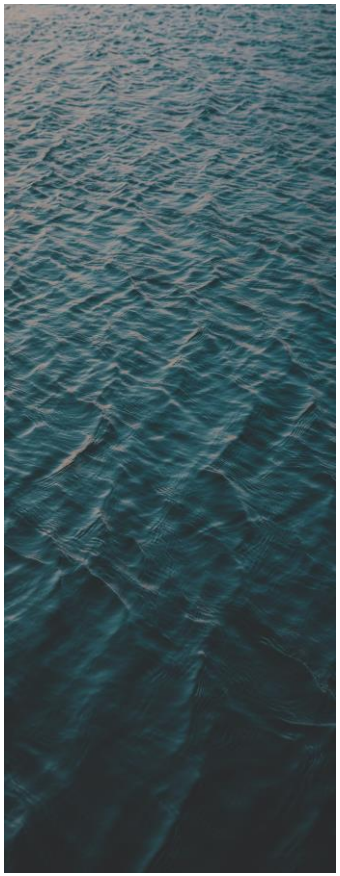
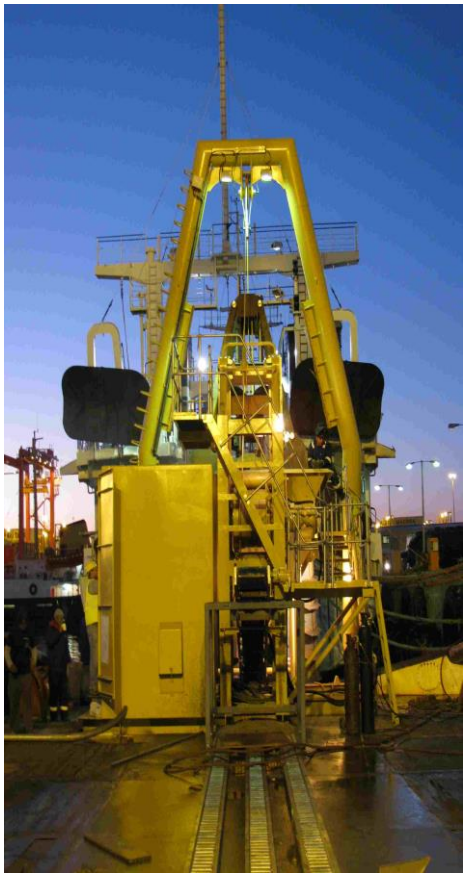
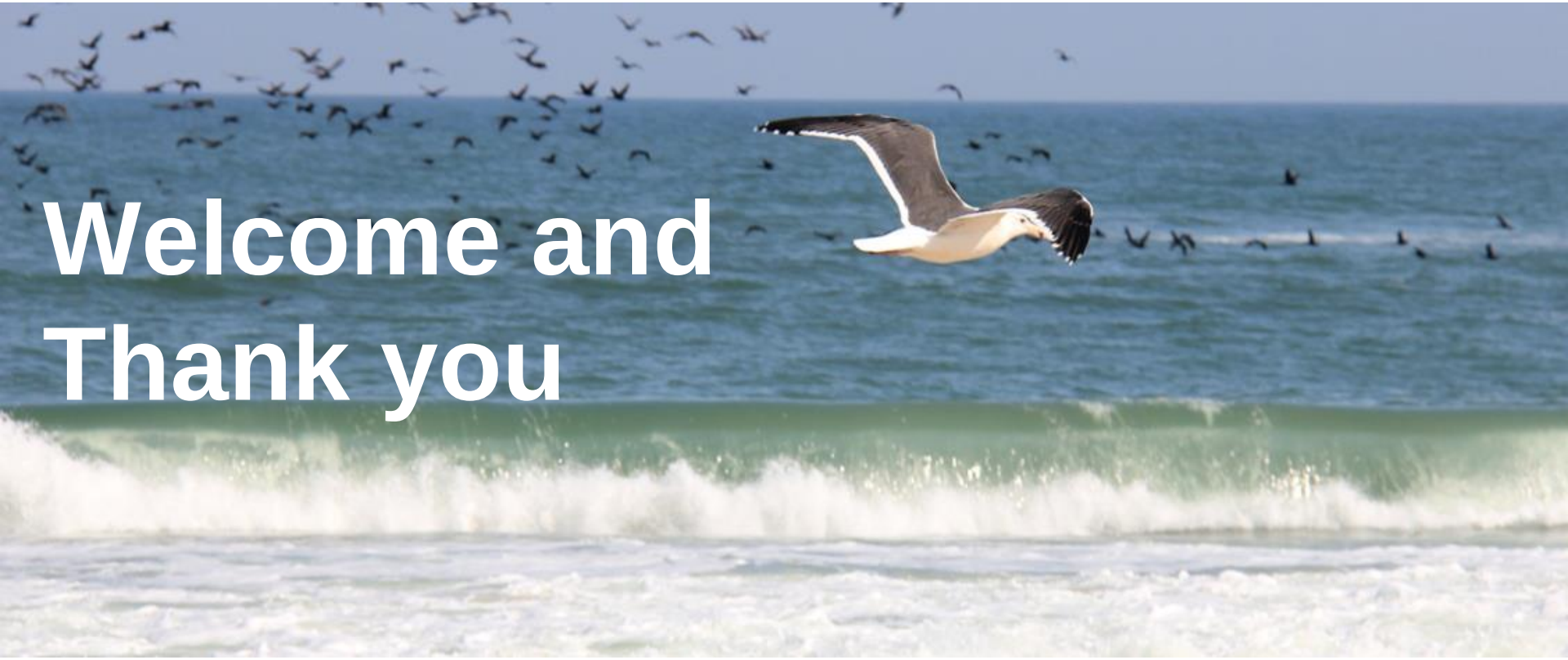
SANDPIPER MARINE PHOSPHATE PROJECT

Ministry Application Reference Number APP - 003397

ESIA Public Consultation







Welcome and Thank you

ECC
ENVIRONMENTAL
COMPLIANCE CONSULTANCY

AGENDA

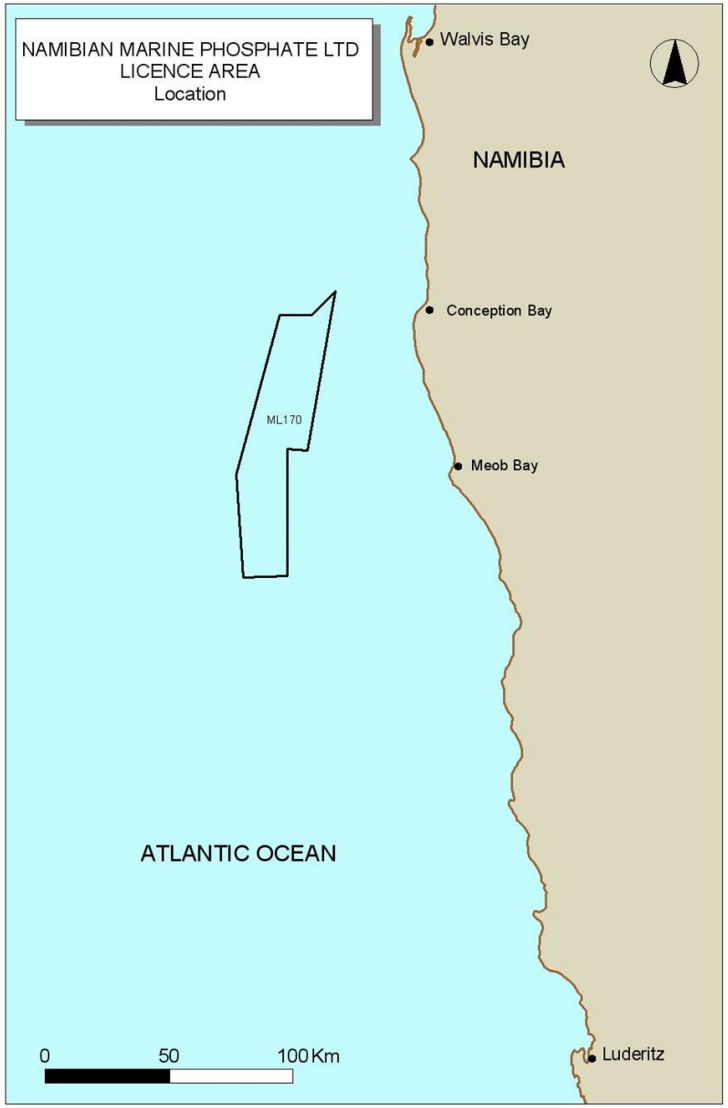
- Main Objectives
- Background Information
- Environmental & Social Impact Assessment (ESIA) Process – *Presented by ECC*
- NMP Presentation – *Presented by Mike Woodborne*
- Potential Biophysical & Socio-economic Impacts - *Presented by ECC*
- Baseline Studies
- Public Participation

Meeting Objectives

- ✓ Provide information describing the proposed Sandpiper Marine Phosphate Project
- ✓ Provide an overview of the independent environmental and social assessment process
- ✓ **Listen to the public and recorded issues or concerns, and incorporate this into the assessment process**

Why are we here?

- 2011 Mining licence issued to NMP for Phosphate Mining
- 2012 Detailed feasibility study (DFS) completed
  - Marine ML 170 EIA and ECC application submitted
- 2012 ML 170 additional stakeholder consultation completed
- 2013 EIA verification studies commenced
- 2013 18 month moratorium announced by MFMR
- 2014 EIA verification studies completed
- 2015 18 month moratorium concluded
- 2016 environmental clearance certificate awarded to NMP for ML 170 Marine Phosphate Mining
- 2016 appeal & legal action initiated
  - Project suspended in this time
- 2018 public consultation recommenced by order MEFT
- 2020 supplementary environmental studies completed
- 2021 legal action completed and high court judgement issued to:
  - Confirm ML validity
  - And to reapply for ECC – that's why we are here.



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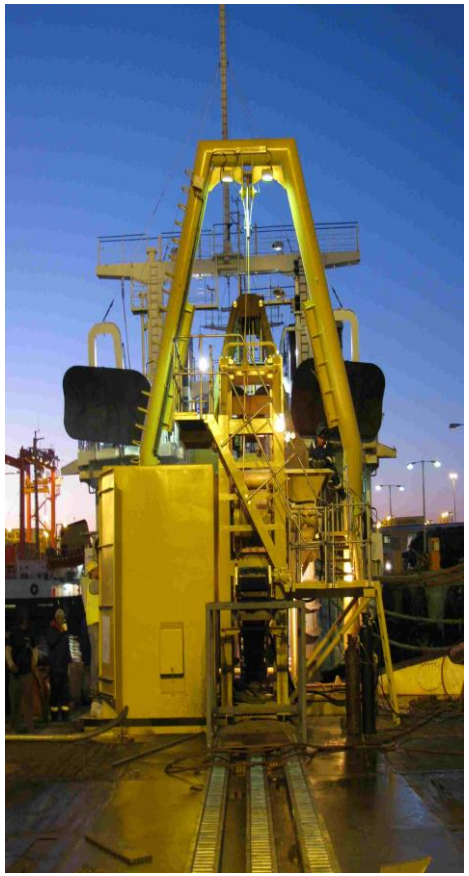
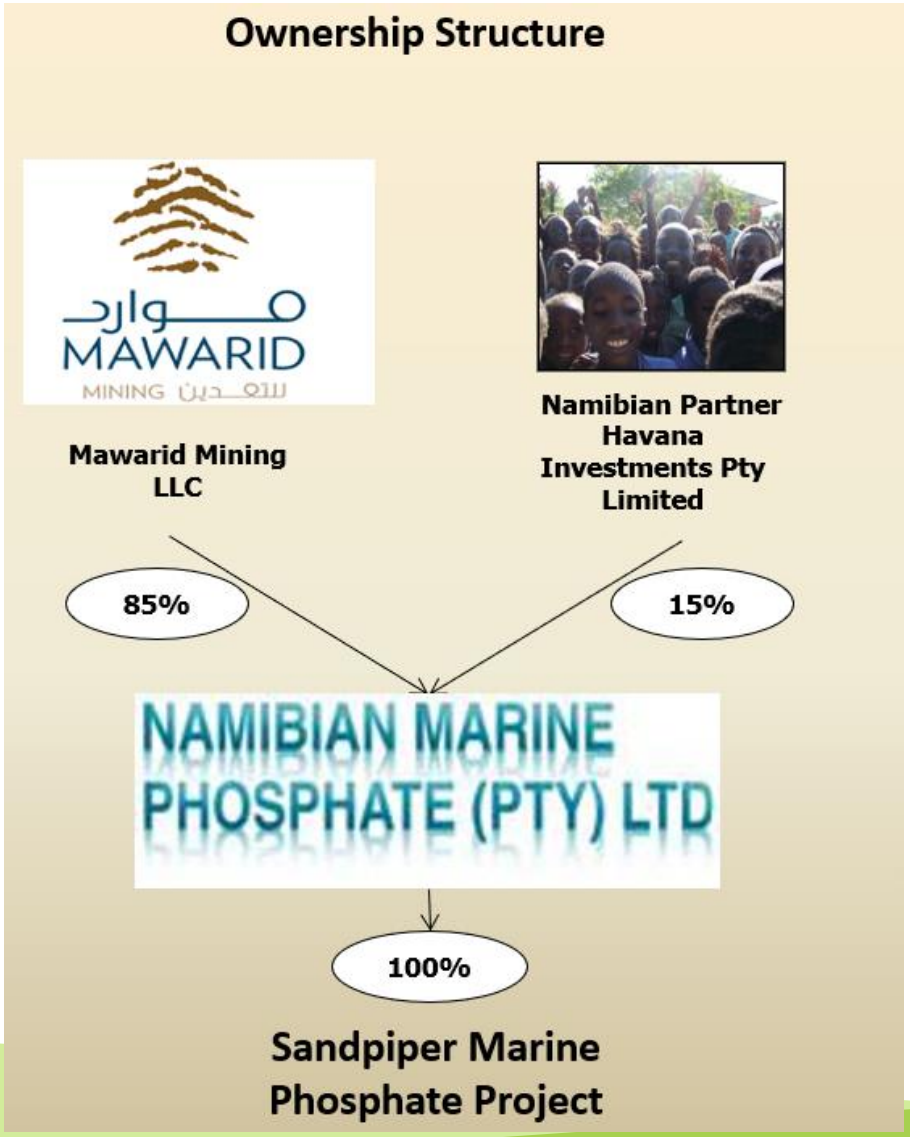
Mike Woodborne

Chief Operating Officer for NMP



NMP Structure and Project Milestones

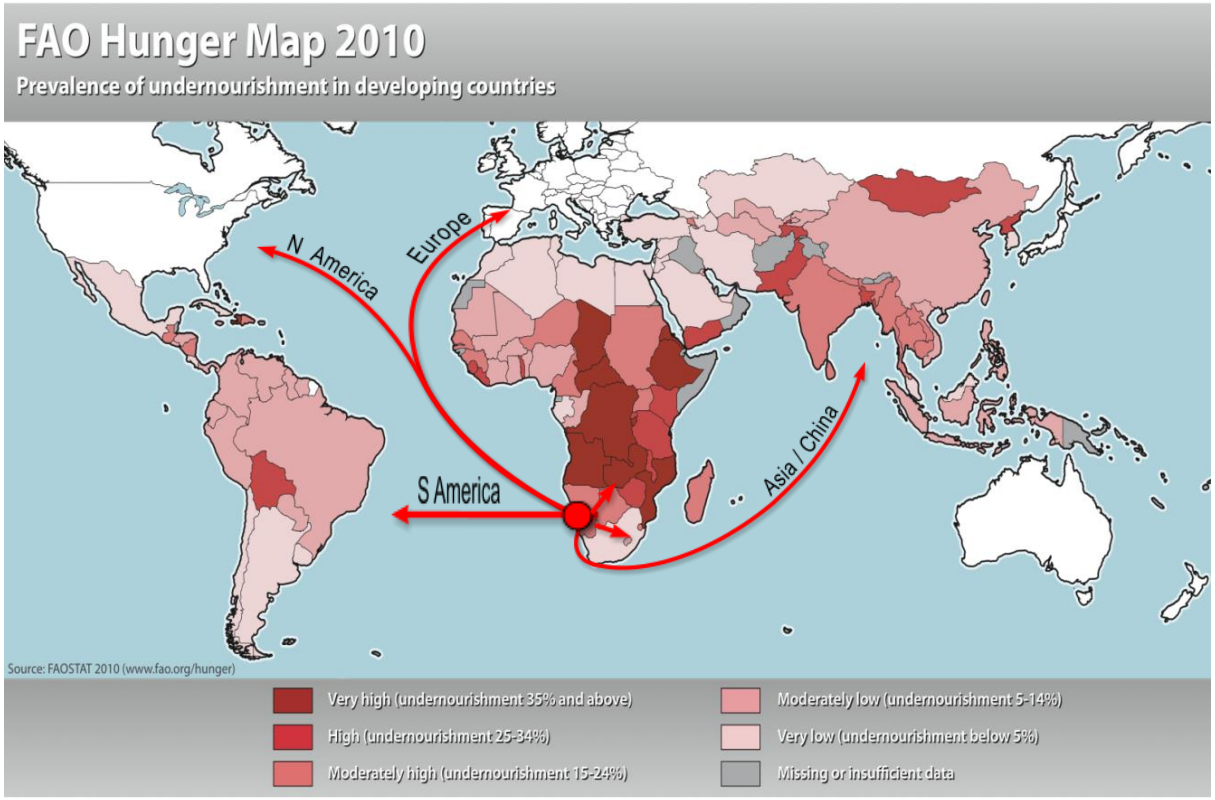


Project Milestones

- ✓ Definitive Feasibility Study (DFS) completed
  - Technical parameters
  - Financially positive
- ✓ Defined JORC & NI43-101 resource
- ✓ Mining Licence granted (ML 170)
- ✓ Pilot test work completed and commercial viability confirmed
- ✓ Environmental Impact Assessment *underway*

What is Phosphate & Where is it Used?

Sandpiper Phosphate Project – Market and Products



- The designations employed and the presentation of material in the map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

Potential uses

1. Direct Application Phosphate Rock (DAPR)
2. Single Super Phosphate (SSP)
3. Phosphoric Acid
4. Fertilizer Products
   - Di-Ammonium Phosphate (DAP)
   - Mono-Ammonium Phosphate (MAP)
   - NPK
5. Lithium Ferro-Phosphate Batteries

"One of the first ways to meet the increasing demand for food is to increase crop yields by using fertilizers. Rising commodity prices mean that farmers are making better profits and can afford to buy fertilizers. Demand and prices are expected to grow strongly over the next decade."
Investor Chronicle, May 9, 2011

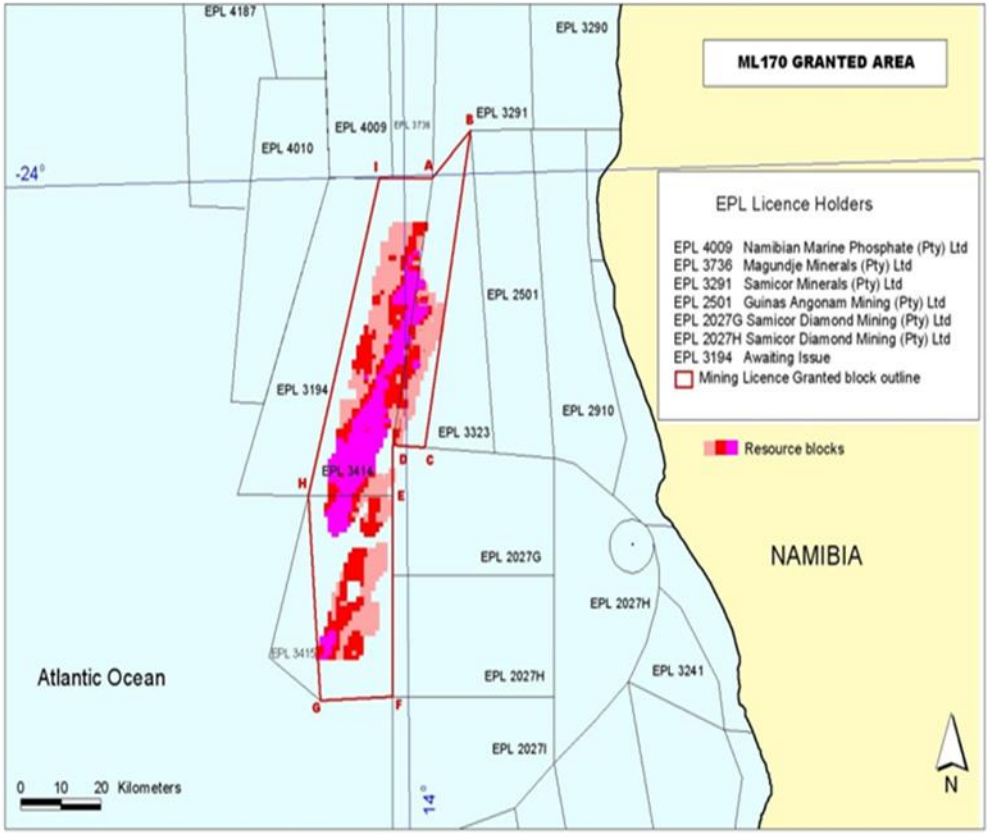
While lithium-iron-phosphate (LFP) batteries make up only a small percentage of the specialty phosphate market, they are forecast to see continued growth. It's worth noting that LFP technology isn't new — it is one of the original battery formulas — but it was phased out in the early 2000s due to lack of efficiency.

Phosphate Outlook 2022: Geopolitics to be a Key Market Mover
Georgia Williams Jan. 26, 2022 02:00PM PST

Mineral Reserves and Resources

Ore Reserves	Mineral Resources	Cut-off grade
Proven and Probable Ore Reserves of 132.76 Mt at 20.41% P2O5	Indicated Mineral Resource of 80Mt at 19.8%P2O5 (Indicated)	Ore Reserves and Mineral Resources were estimated at a 15% cut off grade
	Inferred Mineral Resource of 1.61 billion tons at 18.9% P2O5	

Based on a commercially viable cut-off grade of 15% P205, the phosphate resource within ML170 could sustain mining operations and benefits for future Namibian generations for more than 100 years.



Beneficiation Process


ROM material


Bin and conveyor


Screening


Coarse waste


Spirals

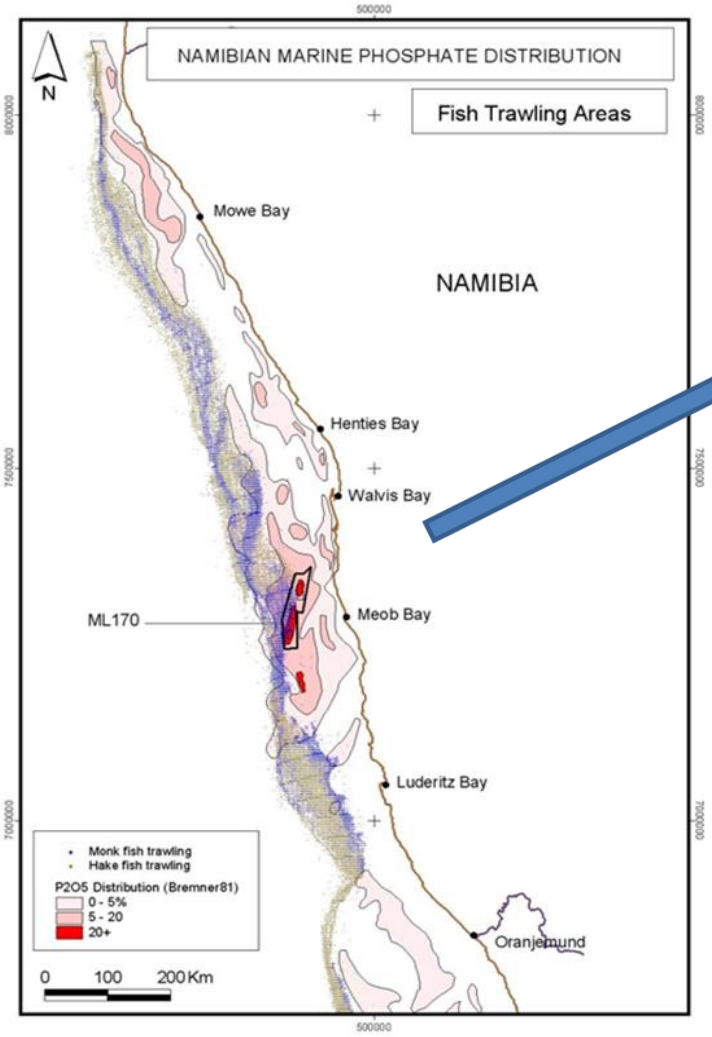

Slimes waste

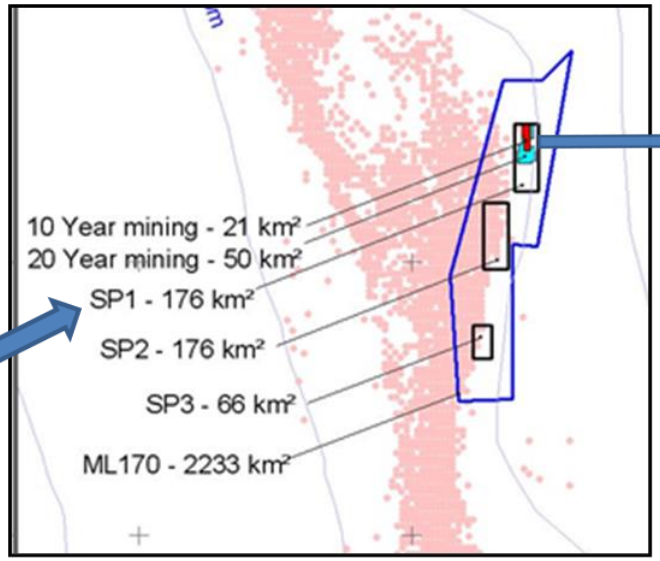

Attrition

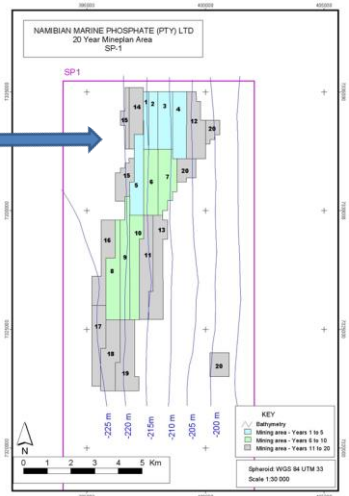

Dewatering


Final Product

20 Yr Mine Plan – Scale and Perspective







	Area (km²)	Area as % of ML 170	
ML 170	2233	100	
SP1	176	7.9	
SP2	176	7.9	
SP3	66	3.0	
20 Year mineplan		50	2.2
10 Year mineplan		21	0.9
1 Year mineplan		2.3	0.1

What are the Project Stages?

1

Lower the Dredge Arm

2

Dredge – 'vacuum' (not blast) phosphatic sand

3

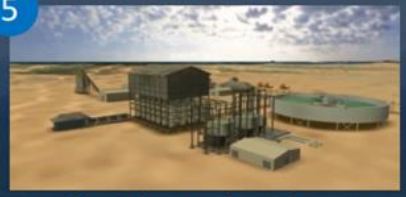
At Port – Hook up Pipeline to transfer Slurry to Ponds

Accurate


Incorrect


4

Deposit Slurry from the Vessel into Ponds on land

5

At the Plant, the Slurry is Mechanically Processed to produce Concentrate

6

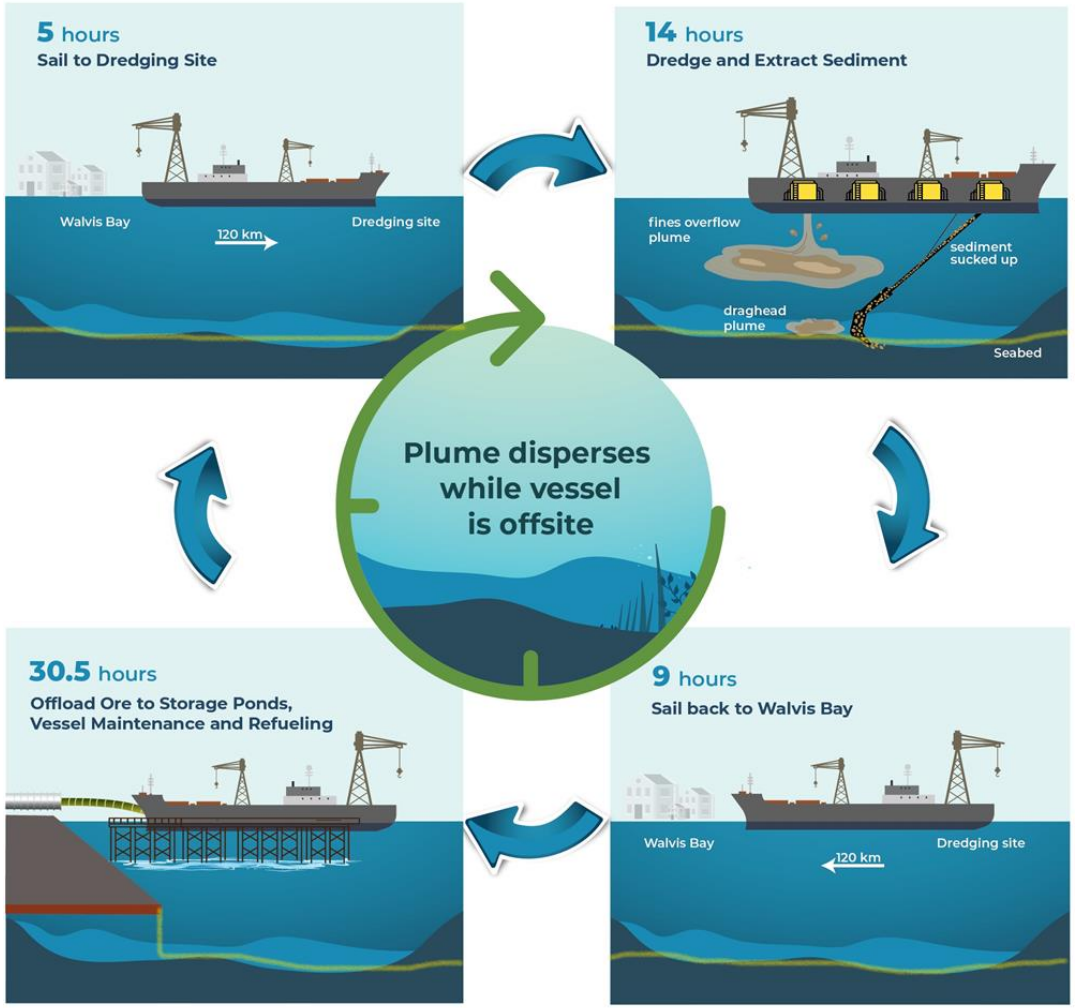
Transport Product for Local and International Sales

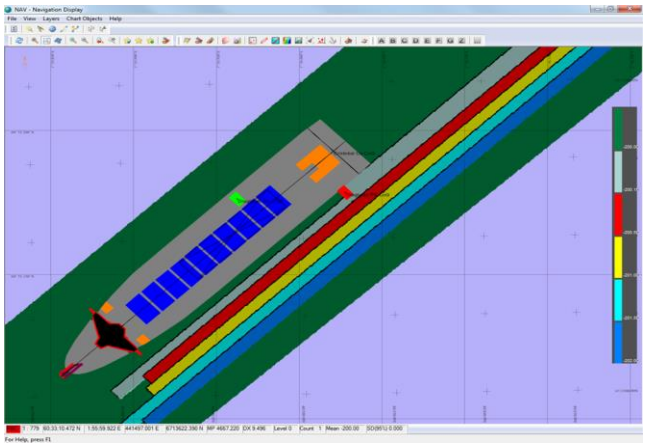
Dredging Cycle

Namibian Marine Phosphate (Pty) Ltd

58.5 Hours Average Cycle Time

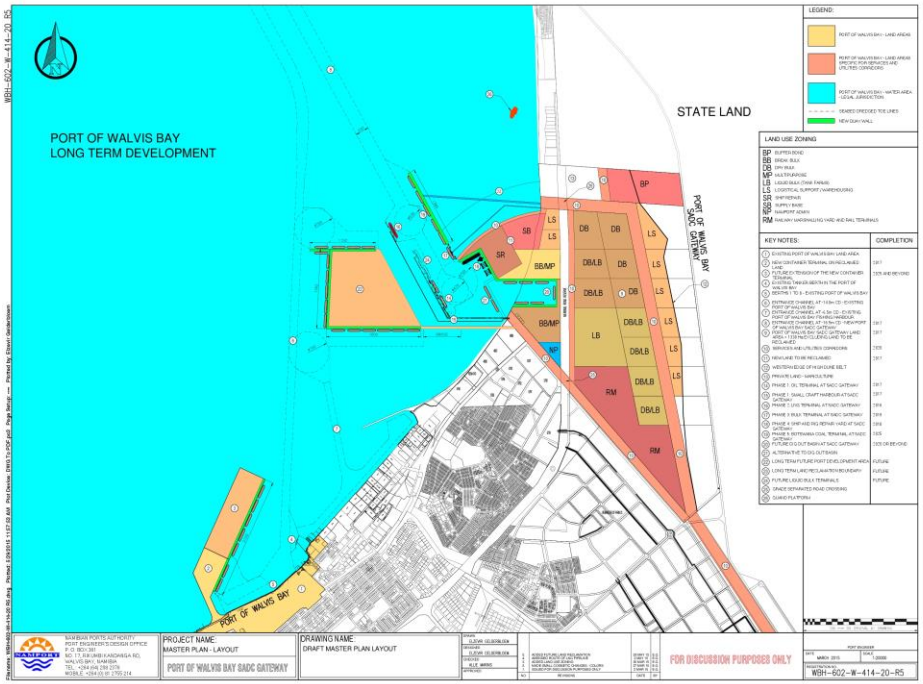
2.85 Cycles/Week



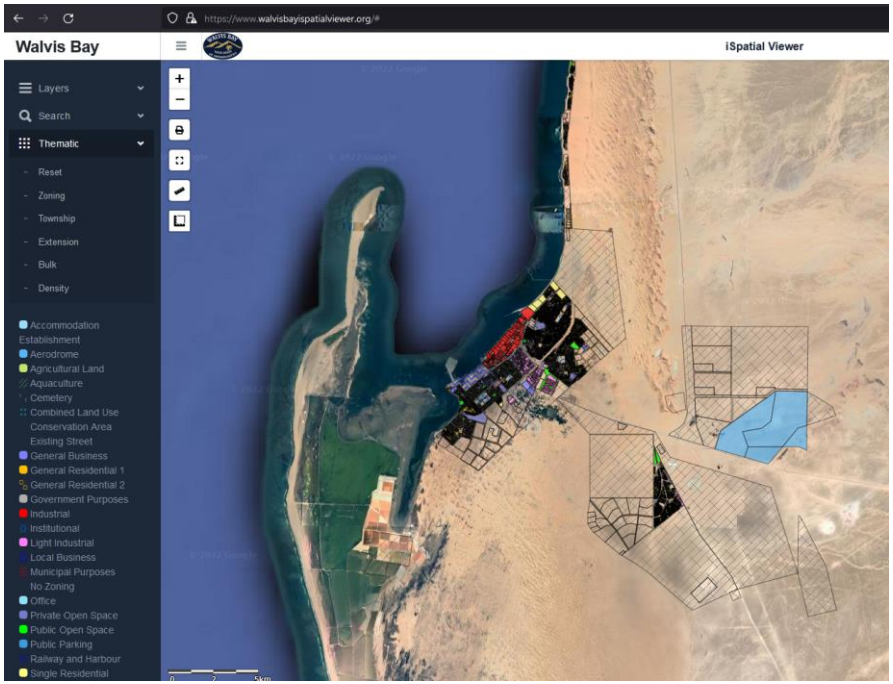


Related Industrial Developments

- Namport Expansion

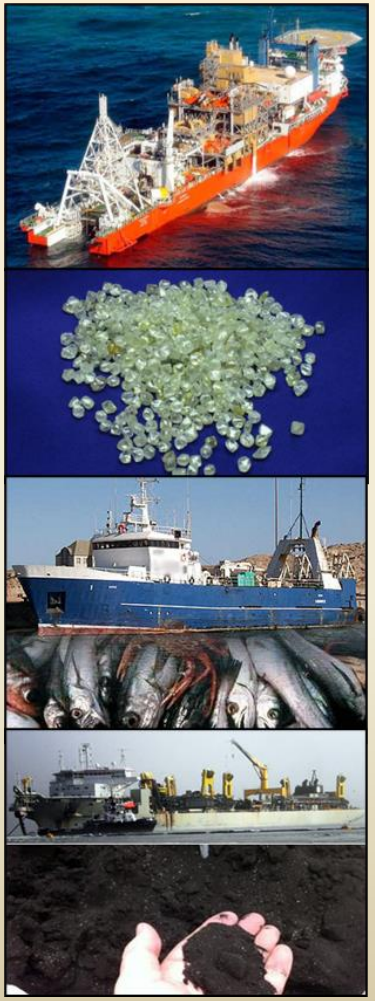


- Walvis Bay Spatial Development



What Permitting is Required for a Project to Begin?

Thank You

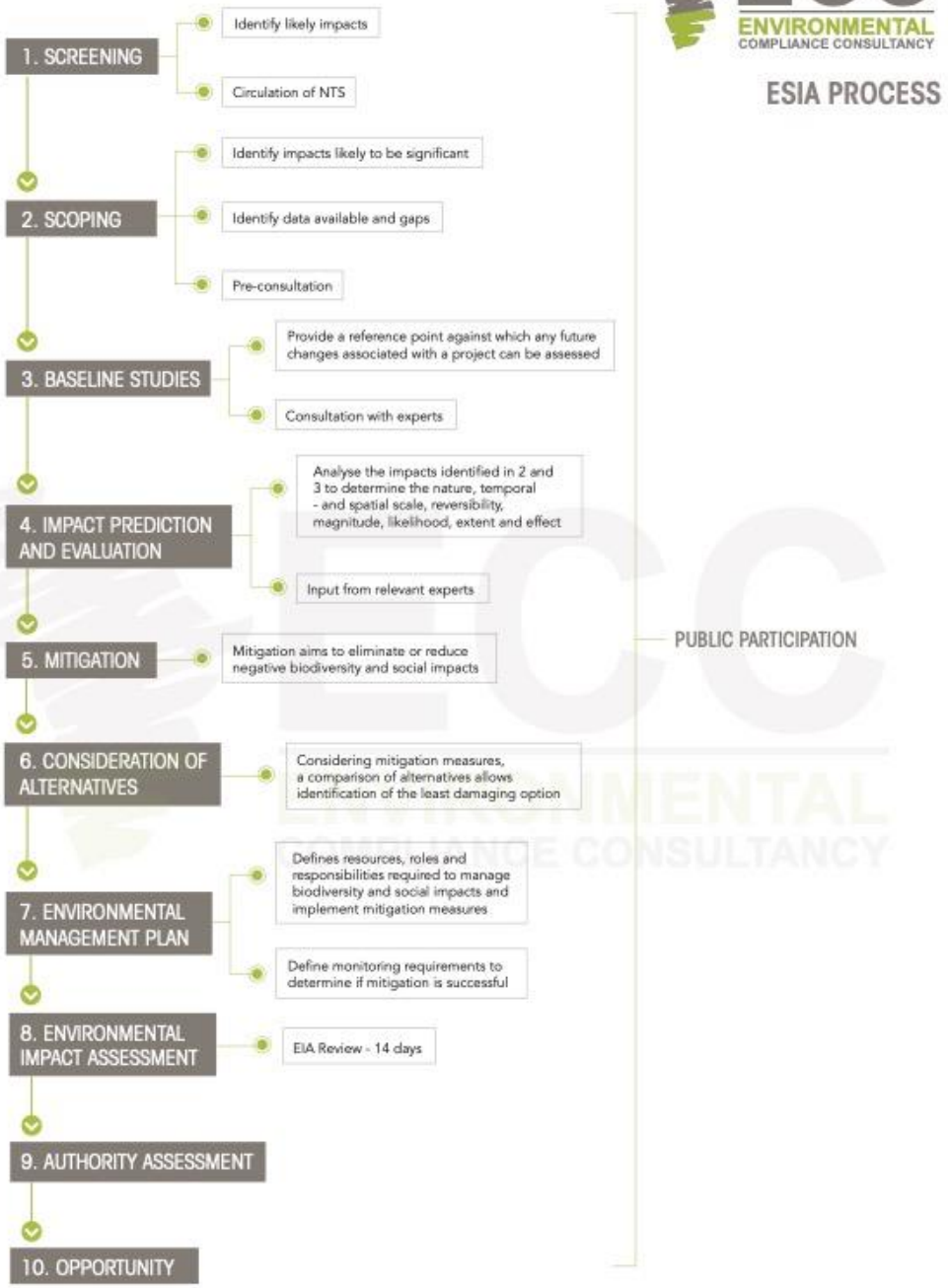


Namibia is fortunate that off its coast there are world class natural resources of fish and minerals in its ocean.

Marine Industries have a joint responsibility to enable Namibia to benefit from responsible development of <u>all</u> of its natural marine resources

ESIA Process

- Screening - APP-003397 (MEFT DEA Portal)
- Scoping – Current phase
- Assessment phase – next phase
  - Impact prediction and evaluation of the project and alternatives
  - Assigning mitigation measures
  - Developing monitoring plans
  - This phase culminates in the draft ESIA report and EMP
  - Submission to competent authorities



Public Participation

- Public notification of the project
- Background Information Document (BID) provided I&APs
- Public provided the opportunity to take part in the public participation process
- Direct consultation and focus group meetings with required stakeholders
- This presentation extracts information from the BID to describe the project to those attending the meeting.

Potential impacts to be assessed

- Potential impacts that can arise from the proposed project may include but are not limited to:
  - Effects on marine benthic fauna
  - Modification to the water column
  - Interference with fish behaviour
  - Implications for the commercial fishing industry
  - Implications on marine fauna
  - Job creation and skills development
  - Social upliftment
  - Regional and national economic benefits
  - Others both socioeconomic and biophysical

Baseline and Impact Assessment Studies Commissioned to date

Specialists and Consultants	Company/Organisations	Specialist Studies
		Fisheries seabirds and mammals
D Japp	Capfish	Fisheries
James Gaylard	Capfish	Biomass and Stock Estimates Hanke and Monkfish
Dr Hilkka Ndjaula	Unam	Reproductive Dynamics, recruitment and stock dynamics
Prof Mark Gibbons	UWC	Jellyfish
Dr Dave japp	Capfish	Seabirds and Mammals
Dr Dave japp	Capfish, MFMR	Marine Biodiversity Study
Dr Kevern Cochran	Capfish	Ecosystem assessment
Dr Dave japp	Capfish	Noise
		Water column and Sediments
Dr Robn Carter	Lwandle	Current Velocity and water mass
		Dissolved Oxygen
		Surfical Sediments
		Particulate Organic Matter concentraitons
		Inorganic Nutrient Levels
		Oxidative State
		Heavy Metal concentrations
		Hydrogen Sulphide
		Sediment Toxicity Study (pre-dredging)
		Benthos
Dr Nina Steffani	Steffani Environmental	Macrobenthos
		Plankton
Dr Bronwyn Kirby	UWC	Thiobacteria Study
Sebastian Brown	CSIR	Analytical methods
Dr Simon Foster	Pgysilia , UK	Meiofauna
Dr Tim McClurg	KZN Coastal Impact	Epifauna
		Plume Dispertion Modelling
Roy Van Ballengooyen	CSIR	Plume Dispertion Modelling
HR Wallingord (UK)	HR Wallingford	Plume Dispersion Modelling Detailed
		Geology and Physiography
Dr John Compton	UCT	Depositional History of Phosphate
Gordon Rigg	Marine Data Consultants	Seabed Physiography and habitat


Cape fur seal (*Arctocephalus pusillus pusillus*)


Bank Cormorant (*Phalacrocorax neglectus*)

Specialist EIA Studies

Seafloor mapping

MARINE DATA CONSULTANTS

Fisheries

Ecosystem assessment

Steffani Environmental

In-fauna

Project management

Habitat mapping

CSIR

CapFish

thiobacteria

Physalia

Plume assessment

METOCEAN SERVICES INTERNATIONAL

lwandle

meiofauna

Mega fauna

Biogeochemistry

University of the Western Cape

KZN Coastal Impact Consultants

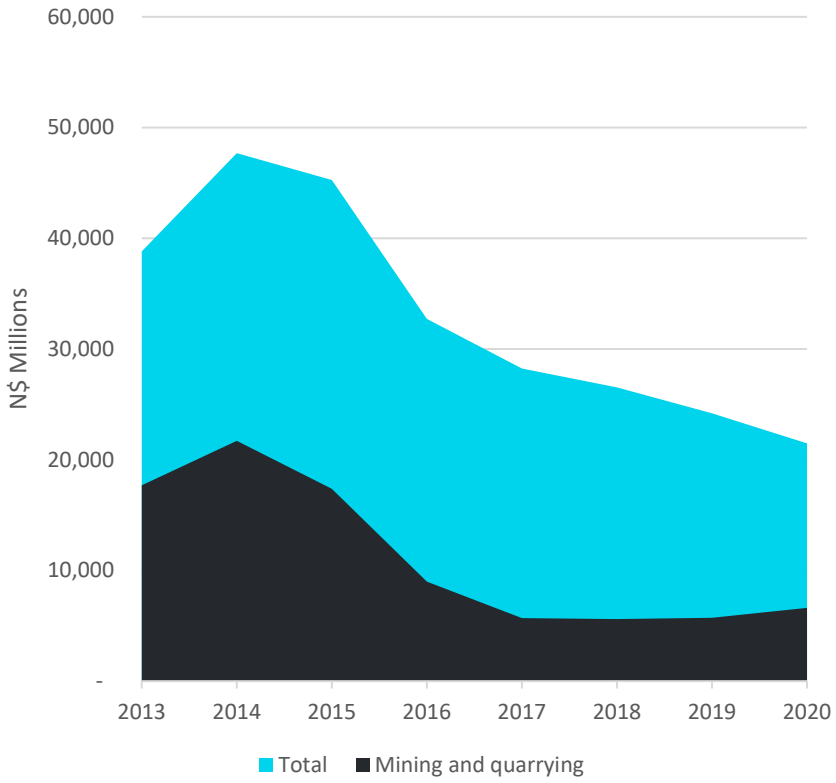
Marine instrumentation

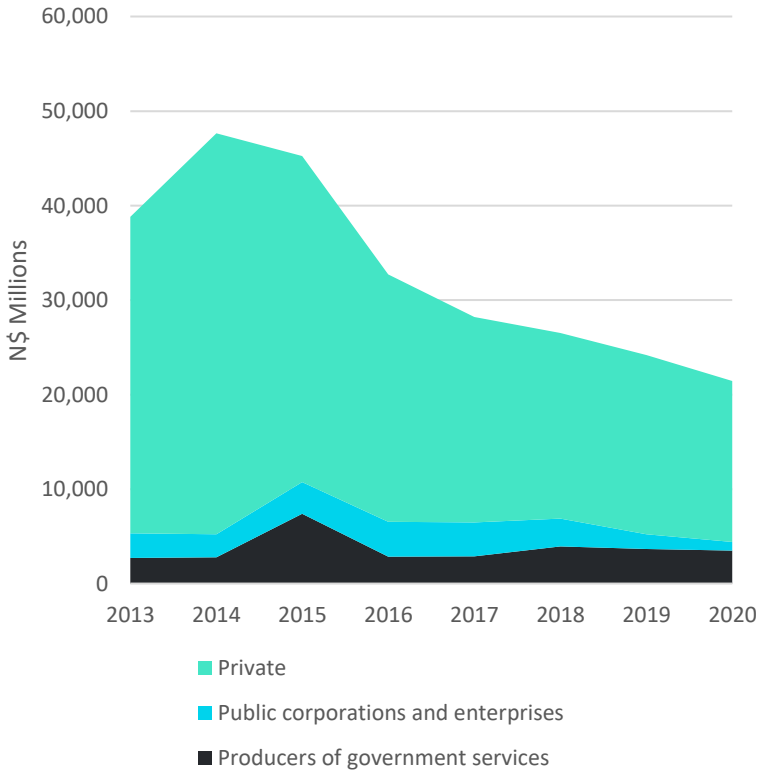
Socio Economics - Sandpiper Project

At a project level, if it were to be implemented, NMP's Sandpiper Project will:

- employ over 600 Namibians (directly and indirectly) for construction and operations in Walvis Bay
- create opportunities for SMEs and other economic sectors
- spend an estimated N$ 1 billion on civil and local infrastructure
- require a capital investment of N$ 5.2 billion for the development
- expect an annual revenue of N$ 4.2 billion
- contribute direct taxes of N$ 650 million/year
- contribute royalties of N$ 78 million/year

Investment


60,000
50,000
40,000
30,000
20,000
10,000
-
N$ Millions
2013
2014
2015
2016
2017
2018
2019
2020
Total
Mining and quarrying


60,000
50,000
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10,000
0
N$ Millions
2013
2014
2015
2016
2017
2018
2019
2020
Private
Public corporations and enterprises
Producers of government services

What you can do!

- Provide in writing, any issues and suggestions regarding the proposed development. This correspondence must include:
  1. Name & Surname;
  2. Organization represented;
  3. Position in the organization;
  4. Contact details and;
  5. Any direct business, financial, personal or other interest which you may have in the approval or refusal of the application.
- All initial contributions, comments and concerns must be submitted by 25th February 2022.
- Send written submissions to info@eccenvironmental.com
- Or uploaded onto the ECC website

Questions / Comments / Concerns

Name / Organisation	Comment / Concern

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Activities and Permitting