

# **Tanga International Energy Limited**

## **Business Plan**

### **Project Brooke**

08.08.2023

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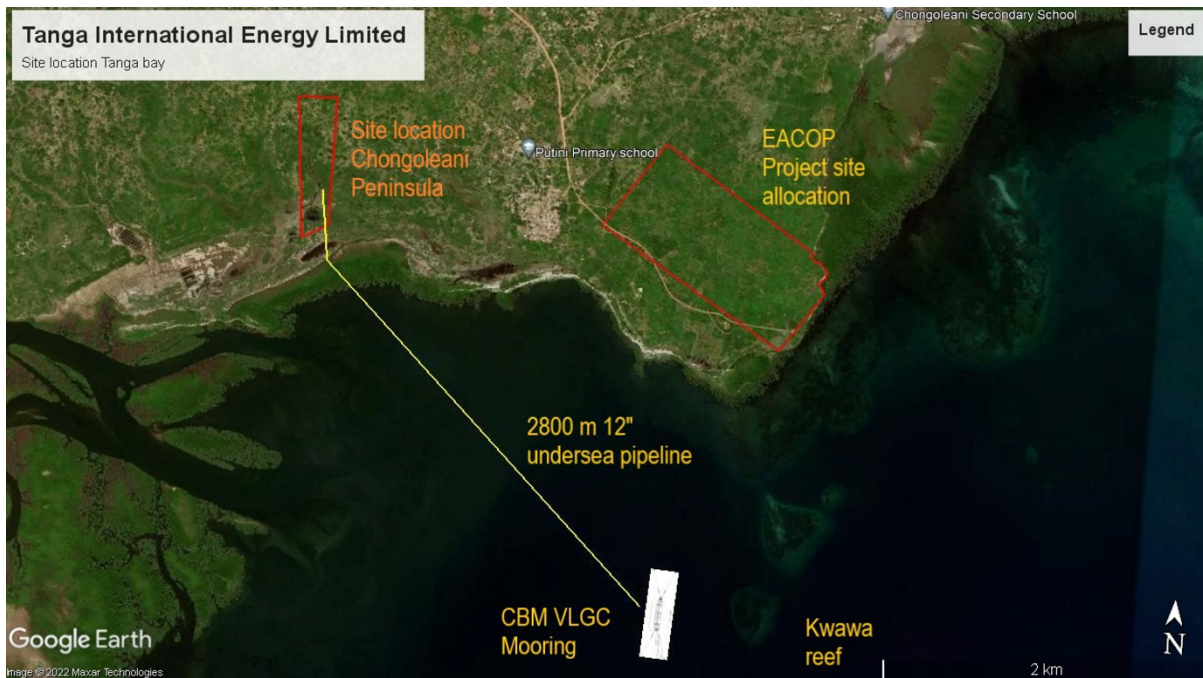
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## 1. Management Summary

- 1.1 Petredec is one of the world's largest LPG shipping and trading companies. It has a growing footprint in downstream operations with 3 large storage terminals.
- 1.2 After commissioning its Richards Bay terminal (South Africa) in 2020, Petredec started to look for a potential location for a new terminal along the eastern coast of Africa. Considering that its fleet is essentially made of Very Large Gas carriers (VLGCs), suitable potential locations are scarce, particularly when looking at existing ports.
- 1.3 East Africa is the fastest-growing LPG market in Africa: it is likely to top 2'500'000 mT by 2032. Today, apart from one exception in Kenya (Mombasa), there is no terminal greater than 7'000 mT on the entire coast from Richards Bay to Djibouti.
- 1.4 After many efforts, we came to the conclusion that CBMs (Conventional Buoy Mooring) were the only solution and rapidly identified Tanga Bay as an ideal spot. Hence, the establishment of Project Brooke which consists in building an 20'000 mT terminal with further expansion to 40,000 mT in 2028 in the port of Tanga, Tanzania, connected to a CBM capable of accommodating VLGCs with a total investment cost of approximately US\$ 115 million (\$80 million in Phase 1 and Phase 2 expected commissioning 2026 and \$35m in Phase 3 expected commissioning in 2029)
- 1.5 Tanga is the natural place (in terms of distance and ease of access) to build part of those strategic stocks and we are convinced that it represents an attractive additional business opportunity for the group. The terminal will be designed right from the start to allow substantial capacity extension. The land (25 ha) which has been secured from a private landlord through a 40-year Lease Agreement is more than capable of accommodating any future expansion.
- 1.6 The project will equip Tanzania with the biggest storage in the country and the second biggest on the entire East coast of Africa. Further, Tanga will become the regional import hub for the entire region as it is more strategically located than Mombasa. It will put the city of Tanga on the map of international trade routes. Finally, as Tanga will be the biggest hub, the project will be able to bring prices down significantly.



1.7 Tanga International Energy Limited (TIEL) is a company registered in Tanzania that will operate the terminal and will own the assets which include Transportation Road tankers that carry LPG from the port of Tanga. It is an affiliate of Petregaz Tanzania Pte Ltd, a holding company belonging to the Petredec Onshore division of the Petredec group.

1.8 Project Brooke will be established in 3 phases:

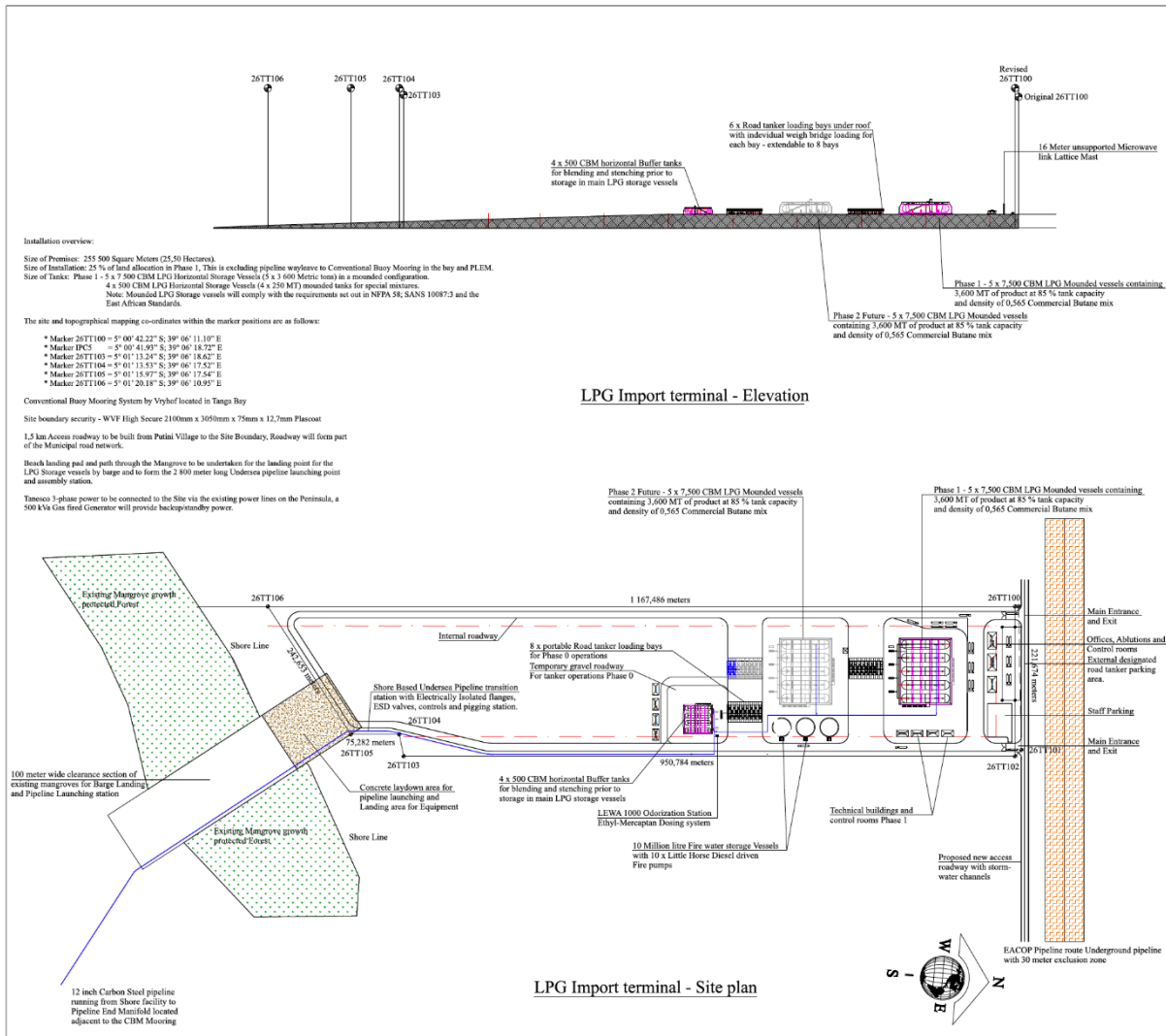
- a) The first phase, called **Phase 1**, with a permanently moored handy-size vessel discharging directly from the SMB into trucks. The objective of the first phase is to be able to load the first trucks and occupy the market without having to wait for the entire storage to be built.
- b) The second phase, called **Phase 2**, with a fully-fledged land terminal of 18,000 to 20,000 mT capacity, and
- c) A third phase, called **Phase 3**, with an additional land-based storage capacity of approximately 20'000 mT. We expect that requirement to come from OMCs in landlocked countries who wish to secure their own supplies by having reserved capacity for themselves. The total capacity of the terminal will then reach 40'000 mT which will allow us to discharge full VLGCs and therefore benefit from even better pricing per metric ton.

1.9 The final design will be dependent on the conclusions of the MHI (Major Hazards Installations) report but at this stage, we envisage the following:

- a) 4 buffer tanks of 500 m<sup>3</sup> each (indispensable for Phase 1)
- b) 5 x 7'500 m<sup>3</sup> mounded bullets (for Phase 2)
- c) 5 x 7'500 m<sup>3</sup> additional mounded bullets (for Phase 3)

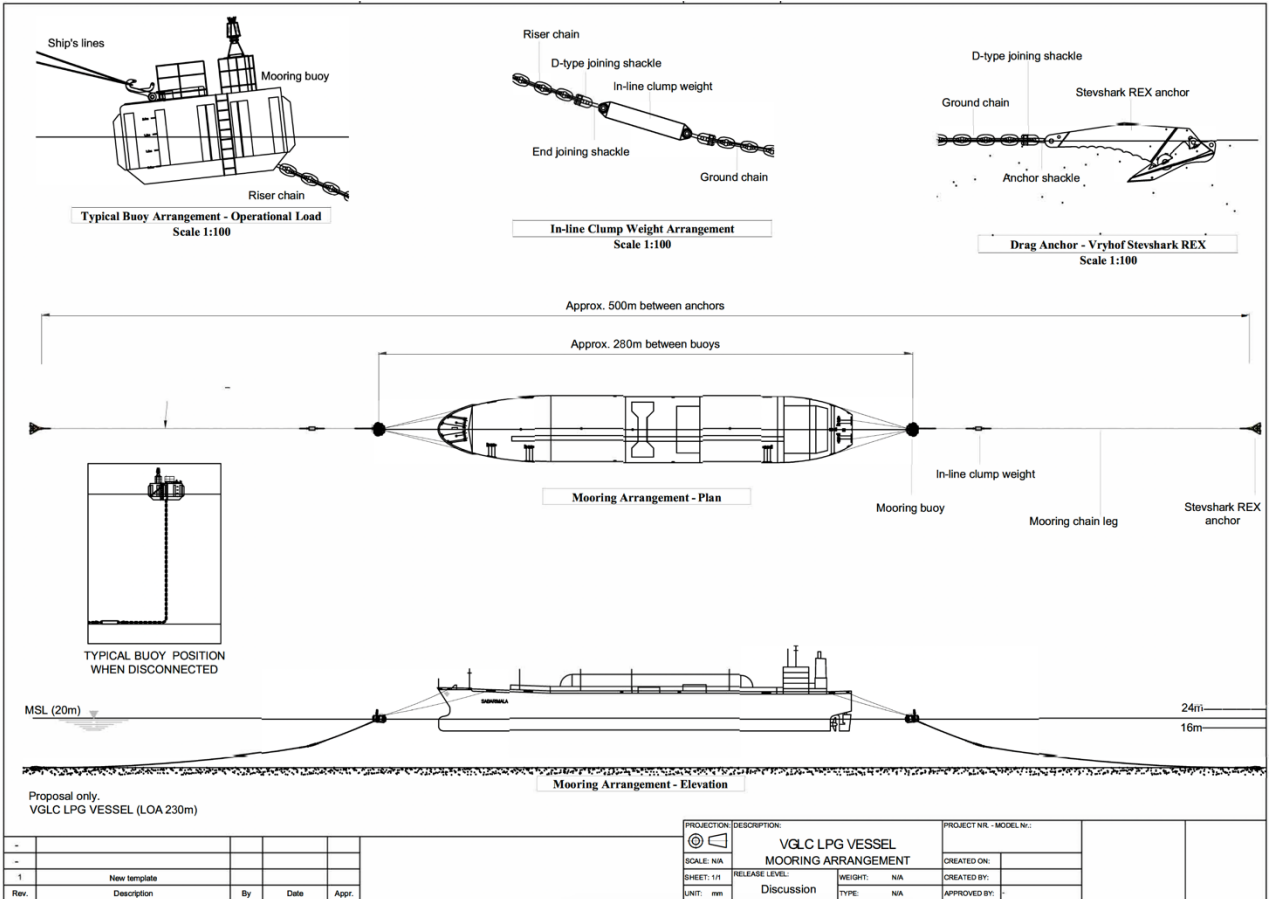
- 1.10 Project Brooke represents a formidable opportunity for Tanzania and our company to build a unique trading position on the East Coast of Africa. The volumes of Tanga added to those of Mauritius and Richards Bay will make the group a dominant force in that part of the Indian Ocean, opening additional opportunities as the competitiveness of our supplies will be unrivalled.
- 1.11 The purpose of Project Brooke is clearly to be the main LPG sourcing point of East Africa, particularly for its landlocked markets, which are desperate to get access to a reliable and competitive source of products. With this terminal, we intend to build and organize a genuine corridor of supply to those markets, which may imply constructing or taking a stake in significant land storage facilities (hubs) in Tanzania, Rwanda, and Uganda.
- 1.12 Shore Terminal
- a) Installation to be built in accordance with the SANS 10087:3 LPG standards and the South African National Building Regulation SANS 10400.
  - b) All pipelines in accordance with SANS 10083:1; SANS 10087; EEUMA 190 and NFPA 58. Full FEA is to be conducted on all vessels. All welding to follow ISO 3834.
  - c) Site to be enclosed with Clearview fences with two 10 m sliding gates and have sensor coil topper.
  - d) Road Tanker Discharge Gantry to be under one roof for weather protection;
    - i. Third party driver parking and rest area to be segregated by fence and security to avoid unauthorised entry into the facility.
    - ii. Fire Water Reservoir requirement for protection in accordance with SANS 10087:3 (997'141.8 litre per hour per tank).
    - iii. 10 x Little Horse diesel driven fire water pump units capable of delivering 12'500 l/mn each.

The layout below shows clearly how the 3 phases of the project are organized. They are designed in a way that we can safely and conveniently build them independently without disturbing the performance of the phase which is in operation, receiving and dispatching product.



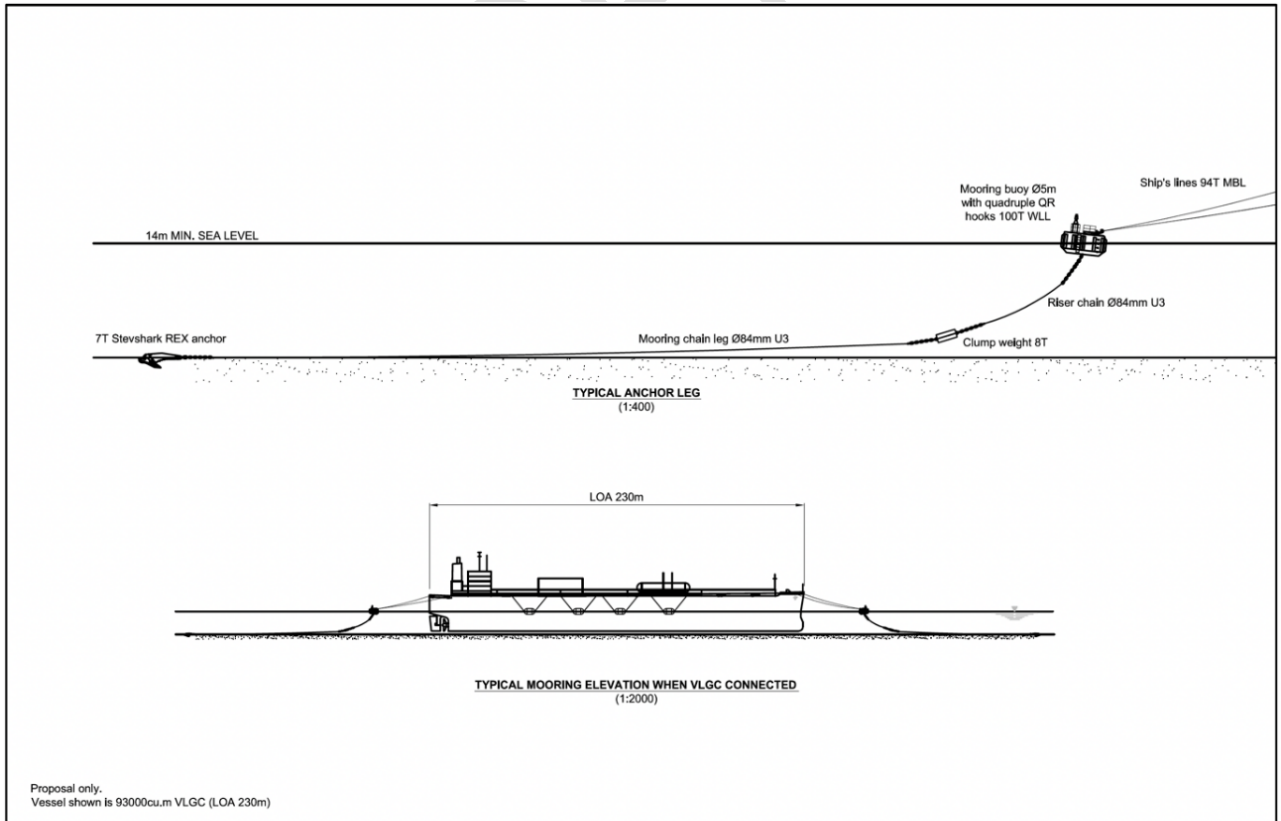
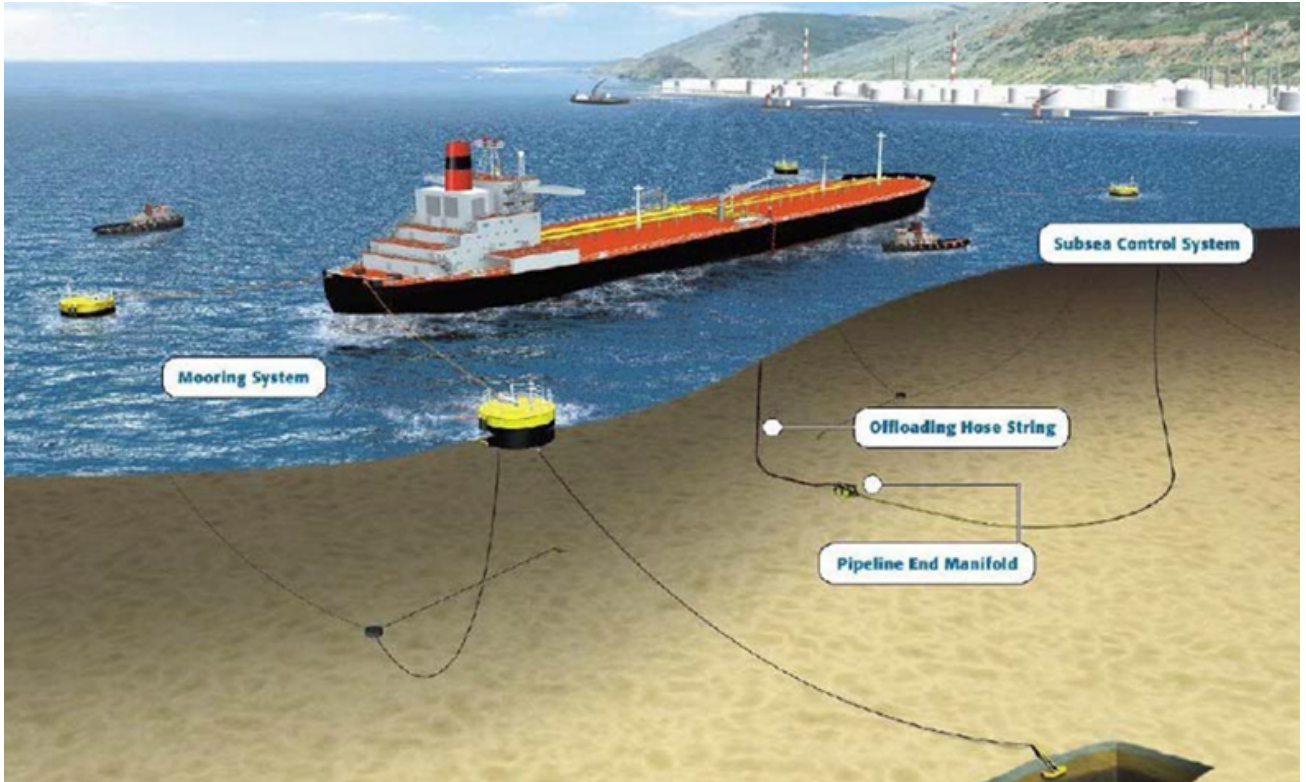
### 1.13 CBM and under-water pipeline

- The CBM is designed to accommodate VLGC discharge as well as VLGCs STS operations.
- It follows the strictest regulations and has a minimum impact on the marine environment.
- The CBM is connected to the shore through a PLEM (Pipeline End manifold) and a 2.75 km coated underwater pipeline.



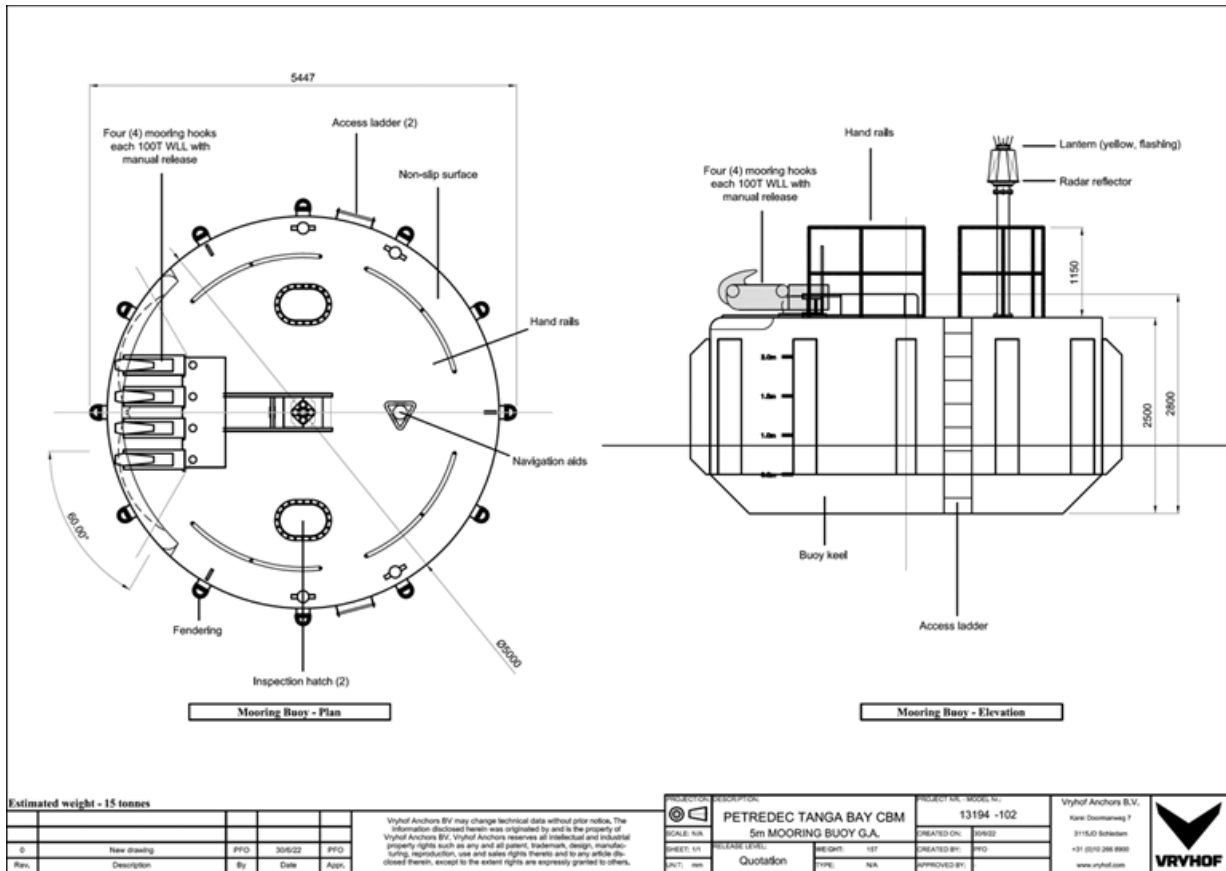
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1	New template			
Rev.	Description	By	Date	Appr.

PROJECTION:	DESCRIPTION:	PROJECT NR. - MODEL NR.:
SCALE: N/A	VGLC LPG VESSEL	
SHEET: 1/1	MOORING ARRANGEMENT	CREATED ON:
UNIT: mm	Discussion	CREATED BY:
		APPROVED BY:



Proposal only.  
Vessel shown is 93000cu.m VLGC (LOA 230m)

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1 Rev. Description	PFO By	30/02/22 Date	KNO Appr.	SCALE: RELEASE LEVEL: PRELIMINARY SHEET: 1/1 UNIT: mm	MESSAGE: N/A TYPE: N/A	APPROVED BY:	



## 2 Company Overview

Tanga International Energy Ltd was incorporated in July 2022 as a subsidiary of Petregaz Tanzania Pte Ltd (999 shares) and Petredec Holdings Pte Ltd (formerly known "Petredec Holdings (Eastern) Pte Ltd" (1 share).

Both companies are part of the Petredec Group.

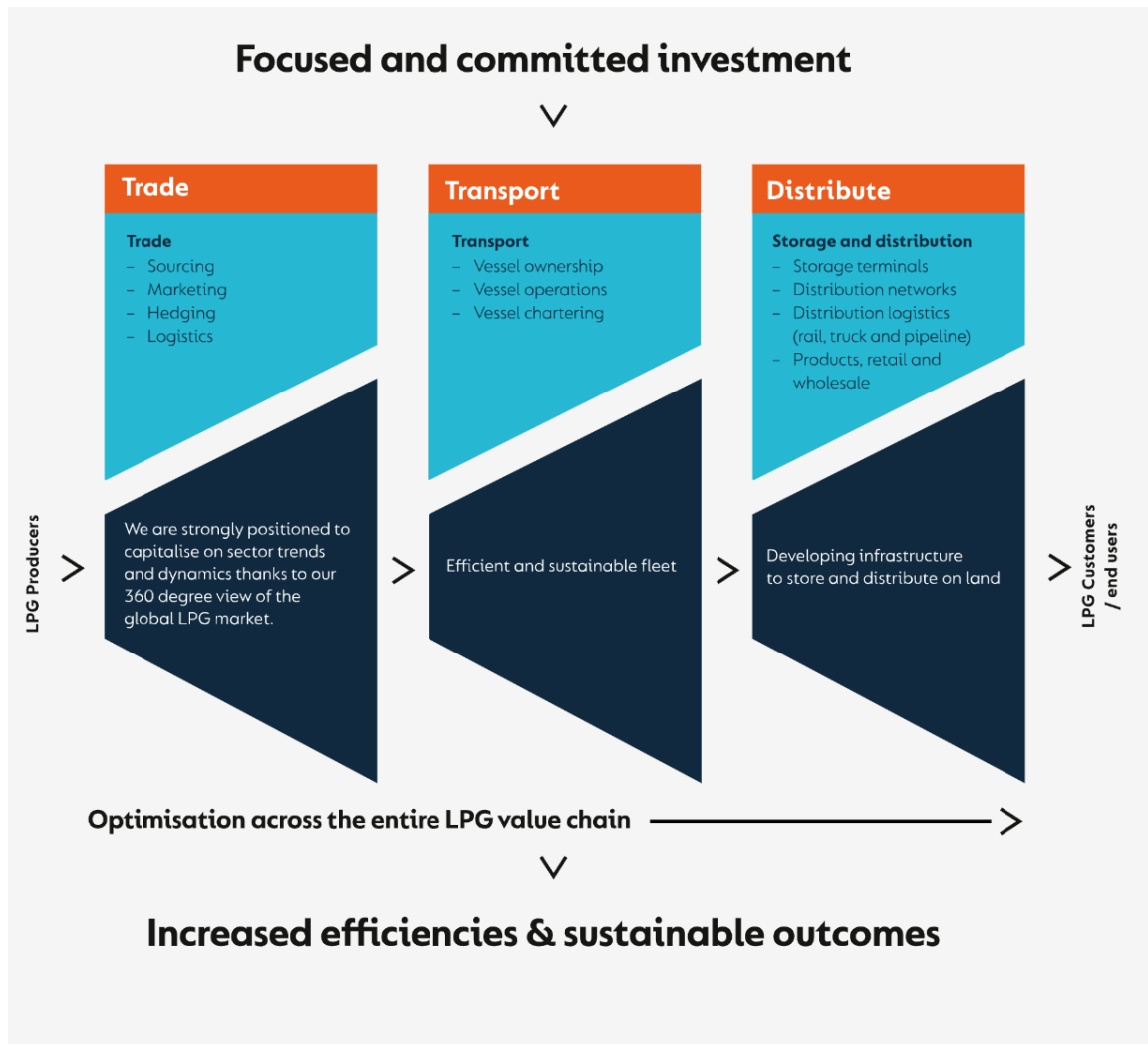
<https://petredec.com/>

Petredec is one of the world's largest LPG Shipping and Trading companies. Its "onshore" division invests in LPG terminals and distribution networks. The Mauritius and Richards Bay terminals have been widely recognized as game changers in their regional markets. On the East coast of India, a 34'000 mT refrigerated terminal is also due to open in the second half of 2023.

Petredec trades, transports, and distributes LPG to a variety of customers worldwide but with a focus on the developing world.

Its fleet of owned and operated LPG vessels is both modern and fuel efficient enabling the group to transport LPG with the lowest possible impact on the environment. Petredec owns the second largest and youngest fleet of very large gas carriers (VLGCs) and the second largest handy size gas fleet in the world.

Through its distribution of LPG around the world Petredec’s customers can unlock the health, social and economic benefits associated with cleaner energy.



### 3 Vision

We see our **Mission** as “bringing cleaner energy to power progress”. In many locations around the world, Petredec is already leading the way in bringing LPG, one of the planet’s most promising cleaner sources of energy, to those who need it. TIEL is taking that commitment to East Africa and Tanzania in particular.

Our **Vision** is to become the platform where any wholesale counterparty can buy LPG, through our experience and management of storage and importation of LPG, ensuring reliable and affordable supplies in the entire region.

#### Why LPG?

LPG is a by-product of oil & natural gas production and refining. It is a clean burning energy source recognised for its transportability and ease of use relative to alternative forms of stand-alone energy.

LPG use falls into three broad categories:

- Residential and commercial applications
- Industrial applications
- Agricultural uses

In the residential and commercial markets, LPG is used primarily for cooking, space heating, and water heating.

Industrial customers typically use LPG in the production process (in kilns, furnaces etc.) and to power engines and propel vehicles such as warehouse forklifts.

Agricultural users consume LPG to dry crops, rear poultry, and control weeds among other applications.

LPG is a cleaner-burning fuel that can help meet energy needs while addressing concerns on climate change.

- ⇒ 60% carbon reduction by substituting wood for LPG.
- ⇒ 35% less CO<sub>2</sub> emitted by LPG than coal, on a Btu basis.

Adoption of LPG will decrease household air pollution

- ⇒ Over 1/3 of the world population lack access to clean cooking, primarily relying on biomass – which contributes to ~4m premature deaths each year.

Substituting LPG for wood will avoid deforestation

- ⇒ 51% of annual global net deforestation can be saved by converting 268m households to LPG.

## LPG benefits societies



(Source: [www.lpga.org](http://www.lpga.org))

### Providing reliable access to energy

LPG is a viable energy source in remote areas, requiring little to no infrastructure

### Easy access to a safe and quick source of energy

In many cultures, people walk 20+ km carrying 20+ kg wood for cooking and spend 20+ hours per week gathering wood – all avoidable by instead using LPG as fuel, freeing up time and improving people's health as a result of lower emissions when burning LPG compared to wood

### Facilitating societal development and mobility

Reliable access to electrical energy, freeing up time from cooking and reducing diseases enable societies to educate, improve and prosper

### Improving diets by safe processing and disinfection

With fuel scarcity, diets can be obliged to shift to higher consumption of less nutritious but faster cooking foods, increasing risks of infectious disease transmission due to insufficiently cooked food and improperly boiled water

## Tanzania Roadmap

- The Tanzanian government is playing a crucial role in promoting the growth of the LPG sector through various policy initiatives and regulatory measures. Key government agencies involved in the sector include:
  - The Ministry of Energy: Responsible for energy policy formulation, monitoring, and regulation.

- The Energy and Water Utilities Regulatory Authority (EWURA): The primary regulatory body overseeing LPG operations, including licensing, pricing, and safety standards.
- Key government initiatives include:
  - The National LPG Policy (2013): A framework aimed at promoting LPG as a clean and efficient energy source for cooking and heating, reducing deforestation, and improving public health by minimizing indoor air pollution.
  - Removal of Value-Added Tax (VAT) and import duties on LPG: To make LPG more affordable for consumers and encourage its adoption.
  - The National LPG Strategy (2018-2030): A roadmap outlining key objectives, strategies, and targets for the development of the LPG sector in the country.
- Statistics show that currently, only five percent of the Tanzanian population uses LPG as cooking energy, with three percent using electricity and two percent using other sources such as bio-gas, leaving a staggering 90% percent of Tanzanians using charcoal and fire wood as the primary source of energy.
- To combat this, the Government intends to set aside, starting from the 2023/2024 financial year, a clean cook fund to be used towards the efforts for a clean cooking transition.
- The target is for at least 80% of Tanzanians to be using clean cooking solutions by 2032, starting with a switch to clean cooking solutions by all government institutions serving at least 300 persons by the year 2024.

## **4 Business Analysis**

- 4.1 We aim to increase LPG access in the market and make Tanga a regional energy hub due to its strategic location. This infrastructure project will meet Tanzania's LPG development plan.
- 4.2 Being the owners of both the storage and the CBM means Petredec will be able to efficiently manage the process, all the way from our VLGCs to the LPG trucks. This will ensure the reliability of supply which is so critical not only for the success of the terminal but also for the development of a healthy LPG market. The Government of Tanzania and regional Governments in the region, are investing considerable amounts in making LPG the transition energy of choice; it would be a shame if shortages were to upset those plans and push consumers to revert to charcoal or firewood. Our terminal will ensure this never happens.
- 4.3 In addition, the Governments of Rwanda and Uganda have set themselves aggressive penetration rates objectives. These objectives were determined thanks to LPG Master Plans which were designed in 2021 and 2022. This should considerably boost regional consumption and create important “shorts” in the market. Rwanda alone plans to consume 220'000 mT by 2032.
- 4.4 The Government of Rwanda should adopt in Spring 2023 an ambitious LPG development plan to increase the penetration rate of LPG among its population. It aims to reach 200'000 mT by 2030 and that will entail substantial investments infilling plants and in the cylinder pool. Logically, it is also seeking a solution to have strategic stocks (+/- 2 months) to give comfort to its population that the product will always be available.

#### 4.5 Benefits for Tanzania:

- The project will equip Tanzania with the biggest storage in the country and the second biggest on the entire East coast of Africa.
- Because of a better and more central location than Mombasa, Tanga will become the regional import hub for the entire region. It will put the city of Tanga on the map of international trade routes.
- As the biggest hub, the terminal will be able to bring prices down significantly, helping to raise the penetration rate in Tanzania from approximately 6% today to 15% in 2028. This increase will arithmetically bring the total national consumption to a minimum of 375'000 mT.
- The terminal business model proposed by Petredec will also foster competition and allow small OMCs to penetrate that market which was more or less the privilege of larger companies. This will also contribute to the market growth.

## 5 Marketing Analysis & Strategy

### 5.1 Market opportunity

The main drivers of LPG markets are simple: population growth, GDP growth and above all product availability. With this terminal on stream, all factors are favourable for a rapid rate of consumption increase. The terminal being the best situated and the most competitive (by quite a difference), we have built our scenario on initial annual volumes of 120'000 mT growing to 220'000 mT in year 3 and increasing by 12 to 20% annually (average regional consumption growth). By 2032, we estimate that these volumes will represent a market share in the region of less than 24%.

### 5.2 Target market

- a) The primary target market of the terminal will be Tanzania and the landlocked countries around it: Rwanda, Burundi, Uganda, Zambia, and Malawi. The Port of Tanga is geographically very well positioned on the main roads leading to the North and West of Tanzania as well as to the neighbouring markets. It does not suffer from the traffic congestion of Dar es Salam or Mombasa. When the terminal becomes operational as Part of Phase 1 in the second part of 2024, the market consumption of our 6 target markets will be a minimum of 390,000 mT.
- b) For the sake of simplicity, in terms of target markets, we can view East Africa as 2 regions: one supplied through Tanzania and one through Mombasa, Kenya, generally referred to as the Northern Corridor. Still, we believe that our facility in Tanzania, because of its characteristics and strengths, would also be a direct rival to the Mombasa terminals on their own turf.

### 5.3 Product flow

- a) All products will be imported in large parcels discharged from VLGCs at the CBM and pumped to the land storage.

VLGC → CBM → Storage Tank → Loading Gantry → Truck

VLGCs carry butane and propane in segregated compartments but are also able to discharge any mixture of the 2.

- b) As all tanks on land are propane rated, the terminal will be able to accommodate any butane/propane ratio. Most industrial burners are more efficient when they are fed with propane rich mixtures or pure propane. Today some industries are restricted because of the impossibility to get access to such products. Our terminal brings an immediate solution. The same applies to factories which use LPG as a propellant: the fact that our terminal can deliver exactly the right ratio (and therefore pressure) would help them to expand their business.

#### **5.4 Pricing**

Prices will be based on the monthly Saudi CP price for butane and propane plus freight plus a standard margin.

We plan to establish representative offices in all countries of the region to channel customers to the terminal. Sales will be made in TSH to domestic customers and in USD to export customers. The company will sell its gas under the brand "Petregaz".

### **6 Operational Plan**

#### **Construction Project**

After evaluating various possible options, TIEL's decided to go for a "turnkey" approach with an EPC contract awarded to a single contractor.

This is due to the complexity of the project but also to the lack of infrastructure available in Tanga.

The site itself is also a challenge as it has no access to utilities (power and freshwater) nor to the public road network.

To facilitate and accelerate future works, TIEL decided to build an access road, do all the site clearing and connect the site to the power grid prior to awarding the EPC contract.

An international tender was launched in May 2023 and the proposals were submitted on the 17th of July.

The following steps are:

- Pre-selection
- Proposals clarification process
- Selection
- Contract negotiation
- Award of contract.

This last step is expected to take place on the 15th of September 2023 and works will commence 1 month later.

TIEL will control the execution of the contract with a team based in its offices in Tanga city. Their main tasks will be liaison with contractors, contract adjustments, HSSE supervision, relations with local communities, problem-solving and quality control.

The task of this team will be also to prepare the operational phase and the management of the terminal (manuals, processes, organization, training, etc...). Recruitments will be conducted from Tanga.

## Business Model

- a) The business model we propose is the same as the one we are using successfully in Richards Bay (South Africa). It is the model of an open terminal that sells Free on Truck (FOT) to all marketers whether domestic or from neighbouring countries. Basically, the terminal provides an import service and for the customers who do not have enough transport capacity, it will also take care of the logistics from the terminal gate to the customer's plant/storage.
- b) The terminal design allows re-export operations. Although such operations are likely to be limited in the first phase of the project, as capacity is expanded, they will become more frequent if not dominant as the years go by. The terminal has a clear vocation to supply the entire East Africa region and provide the reliability of supplies for governments to safely roll out their LPG master plans.

## 7 Human Resource

The detailed human capital requirements for the project for Phase 1 and 2 is shown in the below tables:

<b>Project Initiation Phase</b>	
<b>Activities</b>	<b>Number of employees</b>
Hydrographic survey	10
Geotechnical survey and topographic survey	16
In country legal	1
Company set up	2
Site demarcation	3
Site security (guards and offsite control)	8 to 12
Drilling of additional holes (Geotech)	8
<b>Total</b>	<b>48 to 52</b>

<b>Project by work parcel</b>	
<b>Activities</b>	<b>No of employees</b>
Site Fencing by WFSA (3 crews including local labour)	15
Access road construction	25
CBM Mooring Installation (Local Crews and tugs)	25
PLEM and Pipeline Installation (Crews, tugs, platforms and pipe launching)	20
Civil works for beach landing (Clearing mangroves and concrete work)	30

Casting of concrete sink blocks for the pipeline by locals	12
Site Clearing and levelling (Phase 0)	7
LPG Vessels and equipment transport site (Phase 0)	18
LPG Vessels, Civils, Roadways, hardstands, laydown areas (Phase 0)	55
Mechanical installation of equipment and vessels	20
Fire networks (Phase 0)	12
Electrical and Instrumentation (Phase 0)	10
Temporary Offices, ablutions and control room	6
Site Clearing and levelling (Phase 1)	14
LPG Vessels and equipment transport site (Phase 1)	25
LPG Vessels, Civils, Roadways, hardstands, laydown areas (Phase 1)	50
Mechanical installation of equipment and vessels	30
Fire networks (Phase 1)	12
Electrical and Instrumentation (Phase 1)	10
Permanent offices, ablutions, canteens and control room	9
<b>Total</b>	<b>405</b>

### **Site Operation post Completion**

<b>Site operations on completed project</b>	
<b>Position</b>	<b>Number of employees</b>
Site general manager	1
Managers	4
Supervisors	6
Site operators – truck filling, weighbridge control (Based on two shifts)	16
Administrative staff	6
Stock management	2
Cleaners and janitorial	4
Ship to shore crew boat staff (Driver and mooring line handlers)	3
Permanent security (Onsite, administration and supervisory)	12
<b>Total</b>	<b>54</b>

### **Employment Objectives**

The table below shows the expected employment objectives:

<b>Employment Objectives</b>		<b>Males</b>	<b>Females</b>	<b>Local</b>	<b>Foreigners</b>
Initial Phase	Short Term	32	12	40	4
	Short Term	342	63	375	30
Operations Phase	Permanent	32	22	52	2

Foreign workers are hired for short term (12-18 months) during the construction phase due to employees having Terminal building skills and technical ability. Foreign workers will train local employees to ensure skills are developed locally.

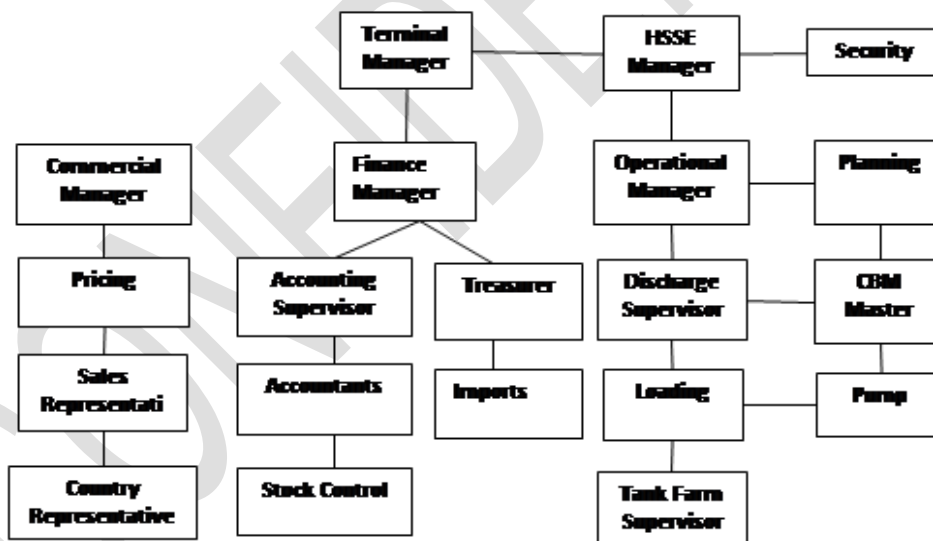
Once the terminal is operational, we expect that this will create over 2,000 full-time employees within the LPG sector. The below shows the expected new employment opportunities within the Tanzanian economy.

### Indirect Employment Creation

Number of new Gas Cylinder filling plants	5
Number of Super Dealers per Filling Plant	5
Number of Dealers per Super Dealer	20
Average staff per Dealer	4
<b>Total Indirect employment creation *</b>	<b>2,100</b>

\* Excludes additional business created from LPG accessibility

Below is the organizational structure of TIEL in its operational phase:



### Health, Safety & Environment

Care for our people, in a healthy and safe workplace, is at the heart of how we run our operations. Our approach is governed by a strict Quality, Health, Safety, Environmental and Security Management (QHSE) system, which is certified by DNV for ISM, ISO 9001, ISO 14001 & ISO 45001.

Tanga International Energy has commissioned an exhaustive assessment from Eco Services (T) Ltd, a registered firm of environmental experts. They are currently finalizing their report for submission to the appropriate authorities.

## - **Social Considerations**

The Environmental Regulations require the ESIA process to engage and incorporate views, opinions or concerns of the project stakeholders which includes communities, institutions or agencies who anyhow affected by the project. In this project all neighbours to the project site, Local Government Authority (Villages, Streets and Wards Offices), Tanga Municipal Council, Tanzania Ports Authority (TPA), Energy and Water Utilities Regulatory Authority (EWURA) to mention a few are fully engaged for their comments. Issues related to local content, gender-based violence, possible positive and negative social impacts related to the project and so forth are discussed, and proposed mitigation measures are recorded. Written and signed stakeholders' comments are then included in the Environmental Impact Statement (EIS) that is submitted to the National Environment Management Council (NEMC) for scrutiny before recommending the project for issuance of the EIA Certificate by the Minister of State for Environment.

## - **Environmental Considerations**

The assessment of environmental impacts during the ESIA is based on the review of the project activities and issues identified during the ESIA scoping phase that involves a literature review, and site environmental studies (both terrestrial and marine environments) to establish baseline conditions by recording measurements of relevant environmental parameters. The assessment acknowledges that any development will have effects on the biophysical and socio-economic environment. The impact assessment has a role to verify that the project does not have any issues of major significance that could not be mitigated such that the proposed project cannot be implemented from the environmental and social perspective. The Environmental Consultants will provide mitigation measures for the potential negative impacts identified through ESIA to reduce their severity and significance to the acceptable levels or use of management controls.

## - **Environmental and Social Management Plan (ESMP) and Environmental Monitoring Plan (EMP)**

The proponent is committed to implementing all the recommendations given in this EIS and further carrying out the environmental auditing and monitoring schedules. The EIS also develops an Environmental and Social Management Plan (ESMP) as well as Environmental Monitoring Plan (EMP) that guides the developer/operator on action items and respective tentative budgets to be considered throughout the project life span. Implementation of the ESMP and EMP are subject to reviews and audits through annual operator self-audits and other environmental audits as initiated by NEMC from time to time down the implementation of the project.

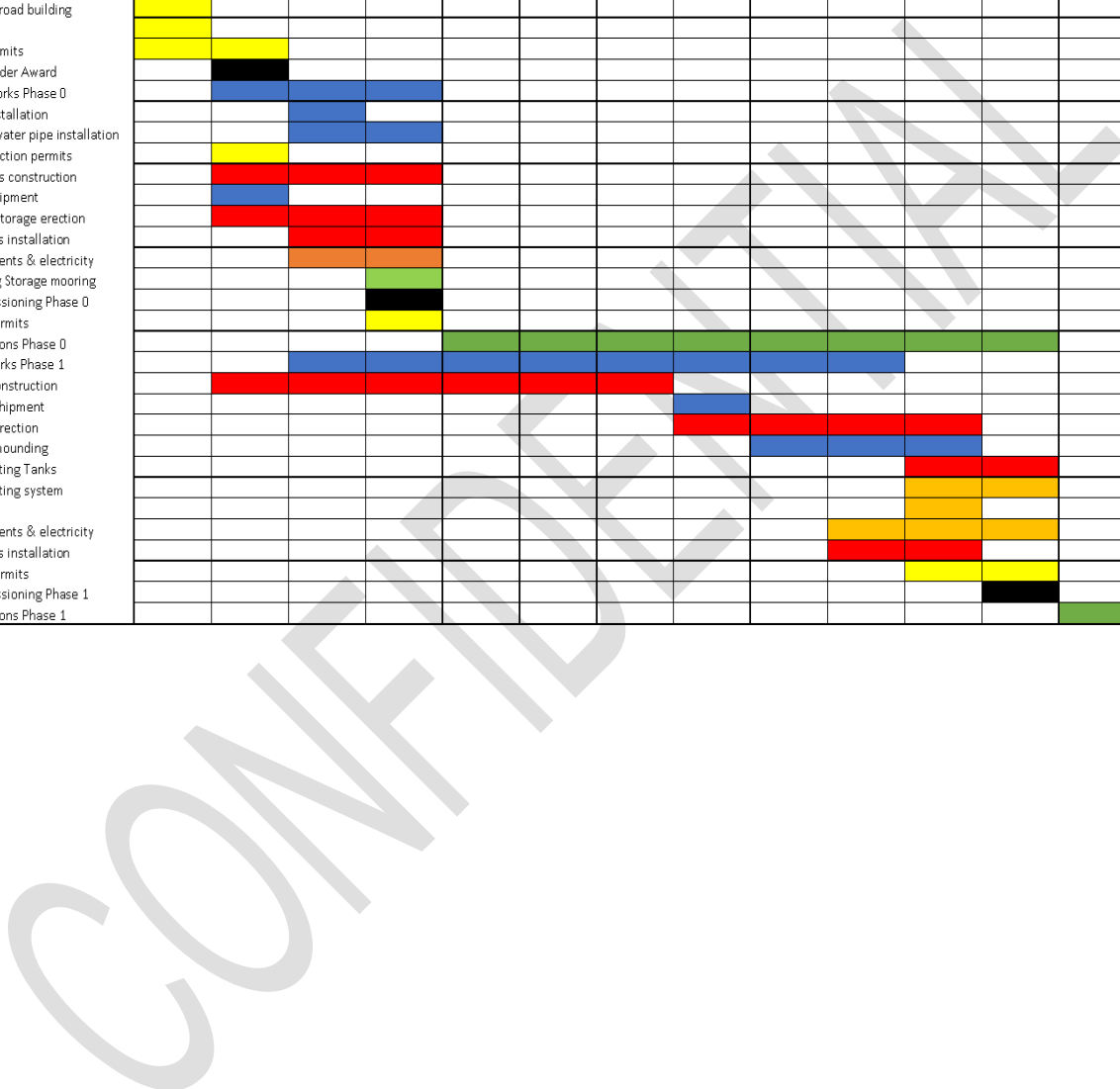
## **Diversity and Inclusion**

We are committed to doing business ethically and transparently, and we do not tolerate discrimination, corruption, or unethical behaviour. Our mother company has a longstanding policy of recruiting the best individual for the role, irrespective of their gender, culture, background, or beliefs. This means we continue to provide an inclusive workplace environment, regardless of location.

Our Sustainability Policies centre around our environmental commitments to safeguarding the Planet, and our commitment to our People to provide a safe, healthy and responsible workplace, all conducted under a corporate governance framework based on transparent and rigorous Processes.

**Implementation Schedule for 20,000T site (Phase 1 and 2 only)**

	2023				2024				2025				2026	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Land Acquisition	Yellow													
Access road building	Yellow													
Fencing	Yellow													
TPA permits	Yellow													
EPC tender Award		Black												
Civil Works Phase 0		Blue	Blue	Blue										
SMB installation			Blue	Blue										
Under water pipe installation			Blue	Blue										
Construction permits		Yellow												
Buildings construction		Red	Red	Red										
Tank Shipment		Blue	Blue	Blue										
Buffer storage erection		Red	Red	Red										
Gantries installation			Orange	Orange										
Instruments & electricity			Orange	Orange										
Floating Storage mooring				Green										
Commissioning Phase 0				Black										
Final permits				Yellow										
Operations Phase 0					Green	Green	Green	Green	Green	Green	Green	Green		
Civil works Phase 1			Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue		
Tank Construction		Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red		
Tanks shipment								Blue	Blue	Blue	Blue	Blue		
Tanks erection								Red	Red	Red	Red	Red		
Tanks mounding								Blue	Blue	Blue	Blue	Blue		
Firefighting Tanks										Red	Red	Red		
Firefighting system										Yellow	Yellow	Yellow		
Pumps										Yellow	Yellow	Yellow		
Instruments & electricity										Yellow	Yellow	Yellow		
Gantries installation										Red	Red	Red		
Final permits											Yellow	Yellow		
Commissioning Phase 1												Black		
Operations Phase 1													Green	Green



## 8 Capital Expenditure and Breakdown

### Investment Costs

Description	Total Cost (US\$'000)	
	Phase 1 and 2	Phase 3
Mobilisation/Demobilisation	800	
Marine CBM	2,500	
Marine Pipe & PLEM	1,750	
Shore Pipes	1,700	
Tanks	38,500	27,000
Firefighting	3,200	
Pipes & Pumps	3,200	
Instruments	1,800	
Gantries	2,200	
Civil Works	5,500	3,000
Buildings	1,200	
Mechanical & Electrics	3,000	
Trucks and LPG transportation tanks	3,000	
Commercial Vehicles	500	
Project Engineering and Execution	7,000	5,000
ESIA & other permit	500	
Contingency (5%)	4,000	
<b>Total</b>	<b>80,350</b>	<b>35,000</b>
		<b>115,350</b>

### Source of Funds

#### Phase 1 and 2

- a) The project will be funded by a mix of equity and debt. We plan an equity injection in 2 steps: US\$ 11 million at the beginning of the project to get it started, followed by a second one of \$25 million. In parallel, when the main phase of construction begins in 2024, we will raise \$65 million of debt, also in 2 steps (to reduce the burden of interest). This gives us a debt-to-equity ratio of 1.8.
- b) We also plan to borrow over a period of 9 years with one year of grace. The repayment schedule includes 7 instalments of \$7 million and a bullet of \$16 million in the last year.

Our conviction is that it is achievable for the following reasons:

- i) the financial standing of the mother company
- ii) the value of the fixed assets which can be pledged and;
- iii) the cash generation capacity of the project (\$20 million of cash from operations in year 10). Trade finance lines, which are very substantial for a storage of this magnitude, will be provided by the Trading division of the group which will act as the main LPG supplier of the terminal. In respect of TIEL, the working capital required will be limited to the inventory required.

### Phase 3

- a) We plan for further expansion in 2029 to ensure that the terminal can receive 1 full VLGC LPG drop and to support further strategic regional expansion. We expect to begin construction of additional 20,000 mT storage on the existing site, which will be funded by further Equity injection of \$11million plus \$24 million borrowing.
- b) Additional infrastructure debt will be obtained to support the expansion with our lenders.

## 9. Financial Projections

### Revenue Assumptions

The terminal will have only one mainstream of revenues based on the services it offers. It will rely on the logistics of the trading division of the Group to bring in the most competitive cargoes.

Our volume forecasts are based on actual volumes in 2021 as well as on current verified trends. We anticipate an acceleration of the consumption growth rate after 2023 when more product is available and when Tanzania can play the role of a regional locomotive.

Although there might be surprises at country level, we believe that, as an aggregate, the regional figures are very plausible. As a matter of example, in 2019, Morocco alone (37 million inhabitants) consumed 2,740 million Tonnes.

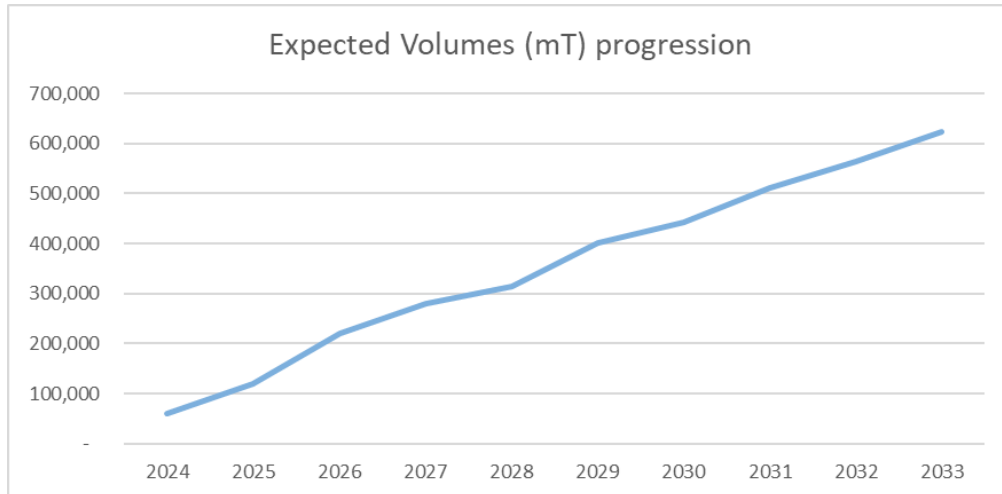
	Population in millions 2019	LPG Volumes in kmT 2019	2021	2023	2032
Tanzania	60	108	143	189	900
Rwanda	11	28	37	49	198
Burundi	10	5	8	15	70
Zambia	15	8	12	18	150
Malawi	17	4	8	15	188
East DRC	50	3	5	10	100
<b>Sub-total</b>	<b>163</b>	<b>156</b>	<b>213</b>	<b>296</b>	<b>1606</b>
Kenya	54	304	402	532	810
Uganda	46	20	30	40	322
<b>Sub-total</b>	<b>100</b>	<b>324</b>	<b>432</b>	<b>571</b>	<b>1132</b>
<b>Total</b>	<b>263</b>	<b>480</b>	<b>645</b>	<b>867</b>	<b>2738</b>

In view of the above, we expect the following volumes (MT) for the terminal:

2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
60'000	120'000	220'000	264'000	303'600	349'140	418'968	502'762	603'314	723'977

*2024 sales relate to 2<sup>nd</sup> Half of 2024 when the initial phase of the terminal becomes operational*

According to our projections, the regional market share of the terminal would be of 18% in 2032, which we believe is a conservative assumption.



**Market strategy**

Our project is an infrastructure project which takes a view on regional economic and market growth over a minimum of 10 years. Because of its size, it is designed to target the entire region. It relies completely on product natural demand. We do not intend to develop marketing campaigns as this is the function of OMCs. The asset we are building is here to provide product and service to marketing and distribution companies which invest in filling plants, transport fleets, cylinder pools and dealer networks.

We rely on our price advantage, our service package and storage capacity to convince customers to send us their trucks for loading. In this respect, the absence of traffic congestion in Tanga is also a substantial advantage as it improves the turnaround time of their fleet.



The map above shows the core of our target markets. Furthermore, we believe we can also reach Zambia (the oil market of Zambia is currently served in great proportion from Dar Es Salaam) and the Eastern part of the DRC.

## Projected Financial Statements

The financial projections in this business plan are based on a case basis that uses the combination of key assumptions to derive the following financial statements:

- (a) Projected Income Statement;
- (b) Projected Balance Sheet; and
- (c) Project Cash Flow.

### Projected Income Statement

USD'000	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Revenues</b>	0	3,000	6,000	11,000	13,200	15,180	17,457	20,948	25,138	30,166	36,199
<b>Operating Costs</b>	500	6,502	12,251	3,402	4,009	4,246	4,516	4,921	5,401	5,960	6,626
<b>EBITDA</b>	(500)	(3,502)	(6,251)	7,598	9,191	10,934	12,941	16,027	19,737	24,205	29,573
Depreciation	0	0	0	3,214	3,214	3,214	3,214	3,214	3,214	3,214	3,214
Interest	0	0	0	4,550	4,060	4,410	4,760	4,270	3,780	3,290	2,800
<b>EBT</b>	(500)	(3,502)	(6,251)	(166)	1,917	3,310	4,967	8,543	12,743	17,701	23,559
<b>Taxes</b>	150	1,051	1,503	(632)	(575)	(993)	(1,490)	(2,563)	(3,823)	(5,310)	(7,068)
<b>Net Income</b>	(350)	(2,451)	(4,747)	(798)	1,342	2,317	3,477	5,980	8,920	12,391	16,491

- The above table shows the main financial elements of the terminal's operation. We chose not to build any inflation into the model as it requires additional assumptions (difficult to make) which can rapidly distort the results in one direction or another.
- The first 2 years of operation from 2024 are EBITDA negative as the company is growing.
- The EBITDA numbers are robust and increase steadily in line with volumes, reaching \$30 million in year 10 of the project.

### Projected Balance Sheet

Amounts in \$'000	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>BALANCE SHEET</b>											
<b>Assets</b>											
Fixed assets	16,070	48,210	80,350	80,350	80,350	103,350	115,350	115,350	115,350	115,350	115,350
Depreciation	0	0	0	3,214	6,428	9,642	12,856	16,070	19,284	22,498	25,712
Inventory	0	4,950	4,950	6,642	6,642	6,642	6,642	6,642	6,642	6,642	6,642
Deferred Tax Asset	150	1,201	3,076	3,126	2,723	2,028	985	0	0	0	0
Cash	(5,570)	3,838	4,703	4,696	2,481	1,410	1,697	3,297	4,609	3,903	5,541
<b>Total</b>	<b>10,650</b>	<b>58,199</b>	<b>93,079</b>	<b>91,599</b>	<b>85,768</b>	<b>103,788</b>	<b>111,817</b>	<b>109,219</b>	<b>107,317</b>	<b>103,397</b>	<b>101,821</b>
<b>Liabilities</b>											
Debt	0	25,000	65,000	65,000	58,000	63,000	68,000	61,000	54,000	47,000	40,000
Capital	11,000	36,000	36,000	36,000	36,000	47,000	47,000	47,000	47,000	47,000	47,000
Retained earnings	(350)	(2,801)	(7,549)	(8,719)	(8,059)	(5,915)	(2,736)	2,798	10,140	14,708	21,888
<b>Total</b>	<b>10,650</b>	<b>58,199</b>	<b>93,079</b>	<b>91,599</b>	<b>85,768</b>	<b>103,788</b>	<b>111,817</b>	<b>109,219</b>	<b>107,317</b>	<b>103,397</b>	<b>101,821</b>

Due to the strength of Petredec's global trade finance lines and the fact that TIEL does not plan to extend credit to its customers (due to the "Free On Truck" sales model), the working capital requirements are limited to the average value of the dead inventory.

The Net Equity (Capital plus Retained Earnings) of the company grows from \$10.6 million in year 1 to \$68.8 million in year 10 after an \$8 million distribution of dividends.

## Projected Cashflows

Amounts in \$'000

CASH FLOW	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EBT	(500)	(3,502)	(6,251)	(166)	1,917	3,310	4,967	8,543	12,743	17,701	23,559
Depreciation	0	0	0	3,214	3,214	3,214	3,214	3,214	3,214	3,214	3,214
Change in WK		4,950	0	1,692	0	0	0	0	0	0	0
Tax Payment			(372)	(682)	(173)	(298)	(447)	(1,578)	(3,823)	(5,310)	(7,068)
Cash from Operations	(500)	(8,452)	(6,623)	674	4,958	6,226	7,734	10,179	12,134	15,605	19,705
Capex	16,070	32,140	32,140	0	0	23,000	12,000	0	0	0	0
Equity In	11,000	25,000		0	0	11,000	0	0	0	0	0
Debt in	0	25,000	40,000	0	0	12,000	12,000	0	0	0	0
Debt repayment	0	0	0	0	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Debt Outstanding	0	25,000	65,000	65,000	58,000	63,000	68,000	61,000	54,000	47,000	40,000
Interest	0	0	0	4,550	4,060	4,410	4,760	4,270	3,780	3,290	2,800
Cash from Financing	11,000	50,000	40,000	0	(7,000)	16,000	5,000	(7,000)	(7,000)	(7,000)	(7,000)
Dividends	0	0	0							4,000	4,000
Net Cash Flow	(5,570)	9,408	865	(8)	(2,214)	(1,072)	287	1,601	1,311	(705)	1,638
Cash Opening Balance	0	(5,570)	3,838	4,703	4,696	2,481	1,410	1,697	3,297	4,609	3,903
Cash Closing Balance	(5,570)	3,838	4,703	4,696	2,481	1,410	1,697	3,297	4,609	3,903	5,541

- Strong cash flows generated allow the project to service its debt and maintain growth. Even with additional debt raised in 2028 and 2029, there is enough cash to start paying dividends in year 9.
- Unit margins are rather standard and market-driven, the model is extremely sensitive to volumes but, as discussed earlier, our assumptions are on the conservative side.

## 10. Conclusion

The Tanga terminal project is a typical infrastructure project which will provide good returns not only to its shareholders but also to the Tanzanian society as a whole.

It is a feasible project based on very strong foundations: excellent location, growing market, independent import facilities and large storage capacity.

However, it relies heavily on its parent company to provide the financial backing for its early years as well as its logistics know-how to get access to competitive and reliable imports.