

# Near Shore Resources Investment Opportunity

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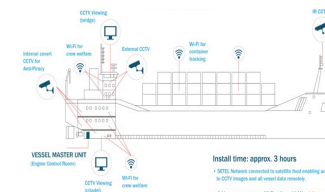
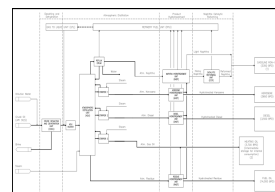
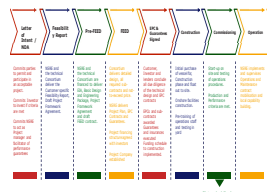
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# Project Summary



- **The Market:** Countries in Middle East and Africa with existing commercial ports, none or insufficient refining capacity, who import significant volumes of refined products at premium prices. These countries cannot attract foreign investment for a range of security, political and financial reasons.
- **The Project:** Develop the first of many **mobile modular** refinery vessels located near-shore, mitigating much of the risk associated with an on-shore facility. The vessels will be cost competitive compared to alternatives and will offer investment and utilisation flexibility not available with an onshore plant.
- **Developer:** A five company international engineering, marine and security consortium, led by Near Shore Resources Enterprises Ltd (a Dubai based EPCM company).
- **Location:** There is an initial target country and there are a total of 19 countries that are prime candidates for the first vessel.
- **Investor Returns:** Equity Cash on Cash Multiples 5+ are envisaged, Initial equity required for FEED \$28 million.
- **Project Costs:** \$US 574 million



- **Corporate Structures:**

- NSRE Project Development Company established, Jebel Ali Freezone (Feb 2015)

- **Agreements:**

- Heads of Agreement with Consortium Partners in place to end 2016
- Consortium Framework Agreement in progress
- Draft LoI with first customer, expect execute early June 2016

- **Technical:**

- Feasibility Study completed by consortium – project feasible confirmed, costs within range
- Basic Integrated Design and Engineering Package for first vessel completed

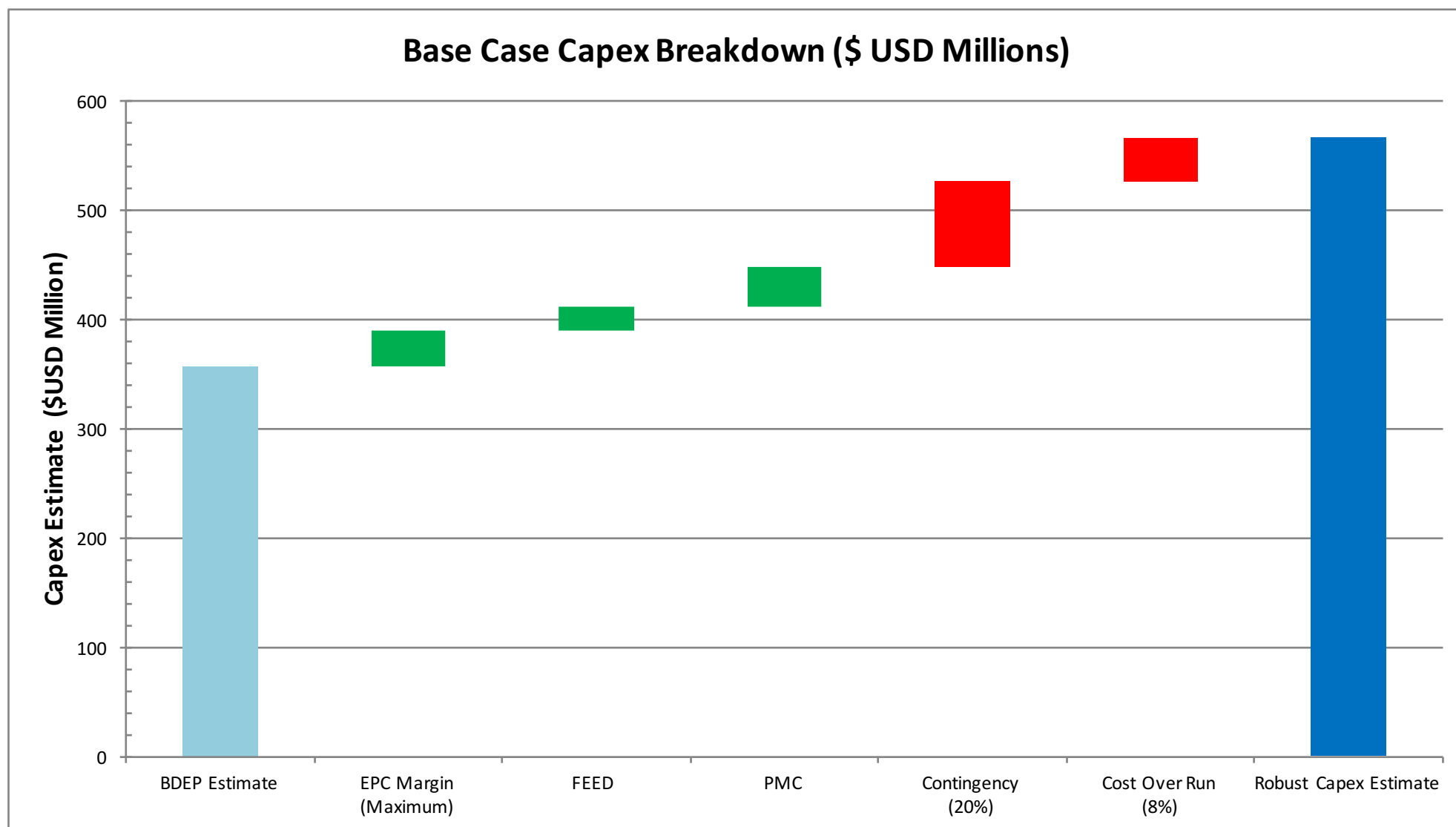
- **Commercial:**

- Project Financial and Economic Models developed
- NSRE budget and cashflow model developed
- Business Plan submitted to first customer (April 2016)
- Parallel negotiations with equity providers ongoing

- **Intellectual Property protection:**

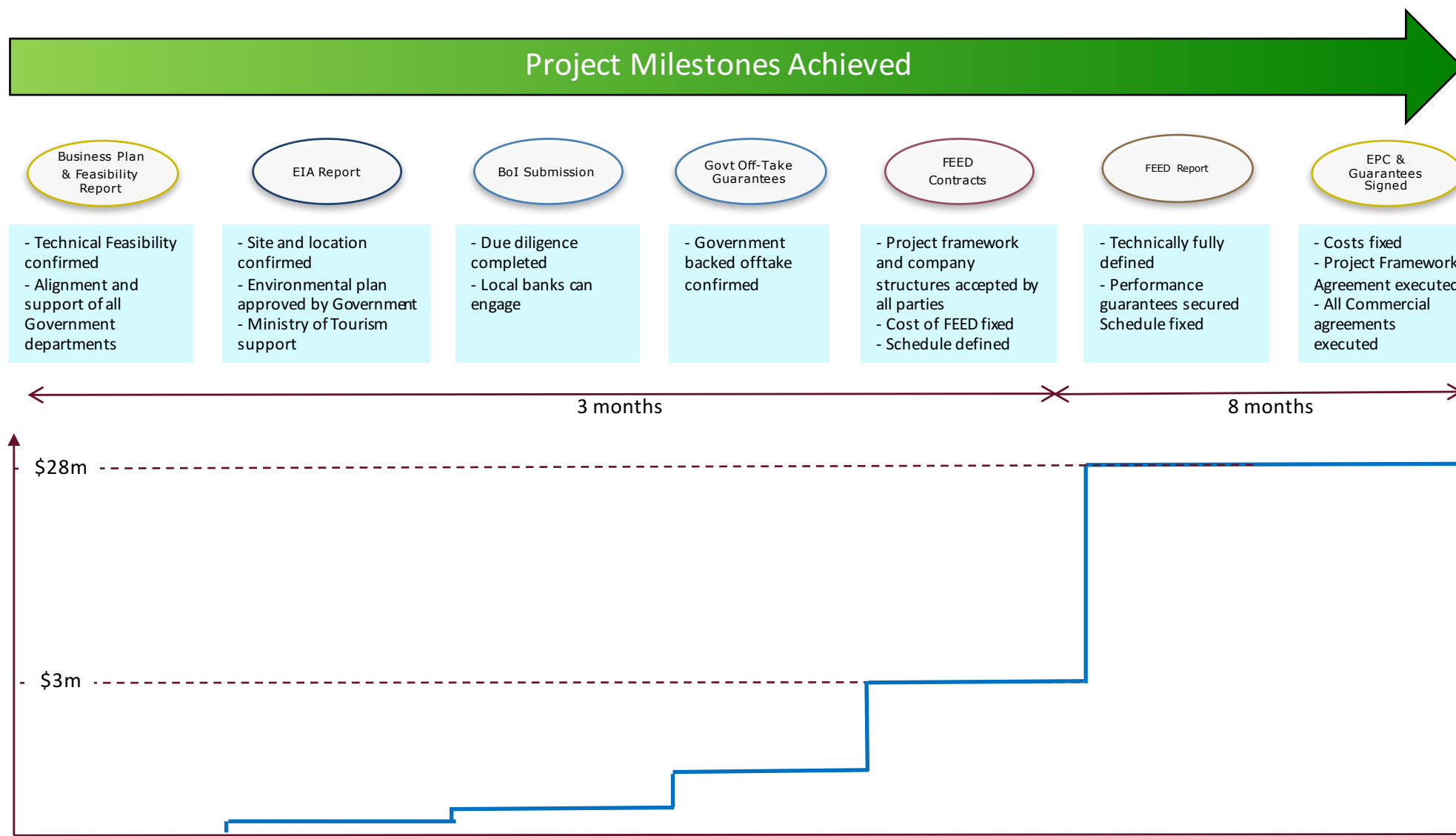
- Keltie / K2 engaged as Intellectual Property advisors. IP strategy in place
- NSRE and Consortium IP Holding company NSRT Ltd UK established (Oct 2015)

# Total Capital Costs – Base Case Scenario



1. NSRE seeks Equity funding in total estimated at \$110-120 million.
2. NSRE seeks \$28 million funding for the first round of equity fundraising phase. (Payable in two tranches: (\$3mln cash injection and \$25 million commitment in accordance to a payment schedule).

# Key Project Investor Milestones – Project Phases



# Financial Summary – Project Cost to EPC & Guarantees Signed - \$M USD



TITLE	Cat.	DESCRIPTION	PRESENT TO JUNE 2016 PRE-FEED	JULY TO FEBRUARY 2017 FEED	TOTAL TO Q1 2017 (EPCs*)
FEED	F.1	Vessel and Moorings	0.0	3.0	3.0
	F.2	Classification of vessel	0.0	1.0	1.0
	F.3	Refining and storage facilities	0.0	7.5	7.5
	F.4	Security, safety and environmental protection	0.0	1.6	1.6
		<b>SUBTOTAL</b>	<b>0</b>	<b>13.1</b>	<b>13.1</b>
OWNERS COST	OC.1	Employee / Director Costs	1.6	4.7	6.3
	OC.2	Travel + Expense	0.2	0.3	0.5
	OC.3	Incorporations and Office Facilities	0.1	0.1	0.2
		<b>SUBTOTAL</b>	<b>2.0</b>	<b>5.1</b>	<b>7.0</b>
3rd PARTY SUPPORT	3P.1	Legal, Technical	0.4	0.9	1.3
	3P.2	Project Management	0.4	0.9	1.3
	3P.3	Performance Assurance and Guarantees	0.0	2.8	2.8
		<b>SUBTOTAL</b>	<b>0.8</b>	<b>4.6</b>	<b>5.4</b>
CONTINGENCY (10%)	CY.1		0.2	2.3	2.5
		<b>GRAND TOTAL</b>	<b>3.0</b>	<b>25.0</b>	<b>28.0</b>

\*EPC Contracts and Guarantees signed, project largely de-risked at this point.

- **Country 1**

- **Presented project to PM, Deputy-PM (seven meetings to date)**
- **Deputy PM appointed as project champion and leader**
- **Project land allocation agreed and in process**
- **Incorporation into Port Master Plan agreed and ongoing**
- **MoU for project, crude supply and product off-take, between NSRE and Government, tabled with Ministry of Industry and Commerce on 12<sup>th</sup> February 2016.**
- **Presentation to Council of Ministers 6<sup>th</sup> May.**
- **Basis of Design for specific design completed.**
- **LoI , Business Plan and Feasibility Report submissions, 15<sup>th</sup> May.**
- **LoI to be signed June.**
- **Local company incorporation, ongoing**

Special situation first customer:

- Our first customer has a specific low-sulphur bunker fuel opportunity that adds significant additional value to the generic base case offering
- The 2020 Marpol VI marine fuel standard MUST be met by fuels sold by that time. Our customer has a major opportunity to capture new market, as competitors are unable to provide the same in the timeframe and even when they do they cannot be cost competitive with the NSRE unit.

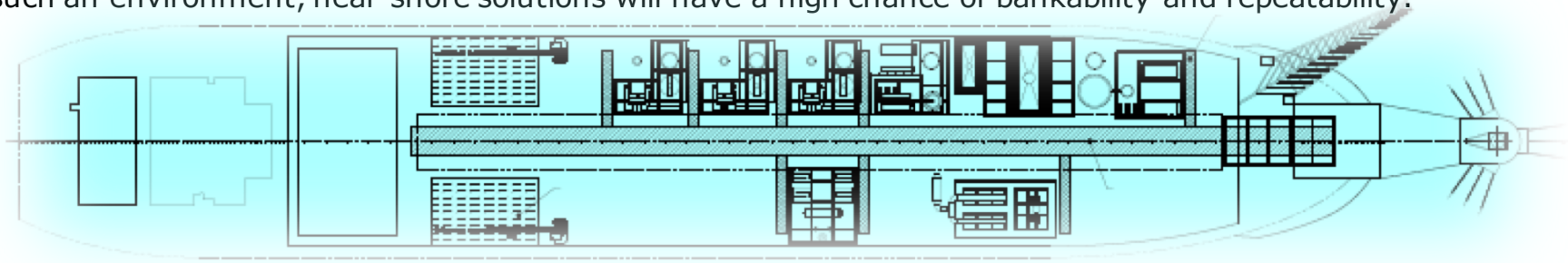
- Further 3 countries being developed
- Market analysis study has been completed and a further 15 countries are identified as potential customers



# The Opportunity



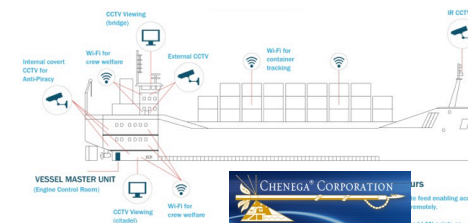
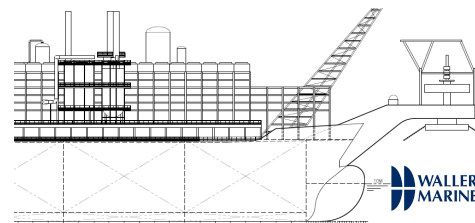
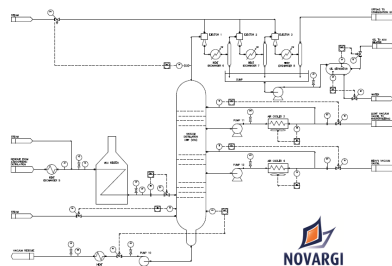
- Many countries are unable to attract foreign direct investment due to poor credit rating and/or civil unrest threatening assets. 52 countries are below the line of credit worthiness and another 56 countries are not being rated.
- In MENA and Africa there are 39 countries that have no refining capacity, and 32 countries that import significant quantities of refined products. Africa is the world's largest importer of refined products.
- Conventional economics suggest that it is best to build refineries close to areas of product demand rather than near to crude supplies. Much of Africa's demand is widely dispersed which makes it difficult to select optimal locations for African refineries, so that economies of scale can be realised. It is also expensive to ship the small volumes of product required by individual countries. Small scale, low complexity, refining is the most likely to succeed in meeting the rising demand.
- Most urban centers are sited on a coast or estuary, to provide trade access. In MENA/Africa 48 countries have at least 1 port.
- A **mobile modular** refinery vessel located near-shore, mitigates much of the risk associated with an on-shore facility.
- An asset need not be deployed for the full life-cycle in one location or under one contract.
- Customers will be able to obtain a reasonably flexible slate of key products, such as heavy fuel oil, diesel, gasoline and LPG. Shifts in product splits and qualities can be achieved at a fraction of the cost and time required for similar capacity onshore facilities.
- Customers will be able to specify training programmes that build local capability for future independence.
- In such an environment, near-shore solutions will have a high chance of bankability and repeatability.




See References: 22

# Advantages of Mobility and Modularity

- **Mobility** enables greater security and removes the risk of losing the investment, thus increasing uptime (utilisation) and reducing insurance costs.
- **Modularity** is flexibility, customization, simplification and most importantly, a significant reduction of cost.
- **For the Investor:** The Mobility/Modularity Factor overcomes the traditional requirement of high CAPEX, stable economy and the high complexity required to make a Refinery profitable. A wider range of potential lenders and commercial structures can be considered.
- **For the Customer:** The Mobility/Modularity Factor fundamentally changes the underlying economics by providing significant savings compared to the "importation of products" or "servicing a huge debt" for building a Refinery.



Petrofac 

# Commercial Attractiveness – Why Near Shore



- The “First Refinery Conundrum”
  - Low demand economies cannot justify large refineries
  - Small refineries onshore do not get invested due to long pay-back times, high maintenance costs and painful National fiscal burden
  - An NSRE mobile unit resolves this conundrum
- NSRE Modularisation allows for the first time, economic scale on a vessel
- Land use advantages (land is precious, make the most of it):
  - Greatly reduced land area required
  - Reduced construction disruption
  - More space available for bunkering & storage (and other developments)
- Cost advantages:
  - Low cost re-configuration can be done in cheapest place
  - Reduction in de-commissioning costs
  - Reduced insurance premiums
  - Greater range of interested investors
- Quality advantages:
  - Full control on product quality, delivered reliably
  - E.g. Low sulphur fuels meeting new international standards
- Construction, Environmental and Operational risks are more easily managed

# Competition

- At this moment there are no known examples of a mobile modular refinery vessel in commercial operation anywhere.
- Large players so far have not entered this market due to its perceived small scale and historical perceived high unit costs.
- Smaller companies have neither identified the nature and scale of the market described, nor more importantly been able to bring together the normally unrelated technologies required.

## Main potential competitors:

### SERVICE COMPANIES / MARINE YARDS / FABRICATORS:

- Keppel, Hoegh, Maersk, HQC, Zeton, Chemex, B&Veatch,
- Ventech, Seadrill, Haliburton, TransOcean, many many others

### REFINED PRODUCTS TRADERS

- Vitol, Trafigura, Glencore, Cargill, Gunvor, etc
- IOCs
- Shell/XOM/Total/BP/CVX/OXY/ENI/SASOL

### GOVERNMENTS/NOCS/FUNDS:

- Korea/China/France/Japan/etc.
- World Bank / USAID / EU Fund
- Aramco/ADNOC/SINOPEC/Petronas
- Mubadala/SWF/Regional Funds
- So far there is no evidence that any collaboration is forming. In addition, NSRE has created additional differentiation by including in a security and intelligence element which will assist in de-risking all aspects of unit construction, delivery installation and operations.
- Finally, the early identification and filing of shared IP will not only protect the integrated concept from overt competition but will develop a separate revenue stream through IP licensing.

## Analysis of potential investors in African Refineries

Source: Gaffney Cline

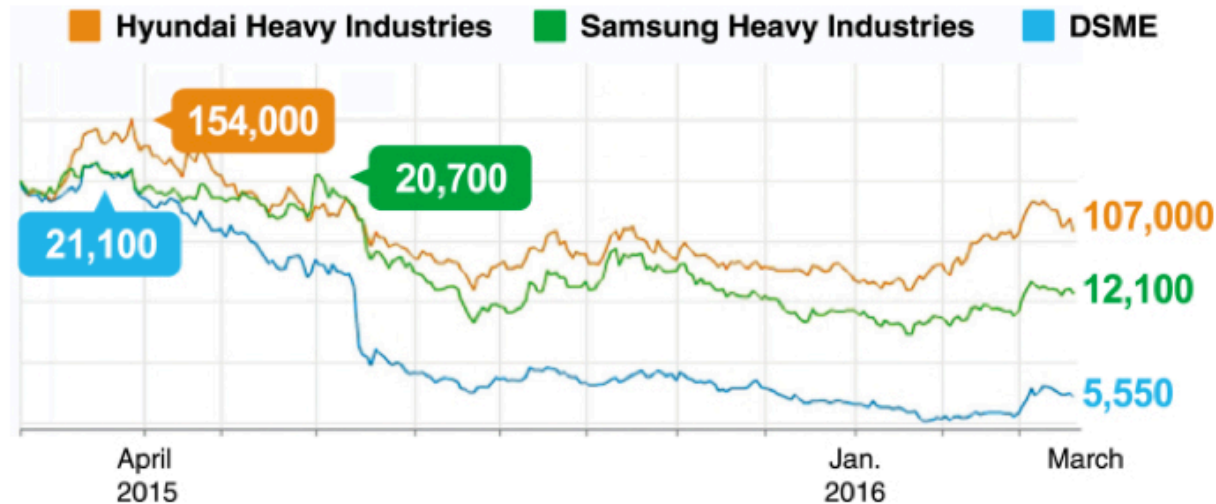
	Motivation to Develop Refineries in Africa	Technical Ability to Develop Refineries' in Africa	Financial Strength/Ability to Fund Refineries in Africa
Independent Refiners	Medium	Good	Poor (although some exceptions exist)
NOC's (African)	Good	Medium (variable)	Medium (variable)
NOC's (International)	Medium	Good (variable)	Good (variable)
IOCs	Poor	Good	Good
E&P Companies	Medium	Poor	Poor

- Worldwide refineries are typically owned by independent refiners, NOCs or IOCs.
- In much of Africa NOCs dominate (60%). Tend to be motivated but not to have experience or funds.
- IOCs have little appetite for new refinery investment, tending to divest due to over capacity in major centres, African refining is too small scale.
- Independent refiners only feature in Africa on a small scale – (average capacity is 54,000 b/d)
- Medium sized E&P companies may be interested to monetise discoveries to meet the increasing demand, but without integrated capability they find this difficult.
- The most prospective combination to displace expensive imports is for Independent Refiners to work with NOCs. None of the main competitors opposite meet this criteria – **NSRE does !**

See References: 6

# The time is Now ! (Marine Yards)

## Shipbuilders' stock prices (Unit: Won)



Korean shipbuilders, whose exports of those ships used to account for more than 8 percent of the total exports starting in the 1980s,... but now with the onslaught of a global economic slowdown, fiscal austerity and unorthodox credit easing, luck seems to have run out for the trio – Hyundai Heavy Industries, Samsung Heavy Industries and Daewoo Shipbuilding & Marine Engineering – and 20 other listed shipbuilders and equipment-makers.

Saddled with accumulated losses of over 7 trillion won amid a series of earnings shocks following suspensions of global shipbuilding and offshore projects, the Korean trio leading the shipbuilding index has been on a downward spiral since 2014.

There are more than 320 ships lying idle, accounting for over 6 percent of total ships globally, according to Shinhan Investment and Lloyd's List.

"There isn't any good news coming either from shipbuilders or shipping companies as they enter fiscal 2016," said Kim Hong-gyun, an analyst at Dongbu Securities.

Bunker Ports News – Worldwide, 22 March 2016

# The time is Now ! (Fabrication Cost)

## Steel 2008-2016 | Data | Chart | Calendar | Forecast | News

Steel lost 220 USD/MT or 70.97 percent during the last 12 months from 310 USD/MT in March of 2015. Historically, Steel reached an all time high of 1265 in June of 2008 and a record low of 90 in March of 2016.



Economic slowdown in China has dealt a massive blow to the global steel industry. China's steel industry is still reeling under overcapacity with barely any signs of recovery. The 6.9% growth for 2015 was a marked deceleration from the 7.3% gain last year and its weakest in 25 years. Steel usage in China is expected to dip 2% in 2016 according to the World Steel Association's short range outlook published last October.

In addition, the steel industry is faced with dwindling investments, financial market turbulence and geopolitical conflicts in many developing regions. The industry's low-growth outlook will persist until other developing regions of sufficient size and strength can support another major growth cycle.

Zack Analysts, 21 January 2016



# NSRE Oil Project Consortium Profiles



To realize this opportunity NSRE, as the leading Project Developer, has created a Technical Consortium as follows:

- An industry leading marine architect with over 30 years experience in all aspects of ship and process technology integration; **Waller Marine Corporation.**
- An highly experienced licensor and fabricator of modular refining, processing and GTL units; **Novargi Industries SL.**
- Two world leading security, surveillance and intelligence companies providing the latest asset protection and technologies: **Chenega Corporation.**

In addition, to assist NSRE in Project management during development/construction and operational aspects of the modular mobile refinery, NSRE will engage **Petrofac**, a leading FTSE 250 company, providing integrated services across the oil and gas asset life cycle in 29 countries worldwide.

# Oil Refinery Project Companies



## NSR Group

Project Developer



Subsidiary – IP Holding Company



## Consortium Technical and Service Partners



EPC Management

Modular Technology  
Refinery Design  
Process Fabricator



Security, Surveillance,  
Intelligence & ER  
Technologies



Marine Architect  
Marine Services  
Vessel Fabricator

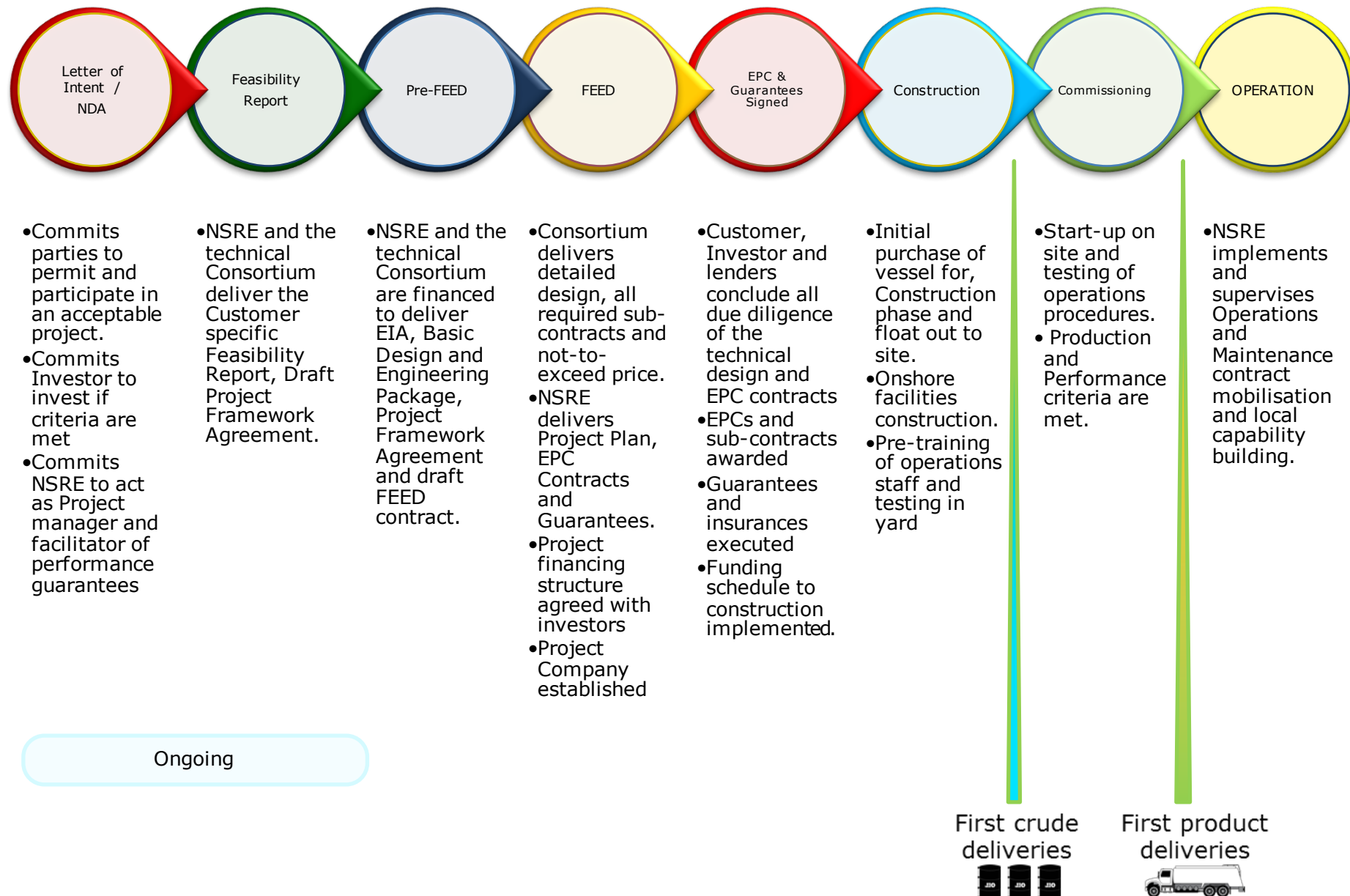


Project Management  
Operations and  
Maintenance





# Near Shore Refinery Project Phases and Commitments



# Overview of Near Shore Refinery project phases and timeline



# Key Project Investor Risks – Project Phases



Project Milestones	Stage	Milestones	Cost (\$US)	Key Risks	Mitigation	Commitments Arising
	EIA	Demonstrate project meets requirements of the Environmental regulations and acts.	\$ 250,000	Adverse publicity due to project becoming public	Engage PR agency Implement stakeholder mgt plan	No objection Environment Ministry
	Bol Submission	Government due diligence on project financing partners and economic case	\$ 250,000	Investors not acceptable to Bol	Work with industry experienced investors Early informal testing	No objection Board of Investment
	Government backed off-take agreement	Full “bankability” of project.	\$ 500,000	Delay in securing Request to enter binding contracts with marketing cos. Request to replace all current imports Need for institutional support	Engagement with major traders Offer options on product slate Work with investors linked to institutional lenders	Revenue stream conditionally committed
	Project framework agreements, FEED contracts	Identify and lock in all players contractually Fix FEED cost & schedule Define guarantees and insurances	\$ 2 m	Delay in securing	Properly resource this phase with legal and technical staff	Investors commit to FEED Investors conditionally commit to remaining equity and debt funding
	FEED	Detailed design Conclude project financing package, required for debt fundraising Conclude supply agreement	\$ 25 m	Capex growth Schedule growth Investor not meeting cash calls Negative change in Mauritius credit rating	Base case economics, includes sufficient contingency and robustness Strong remedy in investor agreements Consider collateral agreement for credit protection	Investors commit to remaining equity funding Crude supply contracts secured
	EPC & Guarantees Signing Date	Fix price and schedule for project Lock in guarantees and insurances	Part of FEED	Single source leads to high EPC margin	Potential second unit commitment	EPCs committed Project management committed

# Key Project Risks: Commercial & Financial



Risk	Consequences	Control	Mitigation
Time over-run	Delay in sail-away. Delay in start-up. Delay in production. Delay in revenue.	Vessel refit and process module fabrication in established yards and proven partners. Modular construction in yards increases quality control. Vessel and top-side will be constructed simultaneously and independently.	NSRE will maintain PMC to manage marine contractor and refinery fabricator. Construction will be insured for delivery schedule and process guarantee.
Cost over-run	Project ROI time-line extension. Investor returns delayed. Potential erosion of profitability.	Vessel refit and process module fabrication in international standard yards with experienced marine epc. Technology is proven and execution with established process fabricators and supply chain.	Agree LSTK contract & process guarantee on vessel from fabricator and marine project manager. Secure remedy from marine EPC contract and/or suppliers depending upon source of over-run.
Tariff payment failure	Client is in default of contractual obligations. Investor returns are compromised.	Crude supply contract and tariff payment are guaranteed in contract with government and penalty clauses defined. Back to back supply-or-pay and take-or-pay contracts will be put in place.	Apply penalties. Terminate contract and remove vessel to another customer.
Crude Supply contract fails (reduced or default or off-specification crude supply)	SPV fails to meet take-or-pay obligations Vessel must turn-down or shut-down	Secure Supply-or-pay contract with crude supplier with appropriate penalties	Crude supplier must pay for lost production revenue
Marketing off-take contract fails	Product storage full. Vessel must turn-down or shut-down.	Secure contractual terms on take-or-pay basis and to allow for alternative sale of product in case of default.	Apply contract take-or-pay terms. Sale of product to spot-market.
Government fails	Supply and off-take contract are in default. Vessel security at risk.	Secure contractual protection at EPC & Guarantees signed stage. Maintain vigilance of political stability and vessel security with Chenega.	Secure forward payment terms in contract. In the event of failure to resolve threat, move vessel to international waters. In the event of significant delay, re-deploy vessel.
Corruption in local business or government.	Irregular demands/extortion. Absent ethical business practice. Reputational risk to NSRE and Investor. Vessel security at risk.	Ensure NSRE Code of Conduct incorporated into contracts and exit strategy and tactical resolution are protected. Full diligence before EPCs signed, on risks/threats to operations. Maintain vigilance with Chenega	Secure forward payment terms in contract. In the event of failure to resolve threat, move vessel to international waters. In the event of significant delay, re-deploy vessel.
Investor does not meet cash calls	Construction halts. Contracts with fabricators and suppliers cannot be paid	Secure contractual terms that deal with default and include forward payment terms. Ensure fabricator and supplier terms provide for possible remedy	Apply contract and seek remedy in courts if resolution fails. Use "bankability" to bring in alternative funding.
Vessel fails to meet production volumes or product assay	Off-specification product quality or volumes	Secure contractual performance guarantees with fabricator and marine EPC contractor.	Apply contractual obligations with fabricators and marine EPC firm. Debottleneck vessel.

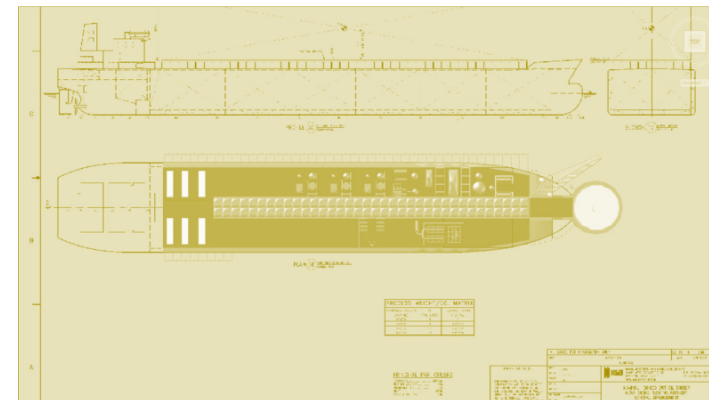
# Environmental Commitments all Projects



- All projects will conduct a Strategic Environmental Assessment and an Environmental Impact Assessment, including baseline surveys.
- All designs and operating practices will meet accepted International Standards:
  - Atmospheric Emissions, e.g. WHO emissions standards;
  - Noise;
  - Solid wastes;
  - Contaminated Land and Ground Water;
  - Near shore marine protection, e.g., zero overboard, heat management.
- Environmental measures already incorporated:
  - Refining vessel will have ZERO flaring.
  - Refining vessel will capture expelled gasses and recycle, resulting in close to zero harmful emissions.
  - There will be North Sea standards set for over-board discharge - i.e. ZERO
  - Refining vessel construction will take place in specialist yards and be delivered completed to the location.
  - Throughout construction and operations regular environmental audits will be conducted.
- Design will be “future-proofed” against known incoming global standards, e.g. sulphur content.



- From the vessel owner perspective (e.g. Private Equity, Funds, Lending Institutions) mobile modular refinery vessels provide a number of benefits;
  - A vessel can be constructed in a controlled mature engineering yard, thus limiting potential for cost over-run or schedule slippage
  - There are a large number of fixed price recyclable hulls available on the market.
  - The technology and operating procedures are industry standard, no innovative processes are required.
  - An appropriate Equity Multiples can be made with a modest / competitive processing fee.
  - The Vessel can be redeployed and cheaply modified to handle different types of crudes & products.
  - Mobility significantly reduces the risks, and hence the CAPEX premiums, associated with infrastructure investment.
  - After the initial capital is recovered a well maintained asset can be re-deployed numerous times over many years providing a significant long term cashflow.
  - There are no similar vessels in the market today.





- From the customer perspective (e.g. Governments, NOCs) mobile modular refinery vessels provide a number of benefits;
  - At a competitive processing fee, the customer can save millions per annum compared to purchasing refined products from the market.
  - Customers with indigenous production but no available refining capacity will additionally monetize otherwise unsold crude.
  - Quick mobilization of a world-class asset with a dedicated trained operating team.
  - Flexible deployment of multiple plug & play assets to meet local demands.
  - Contractual flexibility to meet preferred Opex vs. Capex balance.
  - Absence of any political pressure commonly associated with aid.
  - Regional ownership and local job creation.
  - Restore economic value to onshore assets, within the security and intelligence envelope of the NSRE managed asset.
- Special situation first customer:
  - Our first customer has a specific low-sulphur bunker fuel opportunity that adds significant additional value to the generic base case offering
  - The 2020 Marpol VI marine fuel standard MUST be met by fuels sold by that time. Our customer has a major opportunity to capture new market, as competitors are unable to provide the same in the timeframe and even when they do they cannot be cost competitive with the NSRE unit.

# How does the Country save money?



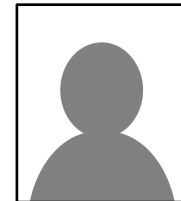
- NSRE small scale, local, refining is more cost effective:
  - Processing locally reduces transportation costs for the heavier fractions of the crude barrel
  - Processing your own crude removes the needs to pay a trader commission or premiums
  - The product slate can be optimised to fit the local demand profile, and can be changed at far lower cost
  - Additional national employment is required to run the local component of the project
- Buying crude is more cost effective than buying products:
  - The source product (crude oil) is traded on transparent international markets reducing scope for supply chain manipulation or fraud, National trading companies can capture value owning the contracts
  - The contract is fixed over a longer period so re-negotiation / tendering risks are reduced
- Receiving lower cost products opens up trading opportunities for local companies:
  - National trading companies can now support marketing and distribution businesses
  - Small scale local exporting becomes a profit making business
- Using actual local data NSRE can provide cost comparisons for customer consideration



# NSRE – Board Directors



- **Iain Blair, PhD, BSc, CEng, FEI, SPE – Business Director:** Iain is a petroleum and production engineer with over 30 years of experience in upstream oil and gas, mainly with Shell International. He has led major projects and global technical functions. He serves on the Middle East Board of the Energy Institute.
- **Ammar Kamel, M.I.A. – Strategy Director:** Ammar has more than 15 years of senior management and executive experience and for the last 2 years, Ammar has focused on developing near shore solutions both technically and commercially.
- **Parmi Kanda, B.A. Hons. Law & Philosophy; LL.M; ACI Arb. F.I.B.A - Legal Director**  
Parmi has 25 years Shell experience covering legal, contractual, commercial, dispute resolution, stakeholder relationship advice, negotiations with host governments and oil & gas companies. Involved in the first Islamic financing documentation in Malaysia. Has extensive experience in compliance and has developed and implemented a robust in-house compliance programme. Prior to Shell he worked for 7 years in London with Moore Stephens & Co and Arthur Young McClelland Moores & Co in accountancy and tax consultancy.
- **TBC, PhD, BSc – Technical Director:** Has 28 years of experience in the petrochemical and downstream oil, & gas industry, working for ICI and Shell. He has spun out and launched a catalyst start-up company in 2000 that remains a thriving privately held enterprise. During the last 6 years he has been in a leading Technical Management role in a FTSE 250 EPC company.
- **Piet Ruijtenberg, BSc, MSc – Development Director:** Piet worked 31 years for Shell. During his career, he had responsibility for exploration operations, venture set up, field development studies, commercial negotiations and new business development. He advises banks and hedge funds on Iraq risk assessments and oil companies on new business projects and oil field developments, is a member of the technical advisory board of Cairn India and non-executive director for Pluspetrol BV and PPL Asia BV.



# Near Shore Resources Group



NSRE Limited is a Jebel Ali Free Zone Offshore Company (170613), Incorporated in Dubai, UAE with its registered office and principal place of business at Office C08, Al Owais Building, Al Rigga Street, Deira, P.O. Box 7191, Dubai, UAE.  
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