ECC
ENVIRONMENTAL
COMPLIANCE CONSULTANCY






ECC-106-285-NTS-03-A

# NON-TECHNICAL SUMMARY FOR

## A PILOT SUSTAINABLE WATER SUPPLY PROJECT BY MEANS OF DESALINATION, POWERED BY SOLAR TO SUPPLEMENT WATER SUPPLY FOR WALVIS BAY

PREPARED FOR

TURNKEY WATER SOLUTIONS

innovent

MAY 2020

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Environmental Compliance Consultancy CC
CC/2013/11404

# NON-TECHNICAL SUMMARY

## PILOT SUSTAINABLE WATER SUPPLY PROJECT BY MEANS OF DESALINATION, POWERED BY SOLAR TO SUPPLEMENT WATER SUPPLY FOR WALVIS BAY ERONGO REGION, NAMIBIA

## 1 PURPOSE OF THIS DOCUMENT

The purpose of this Non-Technical Summary (NTS) is to provide Interested and Affected Parties (I&APs) a background to the proposed project and to invite I&APs to register as part of the Environmental and Social Impact Assessment (ESIA) process.

The proposed project is to develop a pilot sustainable water project by means of desalination, powered by solar to supplement water supply for Walvis Bay.

Through registering for the project, all I&APs will be kept informed throughout the ESIA process, and a platform for participation will be provided to submit comments/recommendations pertaining to the project.

This NTS includes the following information on:

- The proposed project and location;
- The necessity of the project, benefits or adverse impacts anticipated;
- The alternatives to the project have been considered and assessed;
- How the ESIA process works;
- The public participation process and how to become involved; and
- Next steps and the way forward.

## 2 DESCRIPTION OF PROPOSED PROJECT

Environmental Compliance Consultancy (ECC) has been engaged by the proponent a Joint Venture (JV) between Turnkey Water Solutions (Pty) Ltd and Innovent SAS to undertake an ESIA and an Environmental Management Plan (EMP) in terms of the Environmental Management Act, 2007 and

its regulations. An environmental clearance application will be submitted to the relevant competent authorities; the Ministry of Environment, Forestry and Tourism (MEFT).

### 2.1 LOCATION

The proposed project is located on a 4ha portion of Walvis Bay municipal land on Erf 4688 in the Erongo Region, Namibia. The preferred site is located on a semi-industrial location alongside the existing oil and gas jetty. The preferred site location is set out in figure 1.

### 2.2 WHY IS THE PROJECT NEEDED

Walvis Bay receives only 13.2 millimeters (0.52 in) average precipitation per year, making it one of the driest cities on earth. Water requirements of the town are currently 7 000 000 m3/year (20 000 m3/day). To meet the current water demand water is supplied to the Municipality from different sources, mainly boreholes.

In order to ensure water security and sustainability in the context of population and industry demand growth, as well as climate change new innovative solutions for supplementing water supply to Walvis Bay is required.

## 2.3 WHAT IS PROPOSED

This project aims to supply the Walvis Bay Municipality with an alternative clean and reliable water supply, through the use of innovative technology by means of a solar powered desalination plant. The project design components include:

- Producing approximately 3900 m3/day of clean water or 1,422,000 m3/year
- Installation of 5 beach wells (4 fully equipped and one spare)
- On shore beach wells fitted with infrastructure for an approximate pump capacity of 150m3/h;
- A plant and infrastructure lifespan of 20 years;
- Brine discharge into the ocean will vary between 294 - 340 m3/h during normal operations;
- Marine construction may not be required if the existing jetty can be used; and
- Power for the plant to be generated on site by a hybrid Photovoltaic (PV) solar plant connected to the grid.

This project will improve the water resilience of Walvis Bay, and allow for further development.

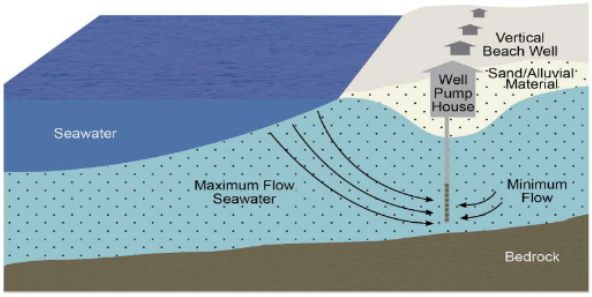


**Figure 2 - Beach Well Concept for Water Supply to Plant**

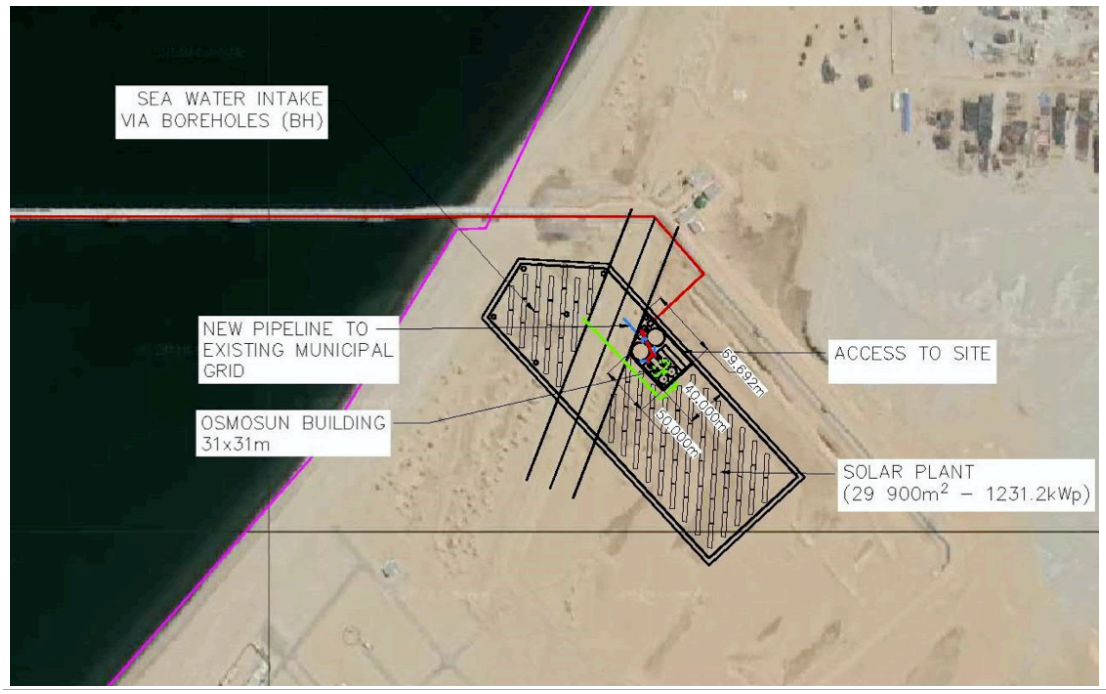


**Figure 1 - Proposed Site Layout**

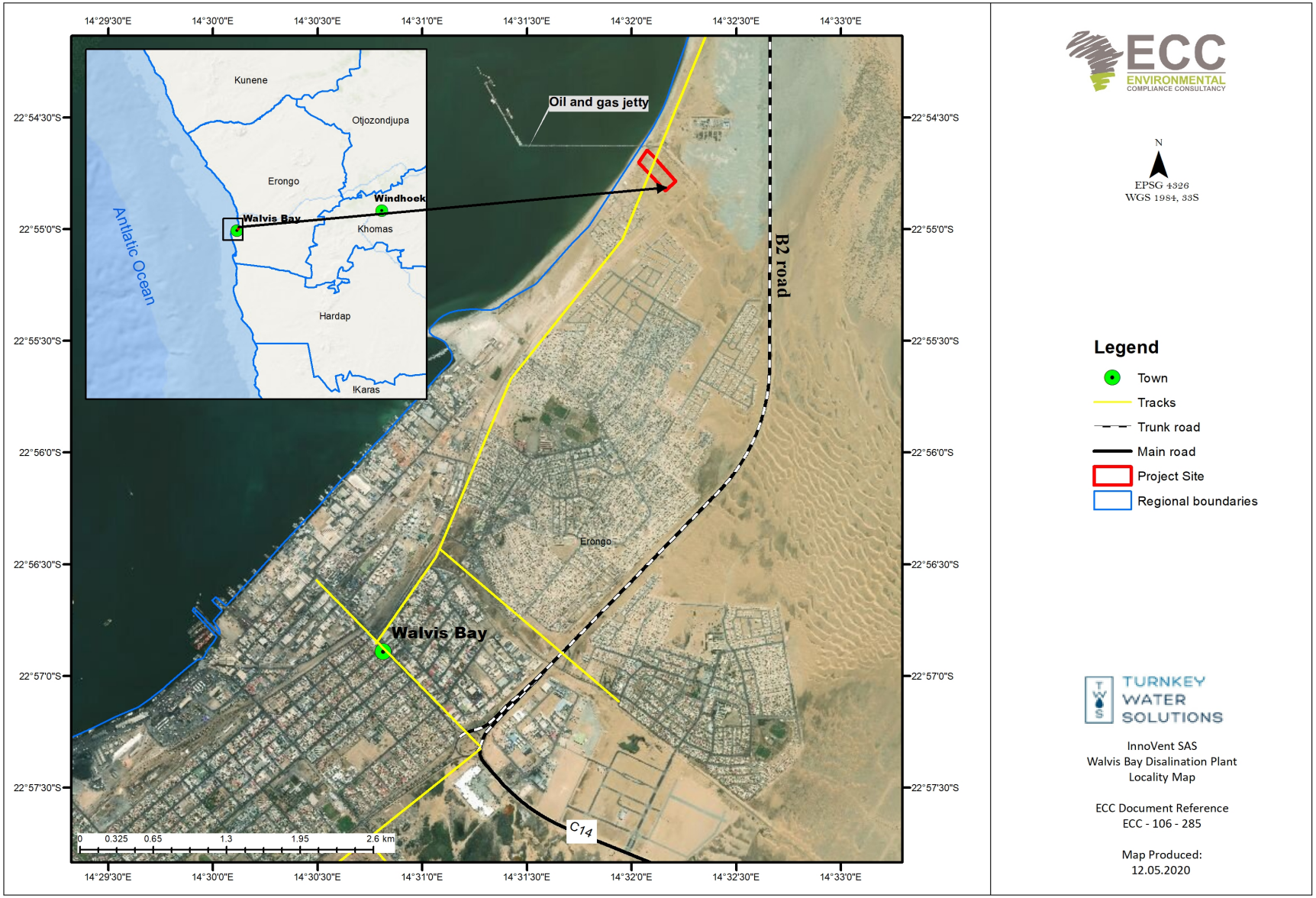


**FIGURE 3 – LOCATION MAP OF THE PROPOSED PROJECT**

## 2.4 POTENTIAL IMPACTS OF THE PROJECT

### 2.4.1 SOCIO-ECONOMIC

The potential social impacts are anticipated to be positive as the project will not only produce approximately 100 new jobs, but it will contribute to the sustainable water supply for Walvis Bay.

The proposed project location has been selected due to its access to existing infrastructure, the existing disturbed site, and importantly is not in proximity to sensitive receptors who may have visual amenity concerns with a new project.

Furthermore as the project is positively contributing to water security the potential flow on positive socio economic effects of the project could include the ability for further development of Walvis Bay.

### 2.4.2 ENVIRONMENTAL

The potential environmental impacts that will be assessed as part of this ESIA include:

- Brine discharge modelling;
- Avian impact assessment; and
- Hydrogeological investigations for the beach wells.

# 3 CONSIDERATION OF ALTERNATIVES

Best practice environmental assessment methodology calls for consideration and assessment of alternatives to a proposed project.

The project has conducted an alternative assessment evaluating other potential project sites. Four alternative sites were investigated that assessed numerous project elements including but not limited to:

- Intake locations;
- Access to existing infrastructure;
- Proximity to sensitive sites;
- Land availability; and
- Access to municipal water infrastructure.

Further to the initial assessment and during the ESIA process, alternatives considered will take the form of optimisation and efficiency to reduce potential effects through an iterative process including plant design and project improvements.

# 4 THE ENVIRONMENTAL ASSESSMENT PROCESS

This ESIA, conducted by ECC, is undertaken in terms of the Environmental Management Act, 2007 and its regulations. The process followed in this EIA is set out in the flowchart in figure 2.

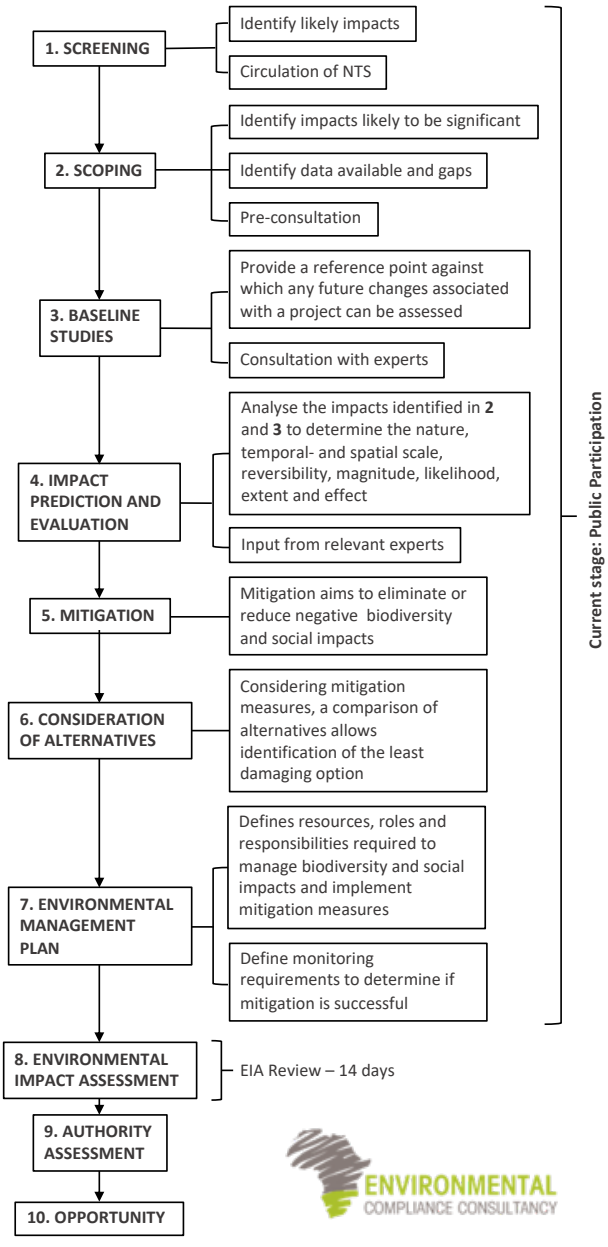


**FIGURE 4 - FLOWCHART OF THE ENVIRONMENTAL ASSESSMENT PROCESS**

## 4.1 SCREENING

A review of the proposed project screening findings against the listed activities was conducted; the findings of which are summarised below:

**ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES**

1. The construction of facilities for -
(a) the generation of electricity;
(b) the transmission and supply of electricity;

**WATER RESOURCE DEVELOPMENTS**

8.1 The abstraction of groundwater and surface water industrial or commercial purposes
8.12 The release of brine back into the ocean by desalination plants.

## 4.2 BASELINE STUDIES

For the proposed project, baseline information will be obtained through a series of specialist studies combined with desk-based studies and site verification.

The ESIA will focus on the environmental receptors that could be affected by the proposed project. ECC will also engage with stakeholders, I&APs and the proponents to seek input into the assessment.

## 4.3 IMPACT ASSESSMENT

Impacts will be assessed using the ECC EIA methodology. The EIA will be conducted in terms of the Environmental Management Act, 2007 and its regulations. ECC's methodology for impact assessments was developed using IFC standards in particular Performance Standard 1 'Assessment and management of environmental and social risks and impacts' (IFC 2012, 2017) and Namibian Draft Procedures and Guidance for EIA and EMP (GRN, 2008) including international and national best practice with over 25 years of combined EIA experience.

## 4.4 ENVIRONMENTAL MANAGEMENT PLAN

An EMP shall be developed for the proposed project setting out auditable management actions for the project to ensure careful and sustainable management measures are implemented for their activities in respect of the surrounding environment and community.

## 4.5 PUBLIC PARTICIPATION AND ADVERTISING

Public participation is an important part of the EIA process; it allows the public and other stakeholders to raise concerns or provide valuable local environmental knowledge that can benefit the assessment, in addition it can aid the design process. This project is currently at the scoping phase and public participation phase.

At this phase ECC will perform the following:

- Identify key stakeholders, authorities, municipalities, environmental groups and interested or affected members of the public, hereafter referred to as I&APs
- Distribute the NTS for the proposed project (this document)
- Advertise the environmental application in two national newspapers
- Place notices on-site at or near the boundary
- If required host a public meeting to encourage stakeholder participation and engagement, and provide details of issues identified by the environmental practitioner, stakeholders and I&APs
- Record all comments of I&APs and present such comments, as well as responses provided by ECC, in the comments and responses report, which will be included in the scoping report that shall submitted with the application, and

- Circulate I&AP comments to the project team for consideration of project design.

Comments must be submitted in writing and can be emailed using the details in the contact us section below.

**CONTACT US**

We welcome any enquiries regarding this document and its content. Please contact:

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