OKOMBAHE SERVICE STATION

BACKGROUND INFORMATION DOCUMENT (BID) FOR A PROPOSED CONSTRUCTION AND OPERATION OF OKOMBAHE SERVICE STATION IN OKOMBAHE, ERONGO REGION, NAMIBIA

21 NOVEMBER 2025

This Background Information Document (BID) is prepared by:

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On behalf of:

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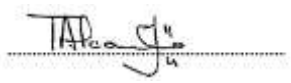
WINDHOEK

CONSTRUCTION AND OPERATION OF A FUEL RETAIL FACILITY		
BACKGROUND INFORMATION DOCUMENT (BID) COVER SHEET	**Total # of Pages**	34

Document Title: Background Information Document			**OKOMBAHE SERVICE STATION** **P. O. Box 25888** **Windhoek**
Approval	 **Twalinohamba Akawa** 18 November 2025	Lead Environmental Assessment Practitioner	**Envirodu Consulting & Training Solutions cc** **P. O. Box 4120** **Swakopmund** Website: www.ecutsnamibia.com

INDEPENDENCE

I **TWALINOHAMBA AKAWA** hereby declare that I have no interest in **OKOMBAHE SERVICE STATION**, financial, personal, or other interests in the proposed activity, application, or appeal in respect of which I was appointed other than fair remuneration for the work performed. Therefore, there were no circumstances that compromise the objectivity of this assessment and recommendations, thereof.

Document First release for internal review	7 November 2025	Mr. Ernest Stuurman _____
Feedback and Review date	11 November 2025	Mr. Twalinohamba Akawa
Last review date	21 November 2025	Approval

1. EXECUTIVE SUMMARY

1.1. Introduction and Project Proponent

Okombahe Service Station will be strategically located along the C36 Road, which connects Omaruru town and Uis settlement. In the near future, this route connecting Uis to Omaruru and eventually to the C33 and B2 Roads will become an extremely important tourism route connecting the central northwestern to the main road network. This is most likely to happen especially when upgrading of the C35 Road (connecting Uis to Henties Bay) into tarred road is completed in 2031.

The proposed Okombahe Service Station will be strategically located at the intersection of routes leading to Omaruru, Uis, Okombahe and Omatjete.

1.2. Baseline Activities and Legal Compliance

The Proponent has undertaken critical preliminary steps to ensure the feasibility and legal groundwork for the Project:

- ***Ministry of Industries, Mines and Energy (MIME):*** *Letter of Intent secured.*
- ***Traditional Authorities:*** *Consent Letters obtained.*
- ***Erongo Communal Land Board:*** *Application initiated.*

1.3. Anticipated Impacts and Benefits

1.3.1.1. Positive Socio-Economic Impacts

The establishment of the Okombahe Service Station is expected to yield significant benefits for the local area:

- ***Job Creation:*** *Creation of employment opportunities for the local community.*
- ***Tourism Promotion:*** *Support and enhancement of the local and regional tourism industry by providing necessary infrastructure support.*
- ***Essential Services:*** *Provision of crucial fuel services to residents and travelers.*

1.3.1.2. Potential Negative Environmental Impacts

While socio-economic benefits are clear, the construction and operation of Okombahe Service Station will carry potential negative environmental impacts that need to be assessed and managed through the EIA process.

1.4. Call for Public Engagement

The Proponent is committed to an open and inclusive Environmental Impact Assessment process.

- ***Objective:*** *To solicit inputs, comments, and concerns from* ***Interested and Affected Parties (IAPs)*** *and stakeholders regarding the potential impact (both positive and negative) of the proposed construction and operation of the Okombahe Service Station.*
- ***Action:*** *IAPs and stakeholders are invited to participate in the public engagement process to ensure all relevant issues are identified and addressed in the Environmental Assessment Report.*

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PROJECT SUMMARY AND TIMELINES

PROJECT SHORT TITLE: PROPOSED CONSTRUCTION AND OPERATION OF A FUEL RETAIL OUTLET AT OKOMBAHE, ERONGO REGION, NAMIBIA

Phase I:

- *Receipt of Letter of Intent to start a service station:* ***8 October 2025***
- *Release of BID to registered IAPs and stakeholders:* ***18 November 2025.***
- *Notices in Local Newspapers:*
    - *New Era newspaper:* ***21 November 2025*** and ***28 November 2025.***
    - *Confidente newspaper:* ***21 November 2025*** and ***28 November 2025***

Phase II:

- *Placement of notices in Okombahe and at various public places:* ***21-28 November 2025***
- *Last day for comments on the BID: 02 December 2025*
- *Availability of ESIA and ESMP reports to IAPs for review: 3 December 2025.*
- *Public Meeting: 5 December 2025*
- *Project registration on the EIA portal: 12 December 2025.*

Phase III:

- *Last day for comments on ESIA and ESMP reports by IAPs: 17 December 2025*
- *Feedback from IAPs and finalization of ESIA and ESMP Reports: 18 December 2025*
- *Launch application with MEFT and upload all outstanding documents on the EIA portal: 19 December 2025.*

	October	**November**	**December**
PHASE 1			
PHASE 2			
PHASE 3			

2. INTRODUCTION AND BACKGROUND

The Proponent, Okombahe Service Station, intends to construct and operate a Fuel Retail Outlet on communal land in Okombahe. Okombahe Service Station takes pride in providing basic services such as refuelling, food and lodging to locals and tourists in Okombahe. The proponent seeks to expand its services to include fuel retail within the Okombahe sorrounding due to rising tourism and motorists in the area.

2.1. Need and desirability

The Okombahe Service Station is not only positioned to serve current needs but is also strategically aligned with the future development of Namibia's national road network.

- ***Current Strategic Positioning***

The Service Station is located along the **C36 Road**, which currently serves as a vital secondary link connecting the town of **Omaruru** and the mining settlement of **Uis**.

- ***Future Network Significance (The 2028 Catalyst)***

The value of this location is projected to increase substantially, transforming the C36 into a high-priority corridor:

- **Elevated National Importance:** The C36 route, which connects Uis to Omaruru and subsequently links to the **C33** and **B2 Roads**, is forecasted to become an **extremely important route** for connecting the central north-western regions to the main national road network.
- **Catalyst for Change:** This significant increase in traffic and route importance is most likely to be triggered by the projected completion of the upgrading and tarring of the **C35 Road**, which is anticipated in **2031**.
- **Projected Outcome:** The completion of the C35 upgrade will funnel more long-distance and heavier vehicle traffic onto this central north-western axis, making the C36 and the Okombahe Service Station a necessary and highly valuable stopping point on the journey.

By establishing the Okombahe Service Station now, the Proponent is securing a prime commercial asset ahead of the anticipated infrastructural upgrades that will dramatically increase traffic flow and commercial activity on the C36 route.

2.2. Location and accessibility

The project location could be accessed via the C36 Road. The main geographical feature in the area is the T-junction where the C36 intersects the D3712 and the D2306 Roads. When approaching from Uis settlement from the site is on the left. The total area allocated is 5 ha and this will be divided into several facilities as per requirements fo a standard service station.

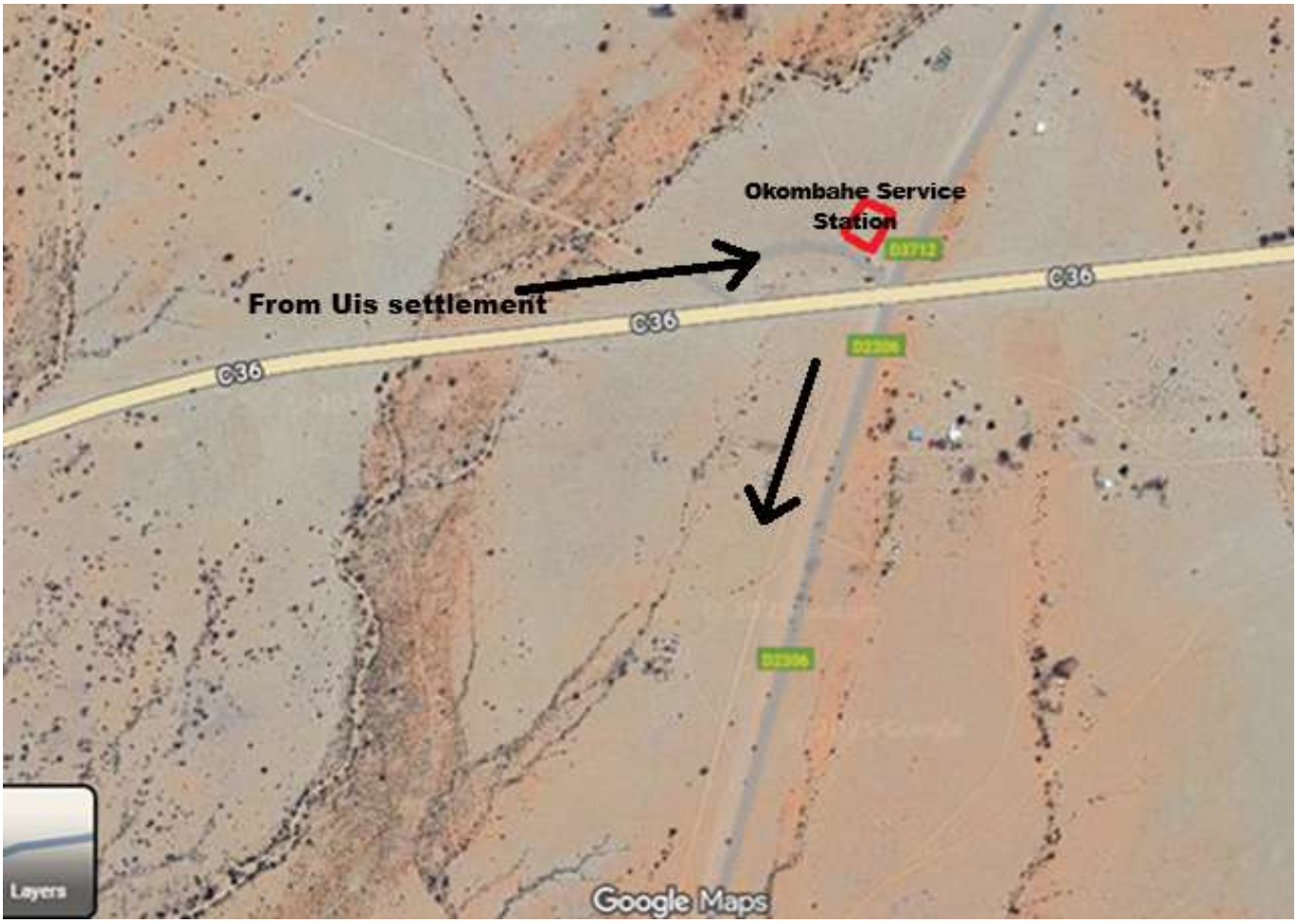

Figure 1: Location of the Proposed Okombahe Service Station.

3. LEGISLATIVE FRAMEWORK AND INTITUTIONAL ARRANGEMENTS

3.1. Legislative framework

The environmental impact assessment (EIA) procedure for this project will be conducted in compliance with Namibia's environmental legislation, specifically the Environmental Management

Act (Act No. 7 of 2007), and its 2012 regulations. The Act and its regulations guide the Environmental Impact Assessment (EIA) process.

The EIA process will be inclusive and solicit inputs from community that may be impacted by the project. Therefore, the Proponent has prepared this BID to ensure that public opinions, especially those of interested and affected parties (IAPs), are taken into account during the EIA process to ensure maximum sustainable environmental management of the proposed development.

3.2. Public consultation

The EIA process necessitates the participation of IAPs by the proposed development. Because of this requirement, the proponent has placed notices in local newspapers. Furthermore, notices will be distributed to line ministries, the general public, and IAPs. Notices will also be placed at the site and in the surrounding area to solicit input regarding the proposed development of the Okombahe Service Station.

3.3. Institutional arrangements

The Environmental Impact Assessment (EIA) process for the proposed Okombahe Service Station is regulated by the following institutional arrangement:

- ***Primary Legal Instrument***

The entire environmental assessment process is governed by the **Environmental Management Act (Act No. 7) of 2007 and its Environmental Impact Assessment Regulations of 2012.**

- ***Primary Competent Authority***

The overall oversight and regulatory mandate for environmental laws in Namibia rests with the **Ministry of Environment, Forestry and Tourism (MEFT).**

  - **Role:** MEFT, through the Environmental Commissioner, is the designated **Competent Authority** responsible for administering the EMA. This includes reviewing the Environmental Assessment Report and ultimately issuing or refusing the **Environmental Clearance Certificate (ECC)** for the proposed Project.

- ***Concerned Stakeholders and Secondary Competent Authorities***

Depending on the specific nature and location of the proposed project (a fuel retail facility on communal land), other **Government of the Republic of Namibia (GRN) entities** play a critical role either as secondary regulating bodies or concerned stakeholders:

Institution	**Role and Relevance to the Project**
Ministry of Industries, Mines and Energy (MIME)	**Primary licensing authority** for the construction and operation of the fuel retail facility. MME consent is mandatory prior to the ECC application.
Erongo Regional Council	Provides **permission and consent** for the use of communal land and has a vested interest in local development, infrastructure, and socio-economic planning.
Traditional Authorities	Provides **consent** for the utilization of communal land within their traditional jurisdiction, a prerequisite for the MME license and the ECC application.
Ministry of Health and Social Services	Concerned stakeholder regarding potential public health impacts (e.g., fuel storage and air quality).
Namibia Water Corporation (NamWater)	Concerned stakeholder regarding water supply and wastewater disposal.

The above institutional arrangement ensures that the Project is assessed not only for environmental compliance but also for technical and socio-economic feasibility across all relevant sectors of government.

4. DESCRIPTION OF APPROACH AND METDOLOGIES

The EIA process and procedures are guided by the Environmental Management Act (No. 7 of 2007) and EIA Regulations of 2012 as illustrated in ***Figure 2***:

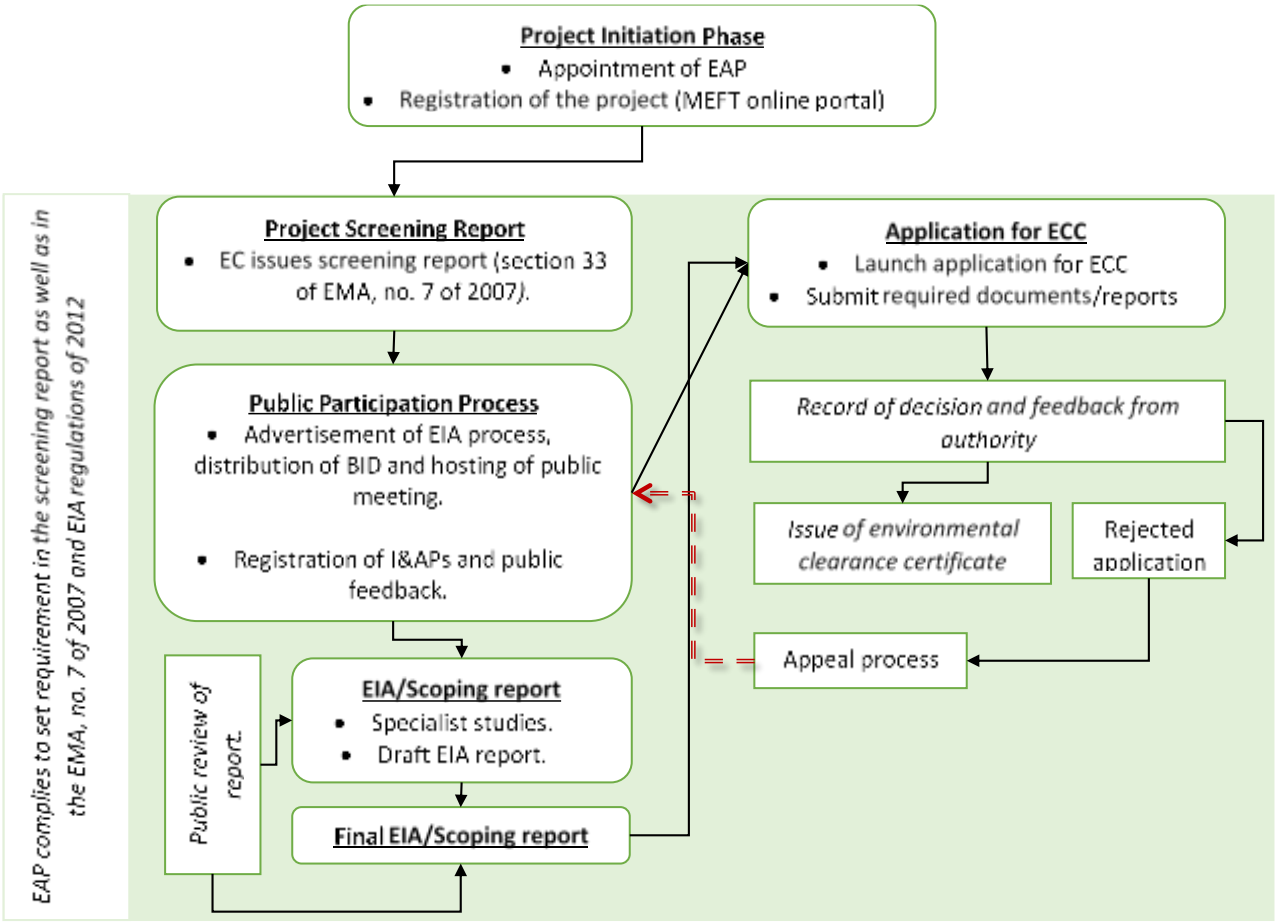

Figure 2: EIA process for the proposed fuel retail facility in Spitzkoppe.

5. SOCIO-ECONOMIC SETTING AND GOVERNANCE SYSTEM

5.1. Socio-economic setting

Okombahe is a settlement located in the **Dâures Constituency** of the Erongo Region, serving as the traditional and cultural capital of the ǂNûkhoen (Damara) people.

The local economy is centered primarily on **extensive communal livestock farming** and the provision of basic government and social services (including schools and the Constituency office).

- **Agriculture**

The region, like much of Namibia's communal areas, faces challenges from recurring **drought conditions**, which have impacted agricultural productivity and led to low population density.

With regard to contributing to drought challenges, the construction of the Okombahe Service Station will provide a much-needed **economic catalyst**, supporting local employment and supplying essential fuel services to a community that otherwise relies on the distant towns of Omaruru and Usakos. Furthermore, the station is strategically positioned to capture **regional tourism traffic** that traverses the C36 and other district roads in the Dâures Constituency.

- **Tourism**

Tourism as a climate resilient solution allows rural farmers to supplement their agricultural activities by participating in ecotourism activities such as cultural village tours, gastronomy, and entertainment. More importantly, because the value of Namibia's landscapes and cultural diversity that does not depreciate, tourism is one of the few sectors in Namibia that can be sustainable.

Due to poor road infrastructure and other accessibility factors, Okombahe is one of Namibia's least explored places, despite its unique scenery and cultural diversity. Omaruru, the nearest town, is approximately 75 km from Okombahe. The road to Okombahe from Omaruru is a gravel road, and there is no fuel retail facilities to cater for the growing number of tourists and motorists. As a result, the proponent plans to construct a fuel retail facility to provide service to the local communities and boost the tourism sector, which is a significant economic activity for the local people.

5.2. Governance and administrative system

The Erongo Region, where Okombahe is located, is governed by a decentralized system representing the central government:

- **Political Head:** The **Governor of the Erongo Region**, appointed by the President of Namibia, serves as the political head and the link between the central government and the Regional Council.
- **Administrative Body:** The **Erongo Regional Council (ERC)** is the local government body established under the Regional Councils Act. Its primary mandate is to plan, coordinate, and implement socio-economic development activities, administer settlement areas (like Okombahe), and manage communal lands.
- **Constituency Level:** Okombahe falls within the **Dâures Constituency**. The Constituency Councillor is an elected representative on the Regional Council and is directly responsible for liaising with the community on service delivery and development. The **Dâures Constituency Office** is located in Okombahe.
- **Administration:** Okombahe is officially designated as a **Settlement** under the Ministry of Urban and Rural Development (MURD).

- Settlements are typically managed by the **Erongo Regional Council** through a dedicated **Settlement Office** (located in Okombahe). The Settlement Office is responsible for local administration, land allocation procedures on behalf of the Regional Council, and the provision of basic services.

The Damara Traditional Authority Structure: *Okombahe is historically and culturally significant as it is regarded as the traditional capital of the ǂNûkhoen (Damara) people. Traditional authorities (TAs) run parallel to the state system and are recognized under the Traditional Authorities Act:*

- **Overall Authority:** The Damara Nation is led by a **King (Gaob)**, who is the paramount traditional leader.
- **Local Governance (Okombahe):** The specific Traditional Authority with jurisdiction over Okombahe is the relevant **Damara Clan Traditional Authority** (often the **Dâuredaman** or another recognized clan in the area). This local TA, headed by a recognized Chief or Senior Traditional Councillor, manages and resolves local conflicts, preserves cultural identity, and crucially, has legal authority (under the Communal Land Reform Act) to **allocate communal land** and adjudicate minor disputes using customary law.

Project Relevance: For the Okombahe Service Station Project, both spheres of governance must be engaged:

- **Customary Requirement:** The relevant **Traditional Authority** must provide consent for the land usage in line with customary law, which is often a prerequisite for the Ministerial licenses and the Environmental Clearance Certificate.
- **Statutory Requirement:** The **Erongo Regional Council** must provide consent for the lease of the communal land.

6. THE RECEIVING ENVIRONMENT AND ENVIRONMENTAL SENSITIVITY

The environmental baseline conditions in the focus area are summarized in terms of a physical and biological environmental synopsis. This will be covered in depth in the Environmental and Social Impact (ESIA) Report.

6.1. Physical environmental characteristics

The proposed Okombahe Service Station site is situated within a sensitive arid environment. Understanding the local climate, topography, geology, and water resources is fundamental to the Environmental Assessment.

6.1.1. Climate and Air Quality

- **Classification:** The area features a **Hot Desert Climate (BWh)** according to the Köppen classification, transitioning towards semi-arid conditions further inland.
- **Temperature:** Summers are warm to hot, with average maximum temperatures ranging between 32°C to 34°C during December and January. Winters are mild, with average minimum temperatures around 8°C to 10°C in July.
- **Precipitation:** The area is arid, receiving low and erratic rainfall, typically between **150 mm and 200 mm** annually. Rain occurs mainly during the summer months (December to April).
- **Humidity:** Relative humidity is low, typically ranging from **20% to 30%**.
- **Air Quality:** The baseline air quality is generally excellent, characterized by clean, unpolluted desert air. The primary existing air quality concern is dust generation,

particularly from the gravel C36 and D-roads, which will be a factor during the construction phase.

6.1.2. Topography and Geology

- **Topography:** The site is located in the Central-Western Plains, characterized by relatively flat to gently undulating terrain. The landscape is dominated by scattered mountain outcrops and inselbergs typical of the region, though the specific service station site has been selected on flatter land for ease of construction.
- **Geology:** The area forms part of the **Damara Orogenic Belt**, which consists of ancient metamorphic and granitic rocks. The local landscape is dominated by various geological features, with soils often being deposits of **sand and surface limestone**.
- **Soils:** Soils in the area are shallow, gravelly, and highly susceptible to **wind and water erosion**, especially when the protective vegetation layer is removed.

6.1.3. Hydrology and Water Resources

- **Surface Water:** The primary hydrological feature is the **Omaruru River**, an ephemeral (non-perennial) river on which the Okombahe settlement is situated (approximately 8 km away). Surface water flow is rare, occurring only after significant rainfall.
- **Groundwater:** The region is highly dependent on groundwater. The Okombahe Water Supply Scheme taps into the subsurface water resources of the Omaruru River via boreholes. Groundwater resources are precious and vulnerable, making protection from pollution a critical concern.
- **Water Source:** The Okombahe area is a **water-stressed environment**, meaning the service station's water demands must be carefully managed to avoid impacting community supplies.

6.2. Biological environment

6.2.1. Flora

The Okombahe area is situated in a transitional ecological zone between the extremely arid Namib Desert and the slightly wetter **Thornbush Savanna** (or Karstveld). The flora is sparse, highly specialized, and adapted to severe water scarcity, low and erratic rainfall and sandy, gravelly soils.

Key Characteristics

- **Vegetation Type:** Classified as **Desert or Succulent Steppe** vegetation, transitioning into the **Thornbush Savanna**.
- **Adaptations:** Plant life consists mainly of **hardy shrubs, perennial grasses, and drought-resistant trees** that are slow-growing and have deep root systems to access groundwater, particularly along the ephemeral river courses.
- **Dominant Species:** Common tree and large shrub species include:
    - **Acacia species** (e.g., *Acacia erioloba* – Camel Thorn, and *Acacia tortilis* – Umbrella Thorn).
    - **Shepherd's tree** (*Boscia albitrunca*).
    - **Kudu bush** (*Terminalia sericea*).
- **Riverine Habitat:** Along the course of the ephemeral **Omaruru River**, a more dense and diverse *riverine woodland* exists. This habitat is critical, supporting larger trees and providing localized biodiversity, but it is highly dependent on subsurface water flow.
- **Sensitivity:** The vegetation cover is fragile. Removal of the plant cover (due to construction or vehicle movement) makes the shallow, arid soils highly susceptible to **wind and water erosion**.

6.2.2. Fauna

The fauna in the Okombahe area reflects the challenging environment of the central-western plains of Namibia. While the Okombahe Service Station site itself is not a sensitive wildlife hotspot, the wider area supports endemic species and desert-adapted game.

Large Mammals (Plains Game)

Large mammals in the region are often nomadic, following seasonal grazing and water sources, particularly the ephemeral **Omaruru River** subsurface flow.

- **Antelope:** The most common large herbivores include **Gemsbok (Oryx)**, **Springbok**, and **Greater Kudu**. These species are highly adapted to arid conditions and can survive long periods without open water.
- **Zebra: Hartmann's Mountain Zebra** (*Equus zebra hartmannae*) is endemic to Namibia and often occurs in the nearby mountainous or rocky terrain of the Escarpment.

- **Other Species:** Visitors may occasionally sight **Giraffe** and smaller antelope like the **Steenbok** and **Damara Dik-Dik**.

Carnivores and Small Mammals

The predator population is generally low-density, secretive, and nocturnal, primarily focused on scavenging or small prey.

- **Common Carnivores: Black-backed Jackal** is ubiquitous across the landscape. The area may also host **Bat-eared Fox** and various species of **mongoose**.
- **Larger Predators:** Larger predators such as **Leopard** and **Cheetah** roam the wider Erongo Region but are highly elusive. Their presence is a conservation concern, but direct interaction with the site is extremely rare.
- **Other Small Mammals:** The rocky outcrops and plains support species like **Rock Hyrax (Dassie)**, various **rodents**, and **springhare**.

Avifauna (Birds)

The region is known for its specialized arid-adapted birds, making the general area of interest to birdwatchers. Endemic and near-endemic species are often associated with the rocky terrain and riverbeds.

- **Key Birds:** Common sightings include **Yellow-billed Hornbill**, **Kori Bustard**, **Pale Chanting Goshawk**, and various **larks** and **francolins**.
- **Near-Endemics:** The nearby Erongo Mountains are known for species such as the **Damara Rockrunner** (or Damara Rockjumper) and **Monteiro's Hornbill**.

Conservation Status

While the site itself is not a protected area, the wider region forms part of important communal land wildlife conservancies which contribute to the movement of desert-adapted species, including the occasional **Black Rhino** or **Desert-adapted Elephant**, though these are rare near the Okombahe settlement itself.

7. TECHNICAL DETAILS AND CONCEPT DESIGN

7.1. Location

Okombahe Service Station will be located on the left side of the C36 Road when approaching from Uis.

Okombahe Service Station will be located near Okombahe settlement. The site where the allocated is located falls under a Traditional Authority and is governed by Okombahe Headman.

***Figure 3*:** Proposed project location.

7.2. Concept design

During the design of the project concept, it was advised that the Okombahe Service Station should be environmental sensitive:

Maximum Solar Integration (The Core Strategy)

The primary energy source for the entire facility will be photovoltaic (PV) solar generation.

- **The Solar Canopy:** The main forecourt canopy will be significantly oversized to maximize solar surface area. It will be constructed using an array of high-efficiency **monocrystalline solar panels**. This canopy serves a dual purpose: generating power and providing extensive shade to reduce heat load on the forecourt and vehicles.
- **Net Metering/Battery Storage:** The system will be connected to a robust **lithium-ion battery bank** for energy storage. This allows the station to operate fully off-grid at night and during overcast periods, ensuring reliable 24/7 service without relying heavily on a diesel generator.
- **Building Integration:** Additional solar panels can be installed on the flat roof of the convenience store (C-Store) and support buildings to supplement the power from the main canopy.

Energy Efficiency & Consumption Reduction

To ensure the solar system is sufficient, consumption must be minimized:

- **Lighting:** Exclusive use of **high-efficiency LED lighting** (low-wattage) for the forecourt, building interior, and security perimeter. Lights will be managed by **photocell sensors** (to activate at dusk) and **motion sensors** (in non-public areas) to save power.
- **HVAC:** Use of modern, **high-efficiency air conditioning units** (Inverter Technology) for the C-Store and offices.
- **Insulation:** The service station building will be constructed with thick, high-quality wall and roof insulation to dramatically reduce the need for cooling during the hot summer months.

Water Conservation (Crucial for Okombahe)

Given the water-stressed environment, water use must be minimized:

- **Rainwater Harvesting:** The large solar canopy and building roofs will be designed to channel all captured rainwater into dedicated, sealed storage tanks for non-potable uses (e.g., cleaning, irrigation).
- **Water Fixtures:** Installation of **low-flow fixtures** and **dual-flush toilets** in all ablution facilities.
- **Landscaping:** Exclusive use of **xeriscaping** (drought-resistant plants, like local succulents and gravel) to eliminate the need for irrigation.

Waste and Pollution Control

- **Hazardous Waste:** Adherence to the highest standards (SANS 10089) for **double-walled storage tanks** and secondary contained piping to prevent fuel leaks.
- **Oil-Water Separation:** Installation of a well-sized, functional **three-stage oil/water separator** to treat all forecourt run-off before release, protecting the precious local groundwater resources.

Given the strategic location on the C36 gravel road, the arid, rocky landscape of the Erongo Region, and the proximity to the Damara cultural heartland, the concept design for the Okombahe Service Station should blend **modern functionality** with **cultural sensitivity and environmental resilience**.

Here are three proposed designs; focusing on **aesthetics**, **sustainability**, and **functionality**:

7.21. Potential concept design themes

Concept 1: The Desert Oasis (Sustainable & Modern)

This concept prioritizes environmental responsibility and visibility, positioning the station as a welcome, high-tech stop in the arid environment.

Key Design Elements

- **Aesthetics:** Clean, minimalist lines with a low-profile structure that echoes the smooth, sweeping forms of the surrounding rocky outcrops.

- **Roof/Canopy:** A large, cantilevered canopy entirely covered in **solar panels** (photovoltaic cells). This generates power and provides maximum shade for the forecourt.
- **Materials:** Use of local, durable, light-colored materials such as **sand-colored plaster, exposed concrete, and natural stone cladding** (matching the local granite and gneiss) to blend into the landscape and reduce heat absorption.
- **Water Management:** Integrated rainwater harvesting from the large canopy and a highly efficient greywater recycling system to minimize demand on local groundwater resources.
- **Branding:** The name "Okombahe Service Station" is featured on a prominent, high-tech digital display board integrated into the canopy structure for visibility from the C36.

Concept 2: The Damara Heritage Hub (Cultural & Earthy)

This concept emphasizes the cultural significance of Okombahe as the traditional capital of the Damara people, making the station a unique destination, not just a fuel stop.

Key Design Elements

- **Aesthetics:** The structure incorporates **rounded edges and natural forms** reminiscent of traditional Damara communal buildings or kraals. The design uses natural stone walls (gabions) and exposed timber elements.
- **Forecourt:** The canopy is supported by **massive, rough-hewn timber or stone columns** that symbolize stability and natural permanence.
- **Materials:** Predominant use of **natural rock, dark wood, and earth-tone** plasters.
- **Ancillary Facilities:** A designated area for a **local craft market** or a **small cultural exhibit** showcasing Damara history and art, providing a direct economic benefit to the community.
- **Lighting:** Warm, soft lighting that highlights the stone textures at night, avoiding harsh glare that might detract from the dark skies (promoting astro-tourism).

Concept 3: The C36 Roadhouse (Durable & Functional)

This practical concept focuses on durability and catering specifically to long-haul travelers and the tough conditions of the C36 gravel road.

Key Design Elements

- **Aesthetics:** A robust, single-story, elongated structure built to withstand high winds and dust. The design is practical and emphasizes ease of access and maintenance.
- **Parking & Access:** Features a highly demarcated and durable gravel or concrete entrance/exit with **wide turning radii** specifically for large trucks and trailers.
- **Amenities:** Focus on heavy-duty facilities: large, clean public restrooms and showers; a dedicated, sheltered rest area for drivers; and a separate, high-volume **diesel truck-stop bay**.
- **Dust Mitigation:** The design incorporates windbreaks (low walls or vegetation barriers) and uses hard-surfaced paving (e.g., concrete or brick pavers) in high-traffic areas to minimize dust generation.
- **Security:** High-visibility lighting and secure fencing around the entire perimeter, essential for remote locations.

Proposed "Final Concept": ***Recommended Fusion***

A strong recommendation for the **Okombahe Service Station** would be:

- ***Fusion of Concept 1 (Solar Sustainability)*** and
- ***Concept 2 (Cultural Heritage)***.

This will create a visually distinctive, low-impact structure that both meets the modern needs of travelers and honors the traditional significance of the Okombahe community as illustrated in ***Figure 4***.

***Figure 4*:** Proposed Okombahe Service Station concept design.

7.3. Technical details

7.3.1. Project Overview and Scope

Aspect	Detail to Include
Location & Site Area	GPS coordinates: -21.286729S and 15.394792 Distance: Approximately 8n Km from Okombahe Physical address: N/A Total size of the plot: N/A
Phases	State clearly that the project involves **Planning and Design, Construction, Operation, and Decommissioning** phases.
Applicable Standards	Confirmation that the design adheres to the relevant Namibian legislation (Petroleum Products and Energy Act) and **SANS 10089 Parts 1-3** standards.

7.3.2. Fuel Storage and Dispensing Infrastructure

This section is the most critical for environmental risk assessment and licensing.

Aspect	**Detail to Include**
Underground Storage Tanks (USTs)	**Type:** This will be **Double-Walled Composite USTs** (Fibre-reinforced resin coated steel tanks) as required by SANS standards for maximum leak protection.
Capacity and Product	Specify the number of tanks: N/A.
Forecourt Area	**Canopy:** Description of the canopy and the forecourt area, including the overhead **canopy** will be provided in the ESIA report. **Dispensing Islands:** Number of islands and types of pumps will be provided in the ESIA report.
Truck Stop Facility	Given the location on the C36, details on a **dedicated truck diesel island** for heavy-duty vehicles will be provided, separate from the main forecourt.
Piping	The use of **double-skinned (or secondary contained)** piping for all product lines running from the USTs to the dispensers will be specified in the will be provided in the ESIA report.

7.3.3. Safety, Security, and Environmental Controls

Compliance with safety and environmental standards will be clearly detailed.

Aspect	Detail to Include
Contamination Control	**Impervious Surface:** Confirmation that all fuel handling areas (forecourt, tank fill points) will be sealed with **impervious concrete slabs** to prevent seepage.
Spill Containment	**Filler Point Containment:** Use of **spill catchment sumps/pits** at all tank filler points. **Oil/Water Separator:** Installation of a **three-stage oil/water separator (interceptor)** to treat all potentially contaminated storm water run-off and wash bay effluent before discharge.
Leak Detection	Installation of an **electronic leak detection system** for both the USTs and the piping, with continuous monitoring.
Fire Safety	**Fire Control:** Provision of appropriate **firefighting equipment** (e.g., foam systems, multiple fire extinguishers) and clearly marked **Emergency Shut-Off Valves (ESOV)** at dispensers and near the tanks.
Vapour Management	Use of **venting systems** to safely disperse fuel vapours as per SANS codes.

7.3.4. Ancillary Facilities and Utility Services

Details on non-fuel infrastructure that supports the station's operation and services the public.

Aspect	Detail to Include
Building Structure	Description of the main building: **Convenience Store (C-Store)**, administration office, and staff areas.
Ablution Facilities	Provision of separate, maintained **public and staff ablution facilities**.
Water Supply	Source of water (e.g., connection to NamWater bulk supply or a new dedicated borehole, if permitted).
Sewerage	Due to the location in a communal area, specify a **conservancy tank** or a modern, sealed **septic system** designed to prevent groundwater contamination.
Power Supply	Source of electricity (e.g., Erongo RED grid connection and/or a **back-up generator**).
Waste Management	Provision of designated, sealed areas for the temporary storage of hazardous and general waste prior to collection by the Regional Council or a licensed contractor.

8. STAKEHOLDER ENGAGEMENT

A detailed stakeholder engagement including newspaper adverts and minutes from a public meeting will be provided in the Environmental and Social Impact Report.

The public meeting will be at Okombahe on 6 December 2025 at 9h00.

9. PREDICTION OF ENVIRONMENTAL AND SOCIAL IMPACTS

9.1. Potential Environmental Impacts and Mitigation Measures

Focus of the Environmental and Social Impact Report will be mainly on negative impacts.

The proposed Okombahe Service Station project has potential negative impacts that will be managed through committed mitigation strategies to comply with the Environmental Management Act (EMA) and obtain the Environmental Clearance Certificate (ECC).

Construction Phase Impacts (Short-Term)

The primary impacts during the construction phase relate to site preparation and temporary activities.

Potential Impact	**Description & Concern**	**Mitigation Measures**
Dust and Air Quality	Clearing vegetation and excavation of gravelly soils can generate significant dust, impacting workers, nearby residents, and local air quality, particularly on windy days.	Implement frequent **dust suppression techniques** (e.g., light watering) on exposed surfaces and active construction areas. **Restrict vehicle speeds** on site and surrounding gravel roads.
Soil Erosion	Removal of existing sparse vegetation exposes the fragile, sandy soils to wind and water erosion, especially before the construction of impervious surfaces.	**Limit the construction footprint** to the approved site boundaries. Immediately **rehabilitate** disturbed areas with local grasses upon completion.
Noise Pollution	Noise from heavy machinery (excavators, cement mixers, compactors) will temporarily disturb the local environment, potentially impacting residents and wildlife.	Restrict high-noise activities to standard **daytime working hours** (e.g., 07:00 to 18:00). Ensure all machinery is fitted with **effective mufflers**.

Potential Impact	Description & Concern	Mitigation Measures
Waste Generation	Generation of general domestic waste (packaging) and construction waste (rubble, excess material).	Implement a **Construction Waste Management Plan** requiring sorting and storage in designated, sealed skips. Waste must be removed by a licensed contractor to an approved disposal facility.
Traffic and Safety	Increased traffic congestion, dust, and safety risks from construction vehicles accessing the C36 and D-roads.	Clearly **signpost** the construction entrance and site hazards. **Manage and coordinate** deliveries during off-peak hours where possible.

Operational Phase Impacts (Long-Term)

The long-term risks are primarily associated with hazardous substance handling, resource consumption, and the station's permanent presence.

Potential Impact	Description & Concern	Mitigation Measures
Groundwater Contamination	**High Risk.** Leakage from Underground Storage Tanks (USTs), piping, or forecourt spills can severely contaminate the shallow and vital local groundwater aquifer, impacting Okombahe's water supply.	Use **double-walled USTs and piping** with continuous **electronic leak detection systems**. Implement impervious concrete forecourt surfaces and install a functioning **three-stage oil/water separator (interceptor)**.
Water Scarcity	The service station's demand for water (ablution, cleaning) in a highly **water-stressed environment** can place	Implement the **Solar Sentinel Concept** water conservation measures: Install **low-flow fixtures** and **dual-flush toilets**.

Potential Impact	Description & Concern	Mitigation Measures
	pressure on the community's water sources.	Maximize **rainwater harvesting** from the canopy for non-potable use.
Soil Contamination	Routine spills of fuel or lubricants during dispensing, tank filling, or vehicle maintenance activities.	Ensure all fuel handling takes place over **impervious concrete containment areas**. Train staff in **immediate spill response procedures** and provide accessible spill kits.
Visual/Aesthetic Impact	The modern design and associated lighting may contrast sharply with the natural, remote desert landscape.	Use **earth-tone colors** and natural stone cladding to harmonize with the surroundings. Implement **low-glare, downward-facing lighting** to minimize light pollution and maintain dark skies.
Socio-Economic Impact	Increased pressure on local social infrastructure (e.g., housing, health) due to the influx of new workers.	Prioritize **local employment and procurement** where skills are available. Implement a **local skills training program** to enhance community benefits.

Decommissioning Phase Impacts

- **Risk:** Safe removal of fuel infrastructure (USTs, piping, separators) and potential soil contamination at the end of the project life.
- **Mitigation:** The operator must submit a comprehensive **Decommissioning Plan** to MEFT. This plan must include soil testing, tank removal, and bioremediation of any contaminated soil before the site is rehabilitated and handed back to the Regional Council.

10. ENVIRONMENTAL AND SOCIAL IMPACT EVALUATION

A detailed evaluation of environmental and social impacts will be provided in the Environmental and Social Impact Report.

11. PURPOSE OF BACKGROUND INFORMATION DOCUMENT (BID)

The purpose of this background information document (BID) is to provide background information to all stakeholders, particularly interested and affected parties (IAPs), on the planned construction of the Okombahe Service Station. The BID is prepared in accordance with the Environmental Management Act (Act No. 7 of 2007) and its 2012 Regulations.

The BID provides basic information about the planned development, as well as the regulatory framework for conducting an environmental impact assessment (EIA). In addition, the BID enables IAPs to register for the EIA process and provide preliminary comments or concerns about the planned development.

12. CONCLUSION AND WAY FORWARD

The BID provided a basis and way forward for the EIA process for this proposed development. This development will support tourism activities and could provide solutions to climate change and variability in this area which is negatively impacted by climate change.

The next stage in this EIA process is to hold a public meeting, prepare draft EIA Report and EMP for the proposed development.

Members of the public are invited to a public meeting to a public on 6 December 2025 at 9h00.

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APPENDICES

Registration form for IAPs.

Envirodu Consulting & Training Solutions cc	
Title:	
First name(s):	
Surname:	
Organization/Affiliation:	
Profession:	
Contact number:	
Email:	
I would like to attend the public meeting	
Comments:	Please list and explain issues of concerns here (attach extra sheet for more space. …… …… …… …… …… …… ……