EMPRESA NACIONAL DE HIDROCARBONETOS, EP

ENH
EMPRESA NACIONAL DE HIDROCARBONETOS E.P.

Financing LNG projects with shorter term and different pricing mechanism

Nagoya, October 2018

BACKGROUND - MANDATE

MIREME

REGULATOR

COMMERCIAL

ENH IS THE SOLE GOVERNMENT REPRESENTANT IN HIDROCARBON BUSINESS

Established in 1981

- Shareholder in all exploration & production blocks
- Involved in all oil and gas value chain
- Plays a Agregator role managing all the domestic gas allocation

CURRENT PORTFOLIO

ENH

CURRENT ENH PORTFOLIO

Upstream — *Midstream & Downstream* — *Logístics*

EXPLORATION	PRODUCTION & PROCESSING	TRANSMISSION	DISTRIBUTION	SERVICES	FACILITES
P&T (PPA)	**Pande & Temane (PPA)**	**Pipeline – ROMPCO**	**Distribution network**	**Oil and gas services**	**Logistic base**
P&T (PSA)	CMH Companhia Moçambicana de Hidrocarbonetos, SARL	CMG Companhia Moçambicana de Gasoduto, SARL	ENH KOGAS	ENH Logistics	PCD
ÁREA 1	25% shareholder in the Pande & Temane Project	865 Km – Cross border	15 Km – Matola/Maputo	Operations in Palma	
ÁREA 4		MOZ – RSA	64 Km – rede Maputo Cidade		
ÁREA 3 & 6			16 Km – rede Maputo - Marracuene		
ÁREA A			Norte de Inhambane		
ROVUMA ONSHORE					
BUZI					
BLOCO 16 & 19					
MAZENGA					
5º CONCURSO					

MGC Matola Gas Company SA

25% - Transmission and Distribution

enmar

Subsea equipment supplier

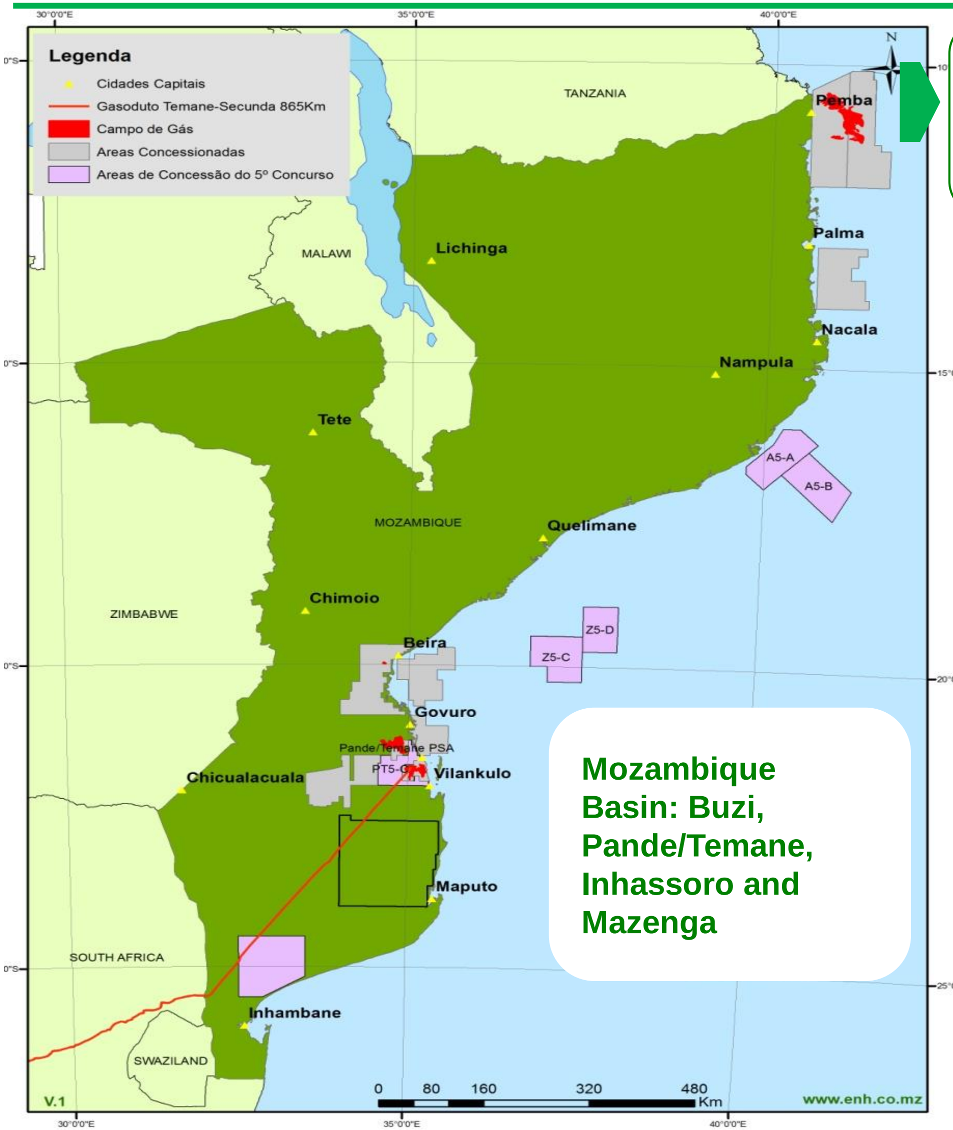
enhils

Logistic base sub concessionaire

ENH Logistics Bonatti

Maintenance and Instalation of compreension and metric equipment

NEW EXPLORATION BLOCKS



Mozambique Basin: Buzi, Pande/Temane, Inhassoro and Mazenga

Rovuma Basin: Area 1, Area 4 - 180 TCF's

5th TENDER

A5 - A		A5 - B		Z5 - C	
ENI	34%	EXXON	60%	EXXON	60%
SASOL	25%	ROSNEFT	20%	ROSNEFT	20%
ENH	5%	ENH	20%	ENH	20%

Z5 - D		PT5 - C		P5 - A	
EXXON	60%	SASOL	70%	DELONEX	70%
ROSNEFT	20%	ENH	30%	INDIAN	20%
ENH	20%			ENH	10%

Capex in exploration USD 700+m in the next 5 yrs.

Vote of Confidence in Mozambique + Future Resources Probability

Acquisition of 2D and 3D seismic data and drilling of at least 10 wells.

GAS AGGREGATOR - ENH

UPSTREAM

AGGREGATOR ROLE

DOWNSTREAM PROJECTS

Power	Fertilizer
Petrochem	GTL
	End-User Industry

- Minimum 25% of the production to be allocated to Domestic Market
- Domestic Industry Priority
- Common Infrastructures Development and Management - Synergies
- Gas City

- Operational Model (ENH)
- Principles:
  - Transparency
  - Efficiency
  - Regulatory Framework
  - Financial Strength

INDUSTRIAL DEVELOPMENT – DOM GAS

Current Model

LNG
ANCHOR PROJECT

Anchor market – export oriented, DES model, minimum required 9 MTPA for off-take in firm SPA's.
Current dom gas quantum: PHASE 1 - DomGas – 100 mscfd + PHASE 2 300 mscfd = 400 mscfd, 3+ TCF

Domestic Gas Tender

- POWER GENERATION
- GÁS TO LIQUIDS
- FERTILIZERS

New Infrastructures

- PEMBA O&G SERVICE CENTRE
- RESSETLEMENT VILLAGE
- MOF AND JETTY IN PALMA
- OTHER INFRASTRUCTURES

ROVUMA BASIN UNDERTAKINGS (AREA 1 & 4)

ENH
EMPRESA NACIONAL DE HIDROCARBONETOS, E.P.

AREA 4 - FLNG Offshore

Eni

- Currently under development.
- First gas expected in 2022.
- FID in LNG in 2017

- **Project -** Coral South FLNG/Offshore
- **Operator -** ENI
- **Plant Capacity -** 3.3 MTPA
- **Legal & Contractual Framework -** Completed
- **Domestic Gas** – N/A
- **Offtaker** – BP (100% Plant Capacity)
- **FID - 06/**2017
- **Start up** – 2022
- **Status** – Platfom under construction (Korea)

ON-SHORE DEVELOPMENTS

- *Massive CAPEX +USD 50B*
- *Domestic Gás downstream industry development.*
- *Local contect impact.*
- *Fiscal Revenues.*

AREA 4 - Mamba Onshore

ExxonMobil

- **Project -** Mamba/Onshore
- **Operator -** Mozambique Rovuma Venture
- **Number of Trains** – 2 (7.2/7.2)
- **Plant Capacity -** 15.2 MTPA
- **Legal & Contractual Framework -** completed
- **Domestic gas** – 500 mmscfd (TBD)
- **Offtaker** – Concept of the Marketing Strategy
- **Status** – Concept Phase

AREA 1 -Onshore

Anadarko Petroleum Corporation

- **Project -** MOZ LNG 1/Onshore
- **Operator -** Anadarko
- **Number of Trains** – 2 (6/6)
- **Plant Capacity -** 12 MTPA
- **Legal & Contractual Framework -** Completed
- **Domestic gas-** 400mmcsd
- **Offtakers** – Negotiation ongoing
- **Start Up** – 2023/4
- **Status** – Development Phase (Market)

ÁREA 1 PROJECT – FUNDING STRATEGY

BASE INFORMATION

Variable	Área 1
PROJECT DESCRIPTION	Reserves: 75 TCF. 2 Trains on-shore, integrate. Capacity: 12 MTPA LNG. POD – Approved - 8 th February 2018
SHAREHOLDERS	Anadarko (Operador, 26.5%); Mitsui (20%), ENH (15%), Bharat (10%), Oil India (10%), ONGC Videsh (10%), PTT (8.5%)
INVESTIMENTS AMOUNTS	US$23MM
ENH FUNDING AGREEMENT	Capex ENH SHARE :US$1.5B, Objectivo: **REFINANCIAMENTO. (*bridge finance*).**
STATUS	▪ Legal and Contractual regime agreed; ▪ Implementation of the reassentamentos plan oingoing ▪ SPAs negoation ongoing ▪ FID expected to mid of 2019
Domestic Gas	▪ 100 mscf/day allocation ▪ Adittional 300 mscf/day allocation during the second phase ▪ Selected offtakers: GTL (SHELL),Fertilizes (YARA), Energy (GL Africa).

ÁREA 1 PROJECT - INVESTMENT AND FUNDING

INVESTIMENTS

ITEMS (USD MILLIONS)	USD
EXPLORATION	3.070
DEVELOPMENT COSTS	23.00
TOTAL	**26.070**
EQUITY	11.070
PROJECT FINANCE	15.000

ÁREA 4 PROJECT - FUNDING STRATEGY

BASE INFORMATION

Variable	Área 4
PROJECT DISCRIPTION	Reserves: 90 TCF. Coral Sul “Tolling” Model with a “offshore” liquefaction facility. Capacity: 3.4 MTPA LNG. Development Phase. Mamba “Tolling” Model with a “onshore” liquefaction facility. Capacity: 15.2 MTPA LNG POD under discussion
SHAREHOLDERS	Mozambique Rovuma Venture (Operator, 70%); GALP (10%), ENH (10%), KOGAS (10%).
INVESTIMENTS AMOUNT	US$10 MM (Coral Sul) & US$25 MM (Mamba)
DEVELOPMENT LOAN AGREEMENT	**Coral Sul** ENH Capex:US$500M **REFINANCIAMENTO. (*bridge finance*).** Mamba To be agred.ENH Capex: US$ 1.3MM

Coral South FID signed: first June of 2017

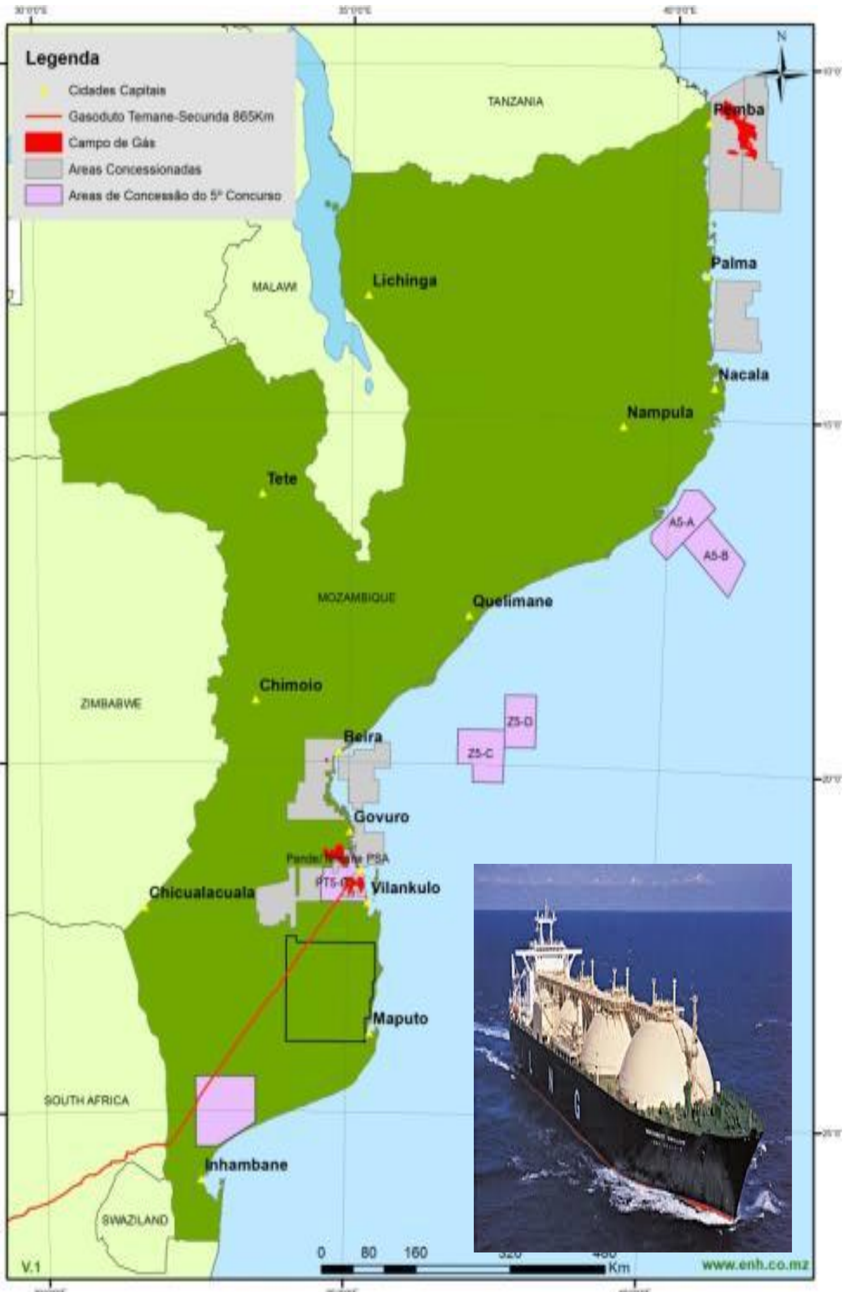
Entrance of EXXOM MOBIL

Next Project: MAMBA ON-SHORE

MAMBA Project will include domestic gas allocation

PRICE MECHANISM AREA 1&4

ENH
EMPRESA NACIONAL DE HIDROCARBONETOS, E.P.



ROVUMA BASIN UNDERTAKING

Rovuma Basin

- *Brent*
- Henry Hub
- JLC
- JCC
- TTF
- NBP

Reserves : +180 TCF
Capacity Proposed: 28MTPA
Initial Trains: 4

INDEXES	DESCRIPTIONS
Oil	*Brent*
HH	▪ Henry Hub (America & Pacific)
JCC	▪ Japanese Crude Cocktail
JCL	▪ Weighted average landed price in Japan
TTF	▪ Title Transfer Facility (Europe)
NBP	▪ UK National Balancing Point

THANK YOU

MUITO OBRIGADO