.
- Two electrolysis technologies may be considered, namely alkaline- and polymer electrolyte membrane electrolysis.
- An 150MW electrolyser would produce up to 20,000 tons per annum (tpa) of green hydrogen and up to 100,000 tpa of green oxygen.
  - The oxygen may be released in a controlled manner or stored and sold as a by-product.
  - The hydrogen may be directed to the Ammonia production plant (see “ammonia processing” below) or be stored and sold to interested parties directly

1. Overview of the Project

Components – Air Separation Units

- Air is obtained from the immediate surroundings and separated into nitrogen (N_2) and oxygen (O_2) with the impurities removed.
- The process involves air compression and temperature manipulation in a pressure-controlled environment to separate gasses from one another and produce gaseous N_2.
- The air separation unit will have a maximum capacity of up to 110,000 tpa.
- Alternative technologies exist (including Pressure Swing Adsorption (PSA) and Membrane Separation Technologies) and are being evaluated; the most efficient process will be implemented in the final project design

These are Provisional Values which are subject to change, pending further layout revisions

1. Overview of the Project

Components –Ammonia Processing Units

- Ammonia is produced through the Haber-Bosch process.
- This is where nitrogen and hydrogen are reacted to produce ammonia.
- Nitrogen (N_2) from the air separator process and Hydrogen (H_2) from the electrolyser are reacted over a bed of catalyst to favour the production of ammonia (NH_3).
- The gas is then rapidly cooled to form anhydrous (free from water) ammonia because it is more stable and less toxic in liquid form. Un-reacted N_2 and H_2 will be recycled back to the reactor.
- If the full 20,000 tpa of green hydrogen generated by the electrolyser is directed to this process, this will produce up to 100,000tpa of green ammonia for market

These are Provisional Values which are subject to change, pending further layout revisions

1. Overview of the Project

These are Provisional Values which are subject to change, pending further layout revisions

Components – Storage

- Liquid air energy system (LAES) for nitrogen storage:
  - Liquid air energy will be used to liquefy nitrogen for storage, energy and feedstock requirements. LAES consists of three main stages:
    (1) cooling and separation of the air,
    (2) storage (usually in insulated vessels at low pressure) and
    (3) expanded for energy and/or production.

- Feedstock and product storage:
  - Liquid ammonia storage tank farm
    - Green ammonia will be stored as anhydrous ammonia.
  - Hydrogen Storage Tank
    - Hydrogen is stored in vertical or horizontal storage bullets. Compressed hydrogen can be storage as a gas or in liquid form.

- Gantry and loading bay:
  - Three gantries will be included to fill ISO containers which can be trucked and directly shipped.

1. Overview of the Project

Key Considerations

- Depending on the final location, the Project Area may fall within **Critical Biodiversity Areas (CBA)** and **Ecological Support Areas (ESA).** The CBA and ESA include both terrestrial and aquatic themes. among other themes.

- The Project Area falls within the **Air Quality Highveld Priority Area.**
- The project falls within the **Gas Pipeline Corridor-Phase 8: Rompco Pipeline Corridor**

2. Permitting Processes

Authorisations Required

- **Environmental Authorisation:**
  - Listing Notice 2 Activities are associated with the Hendrina Green Hydrogen and Ammonia Electrolyser Facility
  - Scoping and Environmental Impact Assessment (S&EIA) Process will be required.
  - MDARDLEA – Competent Authority

- **Atmospheric Emissions Licence (AEL):**
  - An AEL may be required:
    - Category 7: Inorganic Chemicals Industry, Subcategory 7.1: Production and or use in manufacturing of ammonia, fluorine, fluorine compounds, chlorine and hydrogen cyanide

- **Water Use Licence**
  - A Water Use Licence / General Authorisation will be required

2. Permitting Processes

Listed Activities – Listing Notice 1

LISTED ACTIVITY	DESCRIPTION OF PROJECT ACTIVITY
Activity 12 (ii), (a) and (c): *The development of—* *(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—* *(a) within a watercourse; or* *(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse*	There is the potential that the access road to the Electrolyser Facility may transverse a watercourse (or drainage line).
Activity 19 *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse*	There is the potential that the access road to the Electrolyser Facility may transverse a watercourse (or drainage line).
Activity 27 *The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for:* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan*	The construction of the Electrolyser Facility will require the clearance of indigenous vegetation of approximately 25 ha.

2. Permitting Processes

Listed Activities – Listing Notice 2

LISTED ACTIVITY	DESCRIPTION OF PROJECT ACTIVITY
Activity 4: *The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.*	It is understood that there is potential for the Electrolyser to store more than 500 cubic meters of dangerous goods.
Activity 6: *The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding:* *(i) activities which are identified and included in Listing Notice 1 of 2014;* *(ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies;* *(iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less; or* *(iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.*	It is understood that the Electrolyser may require an Air Emissions License (AEL) in terms of Sub-category 7.1.
Activity 15: *The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for—* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan.*	In the event that the Electrolyser Facility requires the clearance of approximately **25 hectares or more** of indigenous vegetation – this activity will be applicable.

2. Permitting Processes

* Additional Listing Notice 3 Activities may be identified and included in the application forms

Listed Activities – Listing Notice 3

LISTED ACTIVITY	DESCRIPTION OF PROJECT ACTIVITY
Activity 4: *The development of a road wider than 4 metres with a reserve less than 13,5 metres.* *(i) Mpumalanga-* *(ii) areas outside urban areas* *(bb) National Protected Area Expansion Strategy Focus areas;* *(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority*	An access road (of approximately 4m in width) will be required.
Activity 12 (i) (i) and (ii): *The clearance of an area of 300 square metres or more of indigenous vegetation. Except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* *Mpumalanga* *ii. Within critical biodiversity areas identified in bioregional plans;*	The Electrolyser Facility may traverse Critical Biodiversity Areas – depending on the final location. The construction of the Facility will require the clearance of more than 300m^2 of indigenous vegetation.
Activity 14 (ii) (a) and (c) (i) (i) (bb) and (ff): *The development of—* *(ii) infrastructure or structures with a physical footprint of 10 square metres or more;* *where such development occurs—* *(a) within a watercourse; or* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;.* *Mpumalanga* *i. Outside urban areas:* *(bb) National Protected Area Expansion Strategy Focus areas;* *(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.*	The Electrolyser Facility may traverse Critical Biodiversity Areas – depending on the final location. There is the potential that the access road will transverse a watercourse (or drainage line).

2. Permitting Processes

DEA Screening Tool Identified Sensitivities

	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X
Palaeontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

2. Permitting Processes

DEA Screening Tool Specialist Assessments

Specialist Study	Comments
Agricultural	High and Medium Land capability
Landscape / Visual	
Archaeological and Cultural heritage	Low sensitivity
Palaeontological	Medium and Very High palaeontology sensitivity
Terrestrial Biodiversity	Very high Critical biodiversity area 2 , Protected Areas Expansion Strategy and Vulnerable ecosystem
Aquatic Biodiversity	Freshwater ecosystem priority area quaternary catchments
Avian Impact	3 possible sensitive species
Hydrology	
Geotechnical	
Socio-Economic	
Plant Species	4 possible sensitive species
Animal Species	Sensitive Avifauna and Mammal species

2. Permitting Processes

Specialist Studies Commissioned

SPECIALIST ASSESSMENT	COMMENT
Soils and Agricultural Potential Assessment	A soils and agricultural survey will be undertaken.
Archaeological and Cultural Heritage Impact Assessment	The projects could potentially negatively impact on heritage and archaeological resources. An Archaeological and Heritage Impact Assessment will be undertaken.
Palaeontology Impact Assessment	The projects could potentially negatively impact on Palaeontological resources. A Palaeontological Impact Assessment will be undertaken.
Visual Impact Assessment	The projects could potentially negatively impact sensitive visual receptors. A Visual Impact Assessment will therefore be undertaken.
Terrestrial Biodiversity Impact Assessment	The projects could negatively affect CBA and NPAES Focus Areas. A Terrestrial Biodiversity Assessment will be undertaken. This assessment will include both fauna and flora aspects.
Freshwater Impact Assessment	The projects could potentially negatively impact water resources. A Freshwater Impact Assessment will therefore be undertaken.
Avifauna Impact Assessment	Due to the potential impacts on birds as a result of the projects, an Avifauna Assessment will be undertaken.
Social Impact Assessment	A detailed social assessment will be prepared. The social statement will be based on a desktop review and telephonic interviews with key stakeholders.
Noise Impact Assessment	Due to potential impacts on sensitive receptors with regards to noise generated from the wind turbines, a Noise Assessment will be undertaken.
Geotechnical Assessment	A desktop geotechnical assessment will be undertaken.
Traffic Assessment	A desktop traffic assessment will be undertaken

2. Permitting Processes

Specialist Studies Commissioned

SPECIALIST ASSESSMENT	COMMENT
Air Quality	An air quality impact assessment will be undertaken as the project will require an AEL
Hydrology and Geohydrology	A Hydrology and Geohydrology assessment will be undertaken

2. Permitting Processes

Specialist Studies NOT Commissioned

SPECIALIST ASSESSMENT	COMMENT
Geotechnical	A detailed Geotechnical Assessment will not be undertaken as part of the EIAr Process as this will be undertaken during the design phase.
RFI	A Radio Frequency Interference (RFI) Study will not be undertaken. The South African Weather Service (SAWS) and relevant telecommunications stakeholders will be engaged with as part of the Public Participation Process.
Civil Aviation	The Civil Aviation Authority will be included on the project stakeholder database. They will be informed of the proposed Project, and comment will be sought. An Application for the Approval of Obstacles will also be submitted to SACAA once preferred bidder status is obtained.
Defence	The Department of Defence will be included on the project stakeholder database. They will be informed of the proposed Project, and comment will be sought.

3. Public Participation Process

Public Participation Plan

- A Consolidated Public Participation Process is proposed for all applications
- Site notices:
  - English, Afrikaans and Zulu
  - Onsite and in the surrounding areas
- Compilation and management of I&AP Database
- Written notification:
  - Owners and occupiers on or adjacent to the proposed project site
  - Municipality Ward Councillor
  - District Municipality
  - Relevant State Departments
- Advertisement (English, Afrikaans and Zulu in local newspaper)
- Draft Report Review for 30 days
  - WSP on request
  - Online on the WSP website
  - WSP will confirm with local Public Libraries as to whether they are open and able to accept documents for public review
- No provision has been made for face-to-face public or focus group meetings, virtual meetings will be held as required.

4. Timeframes

Timeframes

- Authority Timeframes
  - Authority decision making timeframe is 107 days

- Key Milestones:
  - Submission of Application Forms – November 2022
  - Draft Scoping Report Public Review – November – December 2022
  - Submission of Final Scoping Report – December 2022
  - Draft EIA Report Public Review – March – April 2023
  - Submission of Final EIA Report - May 2023

5. Questions and Discussion

6. Way forward