



Smart thinking. Safe hands.

THAI ROTARY ENGINEERING PUBLIC COMPANY LIMITED

Updated 02nd February 2022



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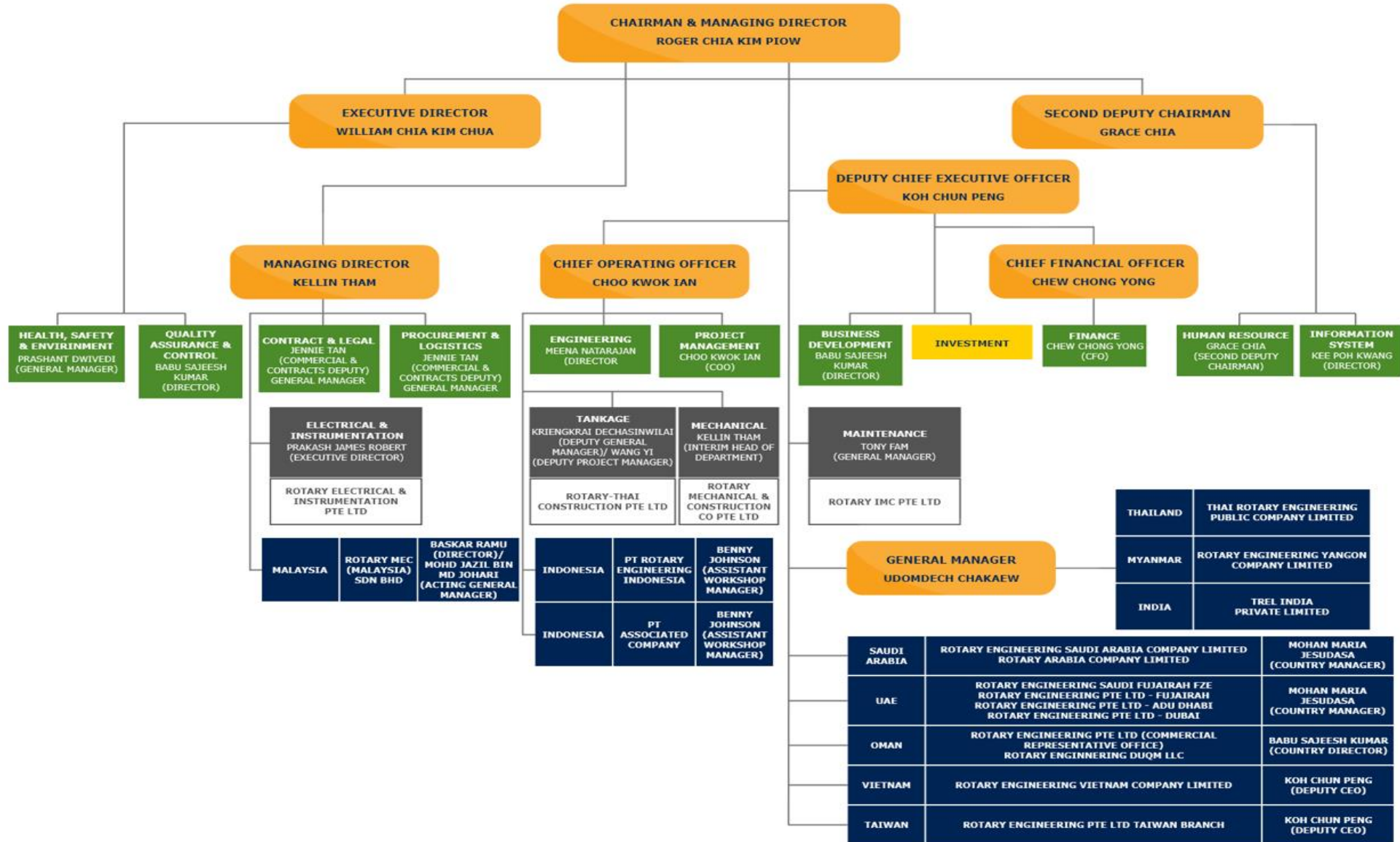
About Rotary



- ✓ ROTARY is one of the region's leading oil and gas infrastructure services companies with extensive international experience offering fully integrated engineering design, procurement, and construction (EPC) services to the oil and gas, petroleum and petrochemical industries.
- ✓ Headquartered in Singapore, Rotary has established a strong presence in the Asia-Pacific region and continues to make its mark as a global player. Established in 1972, Rotary has forged a reputation built on its hallmark traits of providing quality services, within budget, safely and on-time delivery. Today, Rotary boasts a total strength of over 6,000 employees which include a highly and multi-skilled workforce that forms the mainstay of its core EPC services.

About Rotary

Corporate Organization Structure



Rotary Group of Companies



Singapore

- Rotary Engineering Pte. Ltd.
- Rotary Electrical & Instrumentation Pte Ltd
- Rotary Electrical Company (Pte) Ltd
- Rotary IMC Pte Ltd
- Rotary Logistics Pte Ltd
- Rotary Mechanical & Construction Co Pte Ltd
- Rotary-Thai Construction Pte Ltd
- ROIL Pte Ltd
- ROIL Shipping Pte Ltd
- Eastlog Holding Pte Ltd
- Jasinusa Automobile Pte Ltd
- Oro Storage Asset Management Pte Ltd
- Sixty-six Switchgears Co Pte Ltd
- Supermec Pte Ltd

Malaysia

- Rotary MEC (M) Sdn Bhd
- SINGLOBAL (M) Sdn Bhd
- Supermec (M) Sdn Bhd

Indonesia

- P.T. Rotary Engineering Indonesia
- P.T. Rotary Engineering South East Asia
- P.T. Marino Logistics

Slovenia

- Supermec Proizvodnja in Prodaja Elektronike d.o.o

Oman

- Rotary Engineering Pte. Ltd. – Oman
- Rotary Engineering Duqm LLC

United Arab Emirates

- Rotary Engineering Fujairah FZE
- Rotary Engineering Pte. Ltd. – Abu Dhabi
- Rotary Engineering Pte. Ltd. – Fujairah
- Rotary Engineering Pte. Ltd. – Dubai
- Supermec Middle East FZE

Saudi Arabia

- Rotary Arabia Co. Ltd
- Rotary Engineering Saudi Arabia Co. Ltd

Thailand

- Thai Rotary Engineering Public Company Limited
- Rotary Electrical & Instrumentation (Thailand) Ltd
- Calvert Limited

Vietnam

- Supermec Vietnam Co. Ltd
- Rotary Engineering Vietnam Co. Ltd
- Rotary Developments Co. Ltd

India

- Sinmec Engineering Services (India) Private Limited
- Rotary MEC Engineering (India) Private Ltd
- TRELINDIA PRIVATE LIMITED

Myanmar

- Rotary Engineering Myanmar Company Limited
- Rotary Engineering Yangon Company Limited

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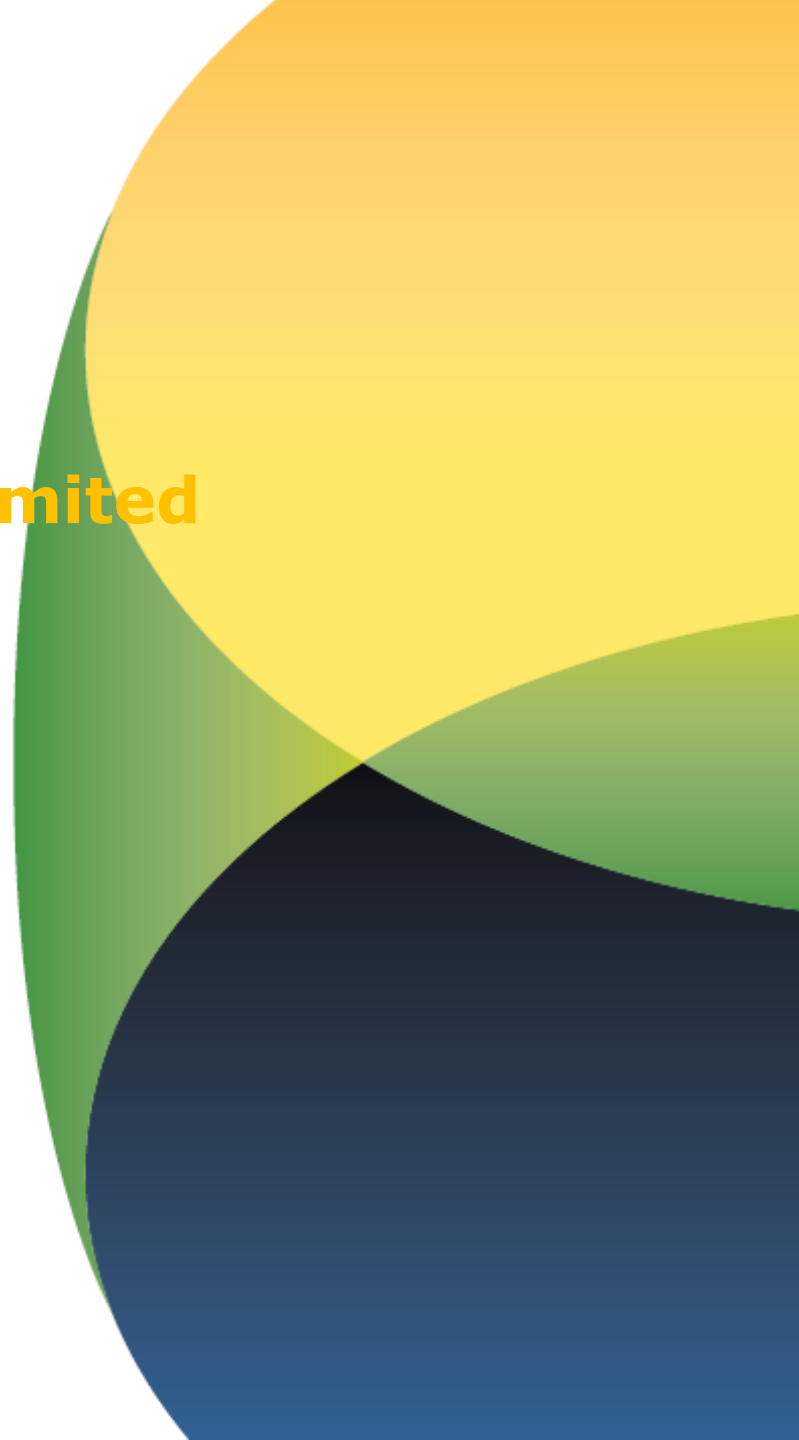
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AT-A-GLANCE



Thai Rotary Engineering Public Company Limited

"TREL"

A subsidiary of Rotary Group of Companies, is well established as an Engineering Design, Procurement & Construction Company to offer a wide range of capabilities in construction, erection & maintenance of tanks for the Oil & Gas and Petrochemical industries.

- ✓ Located in Banchang-Rayong, Thailand, it has grown from a modest shop fabrication set-up to an integrated engineering, procurement and construction ("EPC") company with proven track records in both local and regional markets.
- ✓ With the support of our parent company, we are able to provide full-fledged Engineering, Procurement, Construction and Maintenance services in various scales for projects both regionally and globally.
- ✓ We are certified ISO 9001 & ISO45001, ISO 14001:2015 certified. Our fabrication facility in Rayong is accredited with the full suite of ASME "S", "U" & "U2", and also National Board "R" & "NB" stamps for pressure vessels, S&T heat exchangers, columns, fabrication works.



PHILOSOPHY



Vision

We aspire to be an excellent regional engineering, procurement and construction company specializing in storage terminals and process related facilities within the petrochemical and oil & gas industries.



Mission

To provide safe and quality services that consistently meet our clients' needs and expectations through excellence in our operations; and generating optimal returns for our stakeholders via sustainable business growth with productivity.

HSE Culture

T

Take 5

Understand and perform by always considering

1. What we are going to do.
2. How we are going to do.
3. Identify hazards
4. How to control & communicate
5. Do the job safely.

R

Report

Promote the working environment that employees are free to report all incidents/problems regarding OHS & Environment.

E

Exercise

Promote good health and knowledge

L

Leadership

Demonstrate leadership for OHS & Environment within the roles & responsibility of each employee.

S

Safety

Ensure that you and colleagues work safely at all time.

A

Awareness

Having awareness, not hesitate to request to stop work or request to correct in case of observing any risk.

F

Family

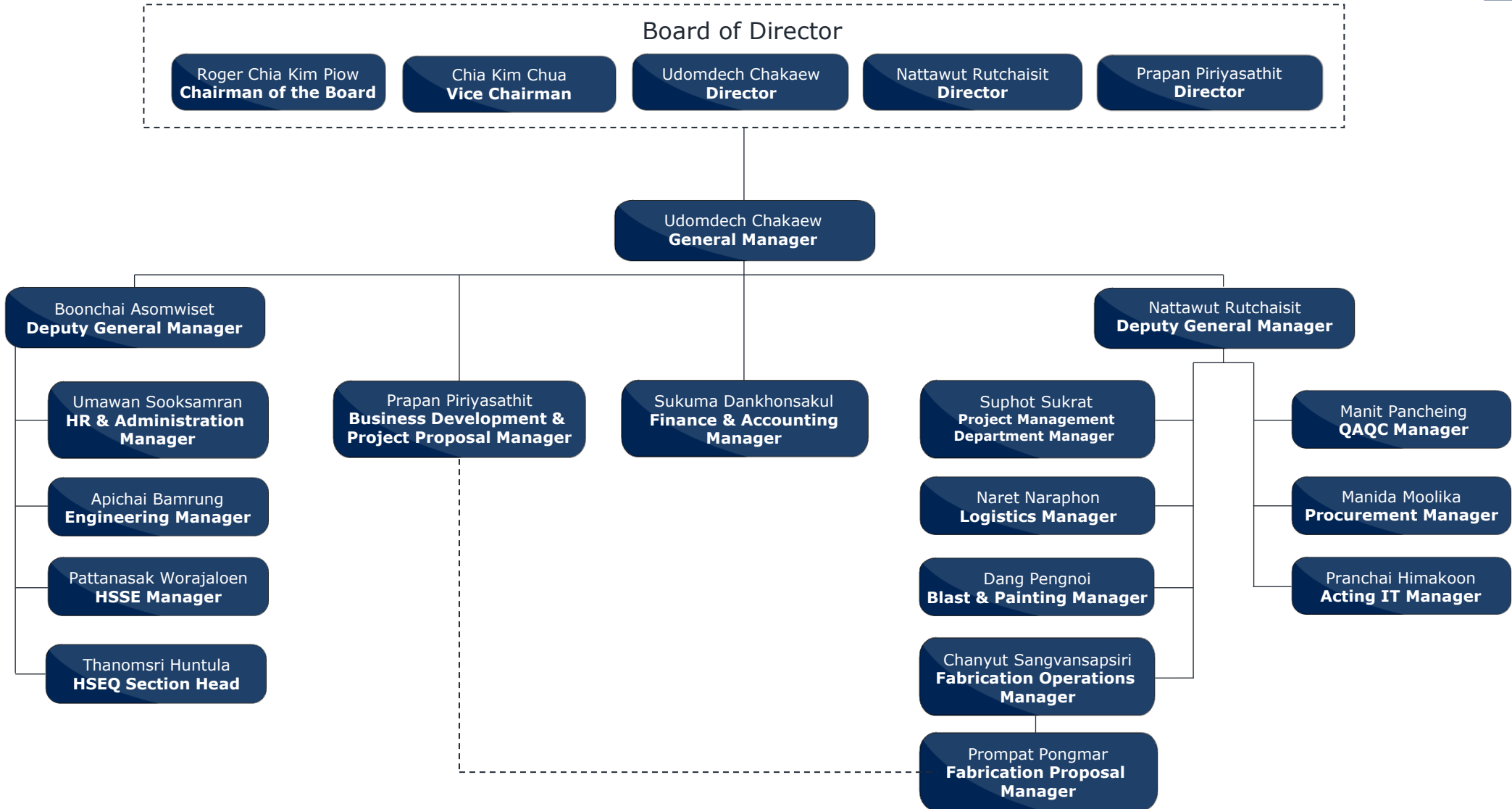
Taking care of each other for safety like taking care of your family.

E

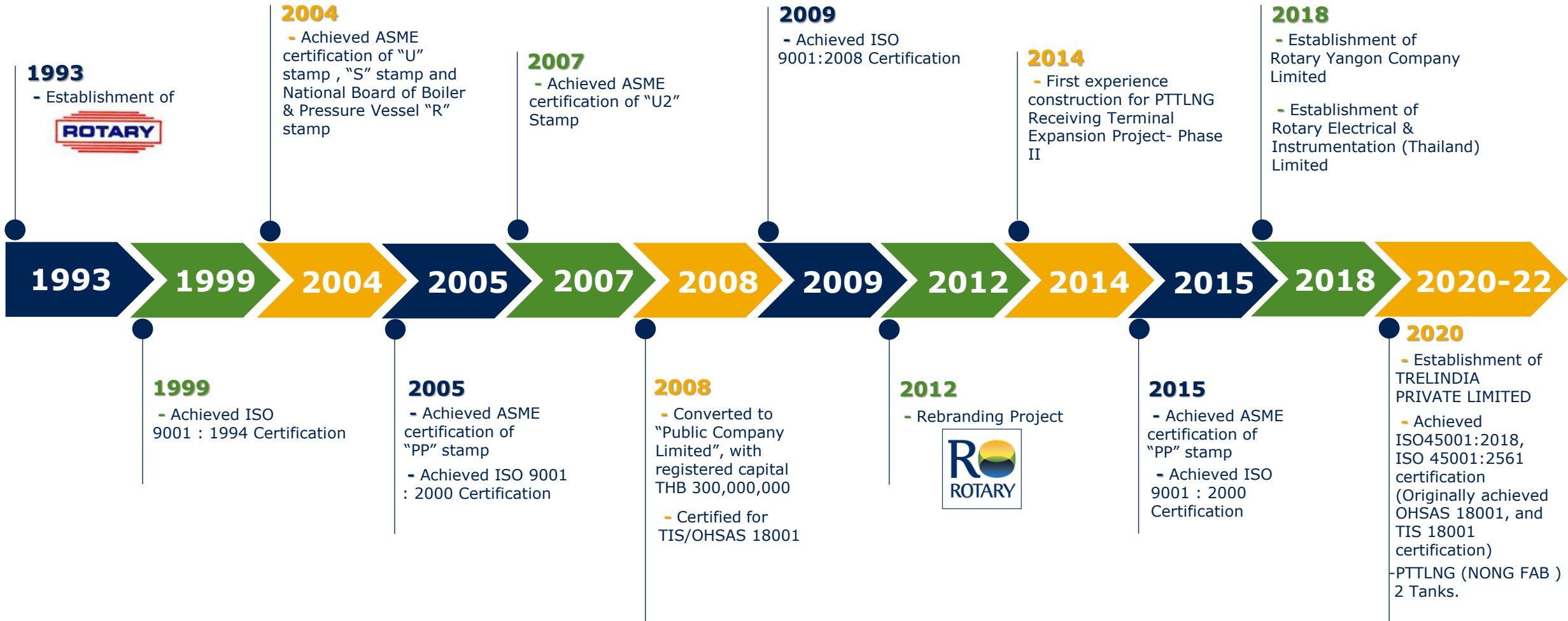
Excellence

Excellence in construction, work safely and care of environment.

ORGANISATION STRUCTURE



MAJOR MILESTONES



Certified



Certificate TH082025
The management system of
Thai Rotary Engineering Public Company Limited
168 Moo 5, Sumnakhon Sub-District, Banchang District, Rayong 21130, Thailand
has been assessed and certified as meeting the requirements of
ISO 9001:2015
For the following activities
Provision of Engineering Design, Procurement and Construction including Shop Fabrication and Project Management Services for the Energy, Petrochemicals, Oil and Gas Industries
This certificate is valid from 19 September 2020 until 19 September 2023 and remains valid subject to satisfactory surveillance audits. Recertification audit due a minimum of 60 days before the expiration date. Issue 5. Certified since 20 April 2009
Authorized by

SGS United Kingdom Ltd
Rosemead Business Park, Elmbridge Park, Chesham, Chesham, Bucks, UK
E: +44 (0)1291 350480 F: +44 (0)1291 350480 www.sgs.com
HC: SGS 9001 2015 0918
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Certificate TH1912063
The management system of
Thai Rotary Engineering Public Company Limited
168 Moo 5, Sumnakhon Sub-District, Banchang District, Rayong 21130, Thailand
has been assessed and certified as meeting the requirements of
ISO 14001:2015
For the following activities
Provision of Engineering Design, Procurement and Construction including Shop Fabrication and Project Management Services for the Energy, Petrochemicals, Oil and Gas Industries
This certificate is valid from 19 April 2019 until 19 April 2022 and remains valid subject to satisfactory surveillance audits. Recertification audit due a minimum of 60 days before the expiration date. Issue 1. Certified since 19 April 2019
Authorized by

SGS United Kingdom Ltd
Rosemead Business Park, Elmbridge Park, Chesham, Chesham, Bucks, UK
E: +44 (0)1291 350480 F: +44 (0)1291 350480 www.sgs.com
HC: SGS 14001 2015 0816
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Certificate TH2013557
The management system of
Thai Rotary Engineering Public Company Limited
168 Moo 5, Sumnakhon Sub-District, Banchang District, Rayong 21130, Thailand
has been assessed and certified as meeting the requirements of
ISO 45001:2018
For the following activities
Provision of Engineering Design, Procurement and Construction including Shop Fabrication and Project Management Services for the Energy, Petrochemicals, Oil and Gas Industries
This certificate is valid from 7 September 2020 until 7 September 2023 and remains valid subject to satisfactory surveillance audits. Recertification audit due a minimum of 60 days before the expiration date. Issue 2. Certified since 3 April 2020
This organisation was previously certified to OHSAS 18001 since 19 January 2009
Authorized by

SGS United Kingdom Ltd
Rosemead Business Park, Elmbridge Park, Chesham, Chesham, Bucks, UK
E: +44 (0)1291 350480 F: +44 (0)1291 350480 www.sgs.com
HC: SGS 45001 2018 0118
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Certificate TH092390
The management system of
Thai Rotary Engineering Public Company Limited
168 Moo 5, Sumnakhon Sub-District, Banchang District, Rayong 21130, Thailand
has been assessed and certified as meeting the requirements of
TIS 45001-2561
For the following activities
Provision of Engineering Design, Procurement and Construction including Shop Fabrication and Project Management Services for the Energy, Petrochemicals, Oil and Gas Industries
This certificate is valid from 7 September 2020 until 7 September 2023 and remains valid subject to satisfactory surveillance audits. Recertification audit due before 10 August 2023. Issue 6. Certified since 7 September 2020
This organisation was previously certified to TIS 18001 since 19 January 2009
Authorized by

SGS (Thailand) Ltd
100 Langphrasub Road, Chongnonsi, Yonburi, Bangkok 10220, Thailand
E: +66 (0)2 625 3141 F: +66 (0)2 625 3130 www.sgs.com
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โครงการธรรมภิบาลสิ่งแวดล้อม กระทรวงอุตสาหกรรม
เกียรติบัตรนี้ให้เพื่อแสดงว่า
บริษัท ไทย โรตารี เอ็นจิเนียริ่ง จำกัด (มหาชน)
ทะเบียนโรงงานเลขที่ ๖3-64(12)-2/43ย
เป็นสถานประกอบการอุตสาหกรรมที่ดำเนินงานตาม
หลักเกณฑ์ธรรมภิบาลสิ่งแวดล้อม
ให้ไว้ ณ วันที่ 3 สิงหาคม 2561
ลงชื่อ
(นายสุ ใสวาทขุน)
ปลัดกระทรวงอุตสาหกรรม

การรับรองเลขที่ : ๒-๗๒๔๑/๒๕๖๒
Green Industry
กร-ทรวงอุตสาหกรรม
ใบรับรองฉบับนี้ให้ไว้กับ
บริษัท ไทย โรตารี เอ็นจิเนียริ่ง จำกัด (มหาชน)
ที่สถานประกอบการ : เลขที่ ๑๖๘ หมู่ที่ ๕ ตำบลลำพันทอง
อำเภอบ้านาง จังหวัดระยอง ๒๑๑๑๐๐
เพื่อรับรองว่าเป็น
อุตสาหกรรมสีเขียวระดับที่ ๒
ปฏิบัติการสีเขียว (Green Activity)
การดำเนินกิจกรรมเพื่อลดผลกระทบต่อสิ่งแวดล้อมได้สร้างความมุ่งมั่นที่ดียิ่งไว้
ลงชื่อ
(นายสุ ใสวาทขุน)
ปลัดกระทรวงอุตสาหกรรม
ออกให้ ณ วันที่ : ๒๓ มกราคม ๒๕๖๒
มีผลถึง วันที่ : ๒๐ มกราคม ๒๕๖๔
เลขทะเบียนโรงงาน : ๖๓-๖๔(๑๒)-๒/๔๓ย

CERTIFICATE OF AUTHORIZATION
The named company (ASME) for the scope the ASME Boiler and authority granted by its agreement set forth in mark shall have been and Pressure Vessel Code
COMPANY: Thai
SCOPE: Manufacture of pressure vessels at the above location
AUTHORIZED: [Signature]
EXPIRES: [Date]
CERTIFICATE NUMBER: [Number]

THE NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS
Certificate of Authorization
This is to certify that
THAI ROTARY ENGINEERING PUBLIC COMPANY LIMITED
168 MOO 5, SUMNAXHON SUB-DISTRICT BANCHANG DISTRICT RAYONG, 21130 THAILAND
is authorized to use the "NB" SYMBOL, in accordance with the provisions of the National Board.
The scope of Authorization is limited as follows:
METALLIC REPAIRS AND/OR ALTERATIONS AT THE ABOVE LOCATION AND EXTENDED FOR FIELD REPAIRS AND/OR ALTERATIONS CONTROLLED BY THIS LOCATION
CERTIFICATE NUMBER: B-442
ISSUE DATE: FEBRUARY 26, 2013
EXPIRATION DATE: MARCH 2, 2016

CERTIFICATE OF AUTHORIZATION
The named company (ASME) for the scope the ASME Boiler and authority granted by its agreement set forth in mark shall have been and Pressure Vessel Code
COMPANY: Thai Rotary Engineering Public Company Limited, Banchang District, Rayong, 21130, Thailand
SCOPE: Manufacture of pressure vessels at the above location and field sites at the above location and field sites at the above location
AUTHORIZED: [Signature]
EXPIRES: [Date]
CERTIFICATE NUMBER: [Number]

THE NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS
Certificate of Authorization
This is to certify that
THAI ROTARY ENGINEERING PUBLIC COMPANY LIMITED
168 MOO 5, SUMNAXHON SUB-DISTRICT BANCHANG DISTRICT RAYONG, 21130 THAILAND
is authorized to apply the "NB" mark and register boilers, pressure vessels, or other pressure containing items with the National Board in accordance with its provisions.
The scope of Authorization is limited to items manufactured in accordance with:
ASME Stamp#: PP-S U 12
ISSUE DATE: April 30, 2013
EXPIRATION DATE: March 2, 2014

TREL'S CAPABILITIES :

Fully integrated Engineering design, Procurement, and Construction (EPC) services to the oil and gas, petroleum and petrochemical industries,

- ❑ Tank storage terminals.
- ❑ Mechanical works including structures, piping and equipment installation.
- ❑ Electrical and Instrumentation works.
- ❑ Civil and Structural works.
- ❑ Mechanical Fabrication of vessels, columns, S&T Heat Exchanger including modules.
- ❑ Specialized services such as tank repairs, refurbishment works.
- ❑ Integration of process technologies and subsystems.

Major Customers (Owner)



Major Customers (EPC Contractors)



IHI

POSCO

SK E&C

JGC



SAMSUNG

SAIPEM

Petrofac

CTCI

TR

TECNICAS REUNIDAS

GS E&C



amec
foster
wheeler

wood.

REPCO
RAYONG ENGINEERING
& PLANT SERVICE

TNS

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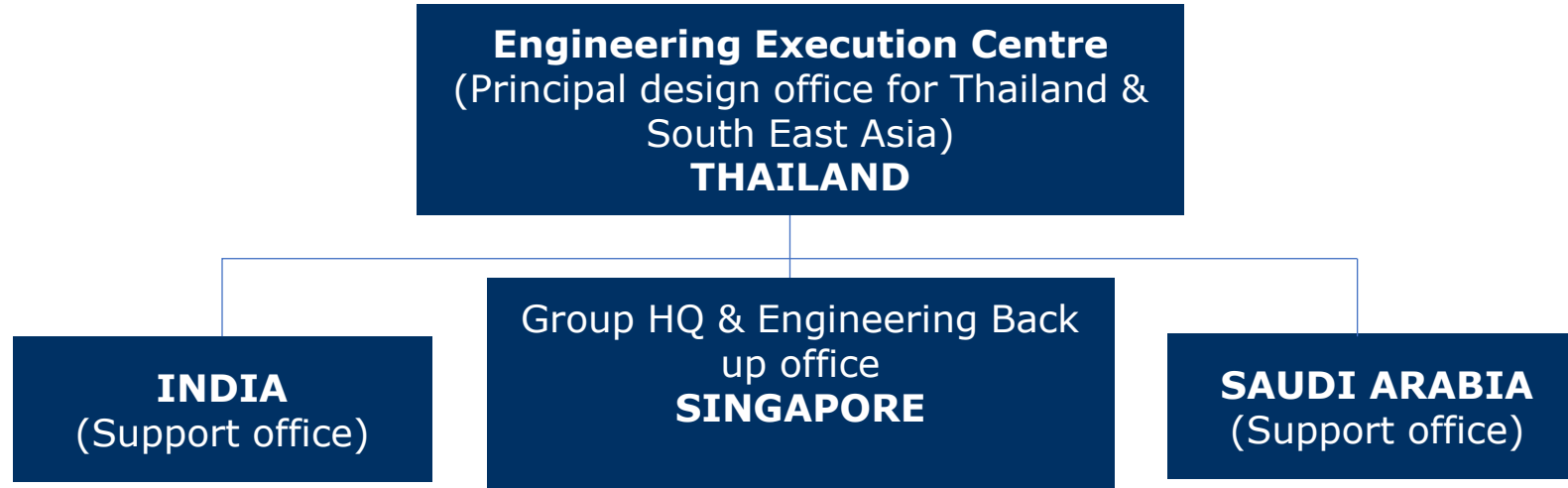
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- 5.1 Fabrication Experiences.
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Engineering: Global Offices with Smart Tools



- Engineering Services**
- 3-D modeling
 - Feasibility study
 - Tanks and Pressure vessel design
 - Plant and facilities design
 - FEED study
 - Procurement assistance
 - Basic engineering
 - Construction support
 - Detailed engineering

- TREL is a group company of the Rotary Group. Rotary group's principal company Rotary Engineering Pte.Ltd (REL) located at Singapore shall be the back-up office for TREL in case of specialized engineering and technical support required.
- “When it comes to harnessing technology in our processes, we use the best there is because we believe in working smart”**

PROCESS

- Control Philosophy, Process Flow Diagram (PFD), Piping & Instrumentation Diagram (P&ID) for Product, Utility, Waste Water, Fire Fighting Systems
- Pollution Control and Safety System : HAZOP Study (3rd Party)
- Process Calculation, Hydraulic Calculation, Tank Venting Calculation, Heat Leak Calculation
- Design calculation for Heater Capacity, Heating Coil, Jet Nozzle, Fire Fighting
- Thermal Design & Calculation by HTRI Design ,rating ,simulation and/or analysis such Vibration Analysis for S & T Heat Exchanger Air Cooler, Economizer Hairpin Exchanger, Double Pipe Exchanger
- Cool down spray system in-house and CFD (3rd party)

PIPING

- Equipment Layouts and Plot Plans
- Piping 3D Modelling
- Product, Utility and Fire-Fighting Piping Design
- Piping GA Drawing - Products, Utilities and Fire Fighting
- Piping Isometric Drawings
- Pipe Spool Sheets for Shop-Fabrication
- Pipe Support Design
- Stress Analysis

TANKAGE

- Atmospheric Storage Tank (as per API650) with Cone, Dome, External Floating and Internal Floating Roof
- Double Walled (external steel shell) refrigerated/cryogenic storage tank (as per API 620 or equivalent)
- Spherical Storage Tank (as per ASME Sec VIII DIV 1/2)
- Mounded Bullet Tank as per ASME Sec VIII Div1/2 and EEMUA 190
- Rectangular/ Square Tank as per in-house engineering practices
- Tank's Fire-Fighting Systems (Water Spray and Air Foam Systems)

PRESSURE VESSELS & HEAT EXCHANGERS

- Design of ASME Section VIII for Pressure Vessels, Columns, Reactors
- ASME Certified U, U2, R, S, PP & NB
- Finite Element Analysis
- All kinds of construction materials CS, SS, Duplex, Alloy, etc.
- Design of ASME Section VIII and TEMA Standard for Shell & Tube Heat Exchangers
- Stress Analysis for Nozzles and Main Body (Outsource)

CIVIL & STRUCTURAL:

- Foundations
- Reinforced Concrete Structures
- Steel Structures, Steel Detailing
- Oily and Product Waste Water Drainage Systems
- Infrastructures
- Building Works
- Design Specifications, Construction Specifications
- Design Calculations and Computer Analysis

ELECTRICAL & INSTRUMENTATION

- Power Supply and Distribution
- Earthing and Grounding Protection System
- Communication, Security and UPS Systems
- Substation and Switch Room Design
- Local and Remote Instrumentation Design
- Tank Instruments and Gauging Systems
- Process and TUV Certified Programmable Logic Controllers
- Truck and Railcar (Un)loading Systems
- Emergency Shutdown and Safeguarding Systems
- Specification and Requisition of E&I equipment

Engineering Design Software Used



No.	Software	Version	Function
1	AutoCAD Map, Mechanical, LT	2010/2015/2019	2D Drawing and Drafting (Plan, Vertical, Section Drawing and Equipment, Piping Layout in Various Disciplines)
2	Solid WORK	2018	3D Drawing and Drafting (Plan, Vertical, Section Drawing for Sphere tanks and Complex parts of Storage tank)
3	Tekla Structure	2018	3D Drawing and Drafting for Steel structure work
4	Autodesk Plant Design Suit	2017, 2015	Plant design software including P&ID drawing, 3D piping layout/equipment/structure, automatic generate GA/Isometric drawings and steel detailing.
5	COMPRESS Build 7820	2018	pressure Vessel and Heat Exchanger Design
6	AME Tank DCM/3D	11.12.4	Tank Design per API-650, API-620, AWWA D100 including API-2000
7	STAAD Pro	V.8i SS6	Structure Design
8	Solid WORK Simulation (COSMOS)	2018	General for Finite Element Analysis / Fatigue Analysis
9	Autodesk Simulation (ALGOR)	2014	General for Finite Element Analysis / Fatigue Analysis
10	Math CAD	V.14	General propose for special engineering design
11	HTRI Xchanger Suite	HTRI Xchanger Suite 7	Design, rating, and simulation of heat exchangers

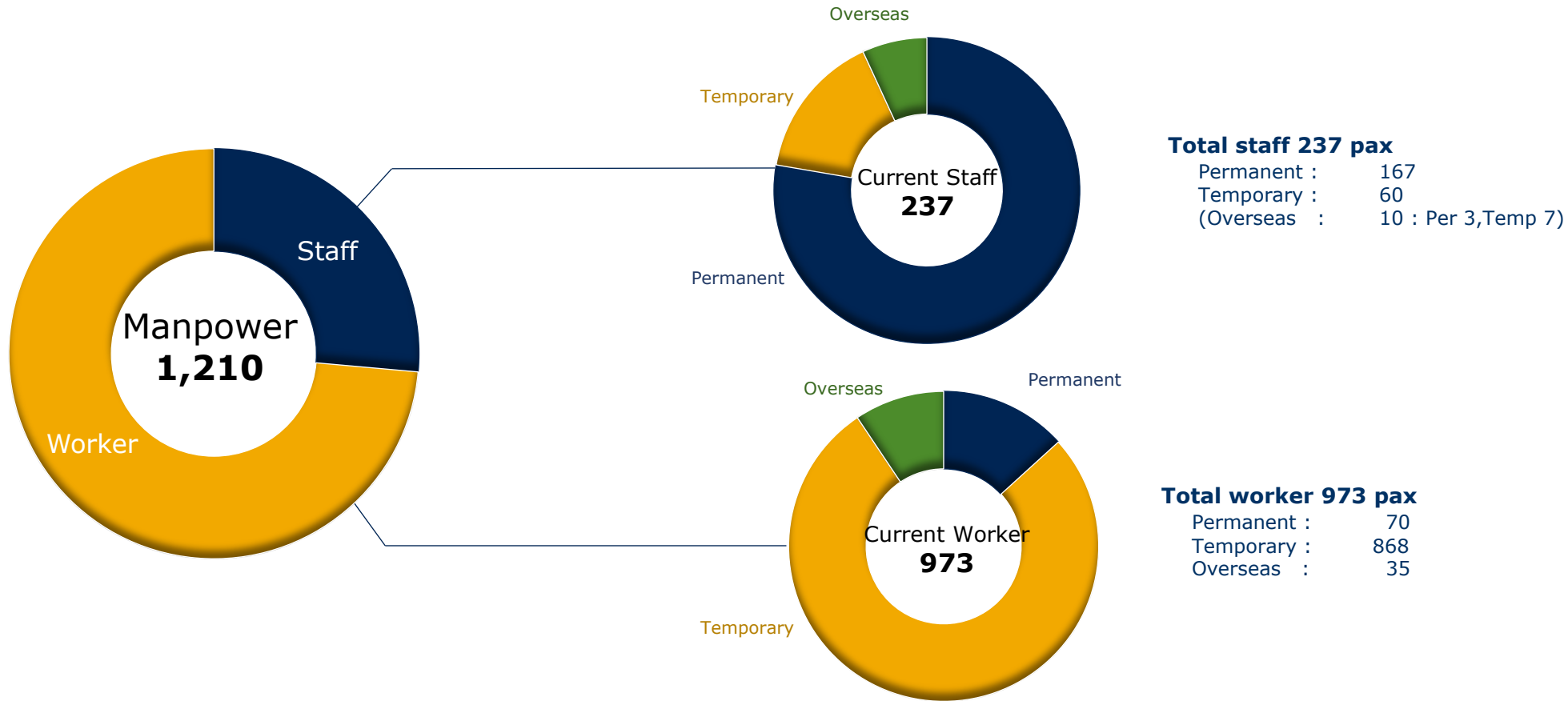
Procurement: Centralized Buying & Material Management System

Services and Capabilities

- Vendor Pre-qualification
- Tender, preparation and evaluation of material bids
- Contract negotiation
- Equipment specifications
- Procurement of equipment and materials
- Inspection services (Shop and Field)
- Warehousing
- Cost reporting to clients
- Custom clearance
- Import and re-export
- BOI privilege
- Over size cargo
- Special air freight



Manpower : Workforce



Source of worker



Singaporeans ,Indian , Malaysian, Filipino , Indonesian, Myanmar

PROJECT MANAGEMENT



We strongly believe that Project Management is the key in determining the success of a Project. As such, a team of carefully selected project management specialists; Project Manager, Construction Manager, Engineers, Planner, Safety Personnel, as well as QAQC Personnel are put together from the start of the Project at the planning phase right through the execution phase, up till the project completion. With the relentless support of our Rotary's Senior Management, our Project Management Team is able exert control in Project planning, monitoring, progress and evaluation upon Project closure



Project Management Department (PMD) will be leading all functions of project/construction managements including planning, designing, specification approvals, scheduling, quality and safety controlling, managing sub-contractors and timely completion of projects.

Tank plates, structures and tank appurtenances are fabricated at our shop where spanning over 43 rai with production capability per month up to 2,000 tons

Fabrication Management : we prefer to keep all ancillary activities in-house in view to upkeep the highest standards and efficiency we have always maintained. Within the confines of our workshops, we have our own blasting, painting, NDT, inspection yards that complement our core services and Logistics and materials management can be a headache in a workshop, especially for bigger-sized jobs, One-stop solution is provided to satisfy all your requirements. Our main core specializations are:

- Tankage pre-fabrication
- Pressure vessel fabrication
- Heat Exchanger
- Tower, Column, Reactor etc, (Static Equipment)
- Skid Module.
- Structure fabrication
- Piping fabrication.



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WORKSHOP AT BANCHANG RAYONG, THAILAND



Total Area : 68,800m² (43 Rai) 17 ACRE
Shop Floor Area : 11,500m²

TREL `s fabrication capabilities



Transportation Shop Limitation		Length: 40 m, Width : 5 m, Height: 5 m, Weight :200 tons
Fabrication Experience	Carbon Steel	Yes
	Low Temp Carbon Steel	Yes
	Stainless Steel	Yes
	Clad Steel/Overlayered	Yes
	Special Material other than CS, Austenite SS	P3, P4, P6 , P34, P43, P10H, P5A, P355N ,A553 type 1 (Ni9%)
Main Production	Vessel / Reactor	
	Column	
	Drum	
	Shell & Tube H/E	
	Others :Steel Structures / Equipment Platforms & Ladders	
Maximum Shop Fabrication Capacity	Weight	200 ton
	Length	40,000 mm
	Vessel Dia.	5,000 mm
	Shell Thickness	95 mm
	Machining Dia. (Tube sheet)	Max Dia. 4000 mm
	Machining Thickness. (Tubesheet)	Max th'k 300 mm
Maximum Fab.Experience	Size Information in Experience	Weight: 108 ton _Purge Bin Length: 37 m _Purge Bin Vessel Outer Dia.: 5.6 m Thickness 95 mm _Bullet Tank.

TREL 's fabrication capabilities



Shop Facility	Total Area	68,800 m2 43 rai
	Roofed Area	11,500 m2
	Lifting Facilities (Over head Crane)	10 Ton (8) 20 Ton (5)
	Assembly for Heavier Item than Shop Crane Capacity	Use Jack-up system
	Plate Bending Machine	Max th'k 50 , Max Width. 3200 mm. Length 12000 mm
	Head Forming	Spinning Machine Max th'k 25 mm Max Dia. 2500 mm
	Welding Process.	SMAW /GTAW /SAW / GMAW /FCAW:
	Blast & Paint facilities	<p>Blast</p> <p>1. ROOM SIZE - 30m(W) x 42m(L) x 10m(H)</p> <p>2. DOOR SIZE - 15m(W) x 10m(H)</p> <p>Paint</p> <p>1. ROOM SIZE - 28m(W) x 54m(L) x 12m(H)</p>

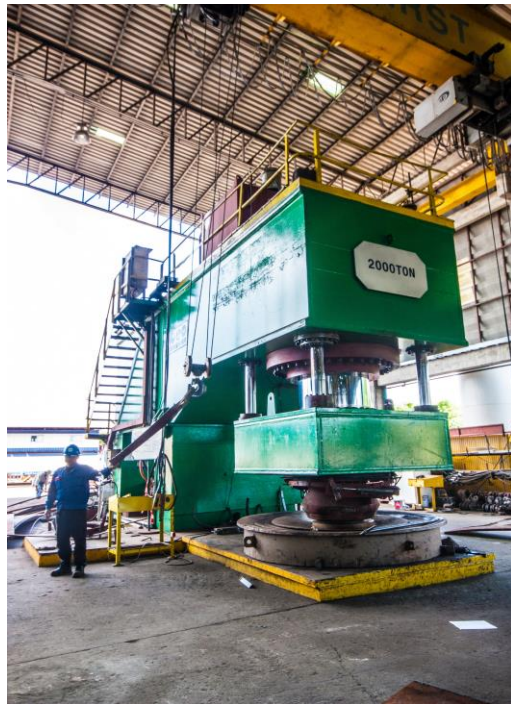


TREL `s fabrication capabilities



Productivity rate / month.	Equipment Item	Productivity Rate / Month	
	Heat Exchanger	150	Ton/Month
	Vessel	100	Ton/Month
	Field Tank Pre-Fabrication	2000	Ton/Month
	Structure	200	Ton/Month
	Piping	6,500	DB/Month
	Blasting & primer for plate	15,000	M2/Month
	Blasting & Primer for structure & pipe	12,000	M2/Month

Workshop Equipment



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SHOP FABRICATION EXPERIENCES



TREL fabricates various equipment for the Oil & Gas industry



Shop Assembled Atmospheric Tank



Reactor



Pig Launcher



Column



Pressure Vessel



Fin tube Condenser



Reactor



Heat Exchanger

SHOP FABRICATION EXPERIENCES



Project Description

- De-sanding Package of PTTEP LKU-F Project for Schlumberger (September 2015)

SHOP FABRICATION EXPERIENCES



We fabricate and transport heavy and over-sized equipment for our valued clients



Project Description

- 4.7m D by 34m length, 108 tons Purge Bin for delivery to JG Summit Petrochemical, Philippines.



SHOP FABRICATION EXPERIENCES



We fabricate and transport heavy and over-sized equipment for our valued clients



Project Description

- 5.6 m. D x 25 m. L, 85 tons Storage Drum for Uhde (Thailand) Limited

SHOP FABRICATION EXPERIENCES



Project Description

LP Flash gas recovery Project
Knock out drum
PTTME and PTT GSP
Dia 2360 x7270 L

Project Description

IRPC
Turnaround 2016
Fabrication Heat Exchanger 7600 Tubes and 2899 tubes

SHOP FABRICATION EXPERIENCES



Project Description

- PTTME and PTT GSP
- High performance of mercury removal from condensate Project
- Fabrication Vessels ID 3000 x 1012L 3 units and vessels ID 3400 x 10320L 2 units



Project Description

- Jord International and Chevron
- MCS Compressor seal gas heater
- Fabrication Skid 1750 kgs 3 skids

SHOP FABRICATION EXPERIENCES



Project Description

Customer Name : TOC Glycol Company Limited
Job No. :B11P2759
Project Name :Fabrication Evaporator Heat Exchanger

Scope :-

- Fab Drawing, Material Supply ,Fabrication ,Paint ,Delivery
- 1) E-533 ID1500 x BL-BL4984L Mat'I SS316L Tube OD31.75x1.65tx5000L (S-1100)
 - 2) E-534 ID1625 x BL-BL4484L Mat'I SS316L Tube OD31.75x1.65tx4500L (S-1320)
 - 3) E-535 ID1900 x BL-BLL3984 Mat'I SS316L Tube OD31.75x1.65tx4000L (S-1800)
 - 4) E-536 ID1950 x BL-BL3984L Mat'I SS316L Tube OD31.75x1.65tx4000L (S-1920)
 - 5) E-537 ID2130 x BL-BL3499L Mat'I SS316L Tube OD25.4x2.11tx3500L (S-3754)

Fabrication Schedule : 3 months
Weight : 121.27Tons / 5 Nos.

SHOP FABRICATION EXPERIENCES



Project Description

Customer Name : TOC Glycol Company Limited
Job No. :B11P2758
Project Name :Fabrication Evaporator Tower

Scope : with Cladding.

- Design, Drawing, Material Supply ,Fabrication ,Paint ,Delivery
- 1) T-531 ID3.2M x 21.25 M (Overall)SA516-60+ Cladding (29.5t +4.2t clade)
 - 2) T-536 ID3.5M x 16.38 M (Overall)SA516-60+ Cladding (19.7t +4.1t clade)
 - 3) T-537 ID5.2M x 26.15 M (Overall)SA516-60+ Cladding (23.63t +4.43t clade)

Fabrication Schedule : 3 months Weight : 193.863 Tons / 3 nos.

SHOP FABRICATION EXPERIENCES



Project Title	Tank farm 5 Propylene Bullet Tank Storage And Its Related Facilities
Client	Oiltanking Helios Singapore PTE. LTD, Singapore
Main Contractor	Rotary Engineering Pte. Ltd, Singapore
Date of Commencement	Feb 2017
Date of Completion	Jun 2018 (Fabrication work completed)
Project Description	<ul style="list-style-type: none">✓ EPC of Bullet Tank 2 units with ASME U2 stamp✓ Propylene Bullet Tank Storage 2 units, capacity is 2800 m3 per tank✓ Under code ASME SEC.VIII DIVI 2 2015 EDITION AND EEMUA 190✓ Dia. ID 8 m. x L 67.05 m. , weight 600 Tons per tank. As a specialist in liquid storage, we have an established track record in Thailand. More recently, we have oversea fabricated bullet tank storage at Indonesia and sent to Singapore for installation.

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 - **5.2 Construction Experiences**
 - 5.3 Modification Work Experiences
 - 5.4 Rotary's Cryogenic Experience



EPC & CONSTRUCTION WORK EXPERIENCES



1993: Thai Tank Terminal Naptha Tanks, Thailand



Project Description

- 1 x 5,500 cbm EFT Naptha Tank(60m D and 20m H)
- 1 x 2,500 cbm EFT Naptha Tank (40m D and 20m H)

SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction and associated Piping ,Mechanical ,Civil & Structural, E&I works.

EPC & CONSTRUCTION WORK EXPERIENCES



1995: TPI (IRPC) Crude Oil Storage Tank, Thailand



Project Description

- 4 x 110,000 cbm single deck EFT tanks
- Each tank 80m D, 23m H

SCOPE OF WORK

1. Supply
2. Fabrication
3. Erection

EPC & CONSTRUCTION WORK EXPERIENCES

1997: Map Ta Phut Tank Terminal, Thailand



Project Description

- 3 x 100,000 cbm double-deck EFT tanks
- 74m.ID x 24m. H



SCOPE OF WORK

1. Fabrication
2. Erection

EPC & CONSTRUCTION WORK EXPERIENCES



2000: Thai Tank Terminal Phenol & Acetone Tanks, Thailand



Project Description

- 4 Dome Roof Tanks
- Total capacity 30,750 cbm



SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction

EPC & CONSTRUCTION WORK EXPERIENCES



2001: ABB-Petrofac Ohanet Development Project, Algeria



Project Description

- 4 x 550 cbm Spherical Tanks
- Each tank 10.2m D

SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction

TREL's first overseas project, successfully delivered in 12 months.

EPC & CONSTRUCTION WORK EXPERIENCES



2004: PTT PCL LPG Spherical Tank, Thailand



Project Description

- 1 x 6,000 cbm spherical storage tank

SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction

This project was TREL's first LPG tank project in Thailand.

EPC & CONSTRUCTION WORK EXPERIENCES



2006: RRC (PTT GC) Condensate Storage Tank, Thailand



Project Description

- 3 x 100,000 cbm double deck EFT tanks (78m D, 23m H)
- 2 x 1,005 cbm cone roof tank (12.5m D, 13m H)

SCOPE OF WORK

1. Engineering
2. Fabrication
3. Erection

EPC & CONSTRUCTION WORK EXPERIENCES



2006: TPC Vina VCM Spherical Storage Tank, Vietnam



Project Description

- 1 x 10,000 cbm spherical tank
- 26.8m D

SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction

EPC & CONSTRUCTION WORK EXPERIENCES



2006: ATC II (PTT GC) Tank Farm, Thailand



Project Description

- Total 32 nos. of atmospheric tanks and 2 nos. of spherical tanks
- Total capacity 121,700 cbm

SCOPE OF WORK

1. Fabrication
2. Erection (with **U2 Stamp**)



EPC & CONSTRUCTION WORK EXPERIENCES



2006 TPX Revamp Project



Project Title	TPX Revamp Project
Client	Owner Thai Paraxylene Company Limited ,Thai Oil PLC (Group)
Main Contractor	Bechtel International Inc.
Date of Commencement	April 2006
Date of Completion	September 2007
SCOPE OF WORK EPC	<ul style="list-style-type: none">✓ Engineering✓ Procurement✓ Construction
Project Description :	<ul style="list-style-type: none">✓ TPX Revamp Project✓ TPX Revamp Project✓ EPC for 10 Nos.Cone Roof Tanks and 1 Modification Tank

EPC & CONSTRUCTION WORK EXPERIENCES



2006: MOC Tank Farm Unit Project, Thailand



Project Description

- 11 nos. atmospheric tanks and 9 nos. spherical tanks
- Total capacity:
Atm – 143,000 cbm
Spherical – 44,700 cbm

SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction and associated Piping ,Mechanical, Civil & Structural, E&I works.



EPC & CONSTRUCTION WORK EXPERIENCES



2006: Universal Terminal Project, Singapore



Project Description

- 73 nos. of Atmospheric Tanks
- Total capacity of 2.3 million cbm

SCOPE OF WORK

1. Construction

EPC & CONSTRUCTION WORK EXPERIENCES



2008: PTTAC AN and MMA Project, Thailand



Project Description

- 15 nos. of atmospheric tanks and 2 nos. spherical tanks (with **U2 Stamp**)
- Total capacity:
Atmospheric Tanks- 30,550 cbm; Spherical Tanks – 4,800 cbm

SCOPE OF WORK

Atmospheric Tanks

1. Fabrication
2. Erection

Spherical Tanks

1. Engineering
2. Procurement
3. Construction

EPC & CONSTRUCTION WORK EXPERIENCES



2009: PTTTANK Ammonia Tank & Facilities Project, Thailand



Project Description

- 1 no. of Double Wall (Full Containment) tank
- Total capacity: 50,000 cbm.
- Associated facilities including In-tank submersible pumps, Marine Loading Arm, BOG Compressors, LP Ground Flare, Heating unit, Piping Work, Civil & Structural Work, E&I Work

SCOPE OF WORK

1. Engineering
2. Procurement
3. Construction & Commissioning

EPC & CONSTRUCTION WORK EXPERIENCES



PTTGC - Butene-1 Storage Tank Project Thailand



Project Title	Butene-1 Storage Tank Project
Client	PTTGC
Main Contractor	Thai Rotary Engineering Ltd
Date of Commencement	Feb 2012
Date of Completion	May 2013

SCOPE OF WORK

Engineering Design,
Procurement and Construction:

1. Civil
2. Sphere Tank

EPC & CONSTRUCTION WORK EXPERIENCES



TOP new tank project



Project Title	TOP new tank project
Client	Thai Oil PLC
Main Contractor	By TREL
Date of Commencement	06.06.2011
Date of Completion	07.10.2014

SCOPE OF WORK EPC

- ✓ Engineering
- ✓ Procurement
- ✓ Construction

Project Description :

- ✓ EPC for TOP new tank project 5 nos.
- ✓ - 1 CRT+IFR Dia 30.0 m x 22.0 m
- ✓ - 1 CRT+IFR Dia 36.0 m x 22.0 m
- ✓ - 1 CRT+IFR Dia 39.0 m x 22.0 m
- ✓ - 2 ADR-IFR Dia 60.0 m x 22.0 m

EPC & CONSTRUCTION WORK EXPERIENCES



Oil tanking ODFJELL Spherical Tanks, Jurong Island, Singapore



Project Title	EPC 3 nos. of Spherical Tanks
Client	Oil tanking ODFJELL Singapore Ltd
Main Contractor	Rotary Engineering Ltd
Date of Commencement	April 2013
Date of Completion	Dec 2014

SCOPE OF WORK

Engineering Design,
Procurement and Construction:
1.Civil

- 2.Tankage**
- 3.Piping & Structures
- 4.Equipment Installation
- 5.Electrical & Instrumentation

EPC & CONSTRUCTION WORK EXPERIENCES



Fujairah Oil Terminal, Fujairah, UAE



Project Title	Fujairah Oil Terminal
Client	Concord Energy Pte Lt
Main Contractor	Rotary Engineering Fujairah FZE
Date of Commencement	2012
Date of Completion	2014

SCOPE OF WORK

Engineering Design,
Procurement and Construction:

- 1.Civil
- 2.Tankage
- 3.Piping & Structures
- 4.Equipment Installation
- 5.Electrical & Instrumentation

EPC & CONSTRUCTION WORK EXPERIENCES



PTTGC - Butene-1 Storage Tank Project Thailand



Scope & Project Description

- Basic and detailed engineering for 1 no. of Spherical tank which involves civil (foundation and dike) works.
- Spherical tanks design under ASME Section VIII Div. 2 (with **U2 Stamp**).
- Spherical tank product: Butene-1 (C₄H₈).
- Tanks (empty weight) – 560 tons
- Engineering, Procurement, Construction, Testing, Pre-commissioning, Mechanical Completion and putting into service of the Facilities until Notice of Mechanical Completion

EPC & CONSTRUCTION WORK EXPERIENCES



IRPC - UHV Plant Project, Rayong Thailand

Scope & Project Description

1. Engineering, Procurement and Construction of total 7 Spherical Tanks per ASME VIII Div. 2 with U2 Stamp as following
 - Propylene tank 7,000 cbm for 2 nos.
 - C3/C4 tank 5,000 cbm for 2 nos.
 - LPG tank 3,500 cbm for 3 nos.
 - Total empty weight 5,788 Tons
2. Fabrication and Construction work for 20 Nos. of ATM Tanks



EPC & CONSTRUCTION WORK EXPERIENCES



2014-2016 : PTTLNG Phase II Project



Project Title	LNG Receiving Terminal Expansion Project-Phase II
Client	PTTLNG Company Limited
Main Contractor	IHI Corporation, Japan
Date of Commencement	Jul 2014
Date of Completion	Dec 2016 (mechanical work completed)

Project Description

- ✓ 2 Nos. of 160,000 cbm. LNG Storage Tanks full containment at -175 Degrees Celsius)
- ✓ Double wall tank –reinforced concrete outer wall, 9% Ni Carbon Steel inner wall
- ✓ Dia Dia 80m x H 35 m

As a specialist in liquid storage, we have an established track record in Map Tha Phut Petrochemical Area in Rayong province. More recently, we have ventured into the LNG space, and completed building two 160,000m3 LNG storage tanks in Rayong.



SCOPE OF WORK

2 Tanks Construction of double wall tank (inner steel part)

EPC & CONSTRUCTION WORK EXPERIENCES

Thai Oil Public Company Limited

Project Description	TOP Crude Oil Tank Project (5 Tanks - 51,309 m3 per tank capable of storing)
Scope of Work	EPC Work (Exclude Foundation)
Owner	Thai Oil Public Company Limited
Location	Sriracha, Chonburi, Thailand
Duration	March 2017 - September 2018
Special Features:	EPC Tankage: 5 tanks ID 58m * H 22 m Material: A516 Gr.70 Open Top with External Floating Roof. (EFR Type)



EPC & CONSTRUCTION WORK EXPERIENCES



Thai Oil Public Company Limited



Project ID	<u>P11P3598</u>
Project Description	PLOT X Tank Demolition Project
Scope of Work	Tank Demolition Work and Selling Scrap of Tank
Owner	Thai Oil Public Company Limited
Location	Sriracha, Chonburi, Thailand
Duration	September 2018 – February 2019
Special Features:	Tank Demolition : 4 tanks (ID. 48m. 2 Ea. & ID. 43m. 2 Ea.), Material grade. A283C, Open Top with External Floating Roof. (EFR Type)

EPC & CONSTRUCTION WORK EXPERIENCES



Thai Tank Terminal Company Limited (TTT)

Project ID P11P3583
Project Description INTER JETTY LINE 12" Project (2 Tanks and facilities for new products storage)
Scope of Work EPC work Pipe 12" From Jetty#2A to #2B
Owner Thai Tank Terminal Company Limited (TTT)
Location Maptaphut , Rayong, Thailand
Duration Jan 2019 - August 2019
Special Features: EPC work (Civil, Piping, E&I and commissioning)



EPC & CONSTRUCTION WORK EXPERIENCES



GC OXIRANE COMPANY LIMITED

Project ID	<u>P11P3414</u>
Project Description	GC Oxirane Propylene Oxide Project
Scope of Work	EPC Work (Exclude Foundation)
Owner	GC Oxirane Company Limited
Contractor	Samsung Engineering (Thailand) CO.LTD
Location	Map Ta Put , Rayong , Thailand
Duration	February 2018 – August 2019
Special Features:	EPC ATM Tankage: 18 tanks (SS304,SS316,A283 Gr.C) EPC Spherical Tankage: 1 tank (SA 537 CL.2+S5)



EPC & CONSTRUCTION WORK EXPERIENCES



GC OXIRANE COMPANY LIMITED

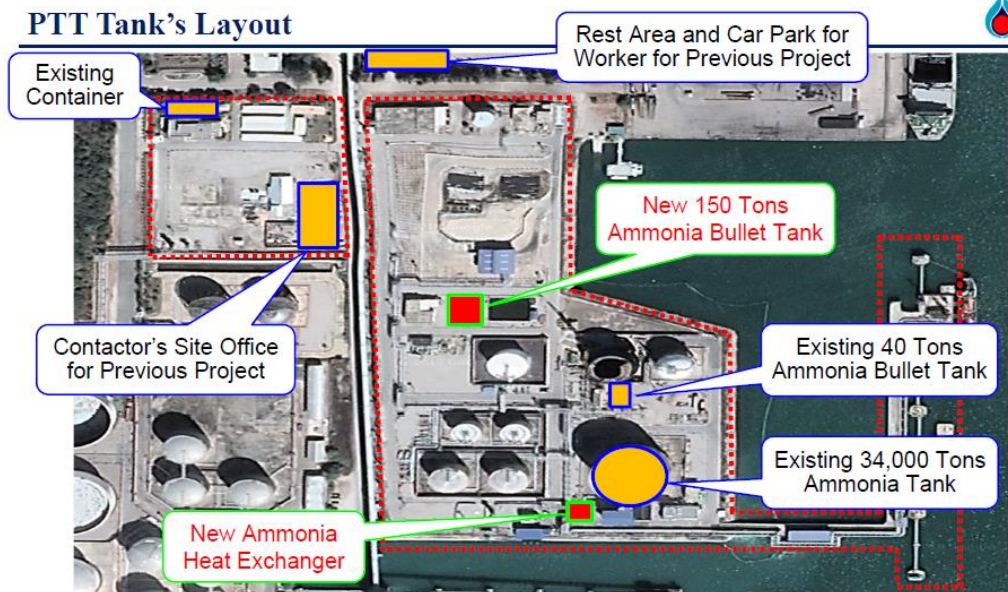
Project ID	<u>P11P3414</u>
Project Description	GC Oxirane Propylene Oxide Project
Scope of Work	EPC Work (Exclude Foundation)
Owner	GC Oxirane Company Limited
Contractor	Samsung Engineering (Thailand) CO.LTD
Location	Map Ta Put , Rayong , Thailand
Duration	February 2018 – August 2019
Special Features:	EPC ATM Tankage: 18 tanks (SS304,SS316,A283 Gr.C) EPC Spherical Tankage: 1 tank (SA 537 CL.2+S5)



EPC & CONSTRUCTION WORK EXPERIENCES

PTT TANK TERMINAL

Project ID	<u>P11P3720 & P11P3787</u>
Project Description	150-Ton Ammonia Bullet Tank & Ammonia Heat Exchanger Project
Scope of Work	EPC, PIPING ,MECHANICE ,CIVIL,E&I
Owner	PTT TANK TERMINAL
Location	PTT TANK, Rayong, Thailand
Duration	December 2018 – October 2019
Special Features:	Fabrication & Installation new Bullet Tank – 150 Ton Ammonia Bullet Tank I.D 4,750 mm., TL/TL 16,750 mm Fabrication & Installation new Heat Exchanger unit 1 EA E-2104S: METHANOL EVAPORATOR



EPC & CONSTRUCTION WORK EXPERIENCES



MAP TP PHUT OLEFINS (MOC)

Project ID	P11P3507
Project Description	MOCD2
Scope of Work	Spherical Tank (EPC) Dia.22.4M
Owner	SCG
Location	MOC , Rayong, Thailand
Duration	Jul-2018 To Nov-2019
Special Features:	EPC Spherical Tankage : 1 tank (SA537 CL.2+S5)/Insulation



EPC & CONSTRUCTION WORK EXPERIENCES



Thai Tank Terminal Company Limited (TTT)

Project ID P11P3351
Project Description PO&POLYOLS Project (2 Tanks and facilities for new products storage)
Scope of Work EPC work to completed facilities for new products storage, called PO & POLYOLS.
Owner Thai Tank Terminal Company Limited (TTT)
Location Maptaphut , Rayong, Thailand
Duration June 2018 - November 2019
Special Features: EPC Tankage: 2 Tanks and completed facilities for new products storage.



EPC & CONSTRUCTION WORK EXPERIENCES



PTT Global Chemical Public Company Limited

Project ID	<u>P11P2877</u>
Project Description	Olefins Reconfiguration Project – Ethylene Double Wall Tank
Scope of Work	EPC of Ethylene Double Wall Tank
Owner	PTT Global Chemical Public Company Limited
Contractor	TTCL Public Company Limited
Location	Map Ta Put, Rayong, Thailand
Duration	June 2018 – April 2020
Special Features:	Engineering, procurement, Fabrication & installation of Ethylene Double Wall Tank

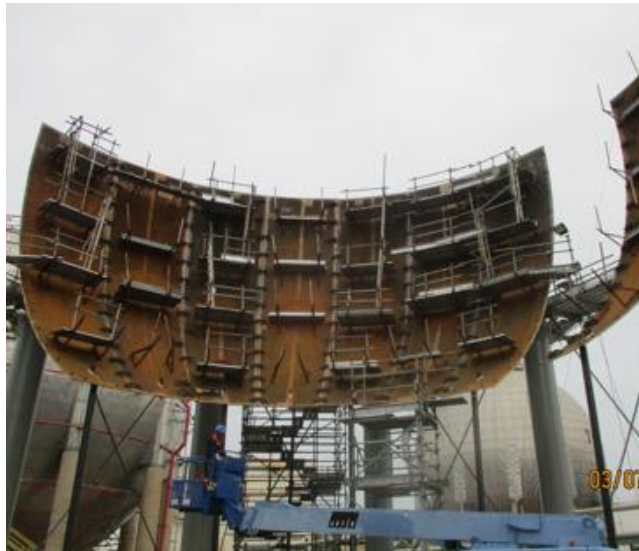


EPC & CONSTRUCTION WORK EXPERIENCES



GC MAINTENANCE AND ENGINEERING CO,LTD.

Project ID	<u>P11P3609</u>
Project Description	Supply and Install of T-6966B Mixed C4/C4R Spherical Tank PTTGC Site 7
Scope of Work	Spherical Tank (EPC) Dia.23M
Owner	GC MAINTENANCE AND ENGINEERING CO,LTD.
Location	PTTGC SITE 7, Rayong, Thailand
Duration	December 2018 – February 2020
Special Features:	EPC Spherical Tankage : 1 tank (SA537 CL.2+S5)/Insulation Aerogel blanket with SS Jacket



EPC & CONSTRUCTION WORK EXPERIENCES



PSW Port & Petroleum (Myanmar)

- Project ID** : P58P3628
- Project Description** : EPC/Turnkey Project for Proposed Petroleum Storage & Handling Facilities for PDW Terminal (Phase I)
- Scope of Work** : EPC of PDW Terminal Phase I (Mechanical, ATM Tanks 8 Nos. and 1 No. of SLOP Tank, Civil, Piping, E&I)
- Owner** : Paduak Shwe War Port and Petroleum Co., Ltd.
- Location** : Thilawa, Myanmar
- Duration** : November 2018 – April 2020 (18 Calendar Months)
- Special Features** : Terminal

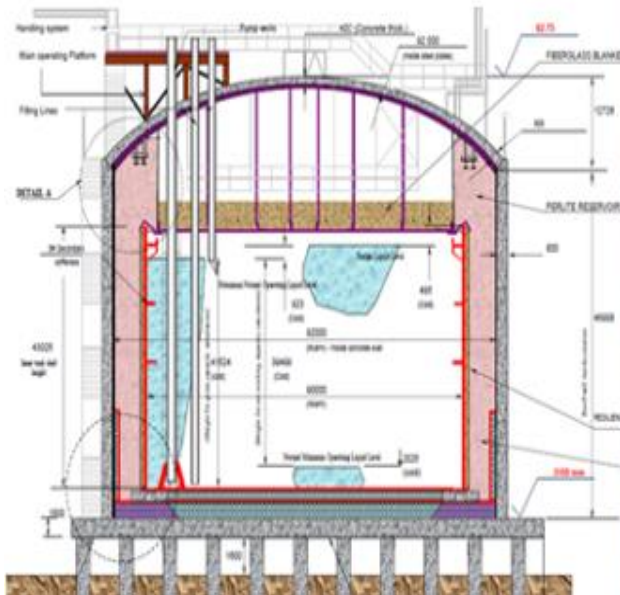


EPC & CONSTRUCTION WORK EXPERIENCES



SPCC Joint Venture (Saipem & CTCI)

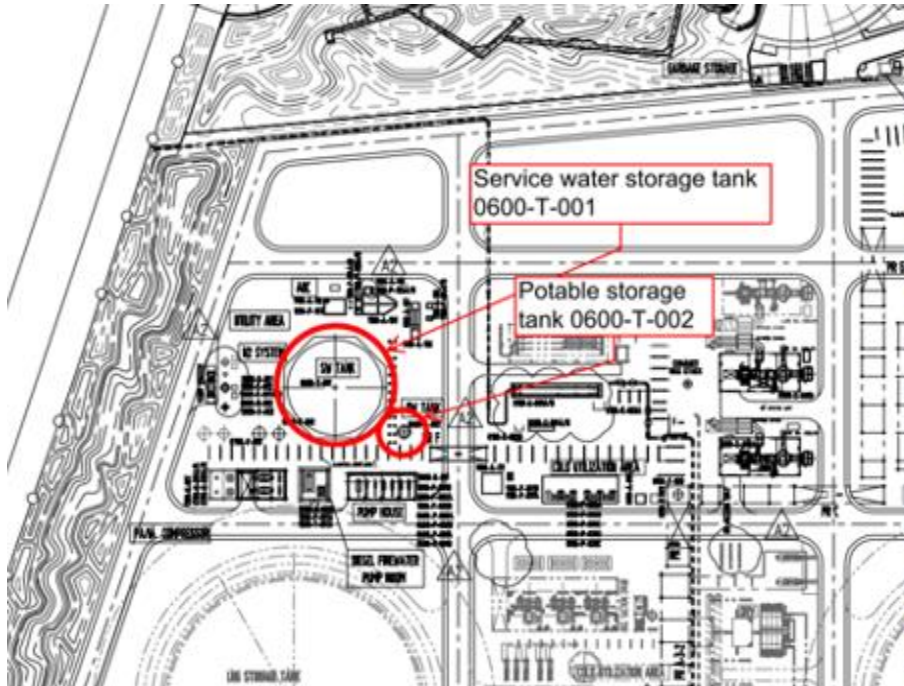
Project ID	<u>P11P3237</u>
Project Description	PTTLNG Nong Fab LNG Receiving Terminal Project (LNG Tank Mechanical Work)
Scope of Work	2 LNG Storage Tank (Construction) Dia 90 m.
Owner	PTTLNG Company Limited
Location	Nong Fab, Map ta Phut Industrial Estate, Rayong, Thailand
Duration	Aug 2019 – on-going
Special Features:	LNG Storage Tank : 2 Tanks (ASTM A553M Type 1 and -165 Degree C (LNG))



EPC & CONSTRUCTION WORK EXPERIENCES

SPCC Joint Venture (Saipem & CTCI)

Project ID	<u>P11P3238</u>
Project Description	PTTLNG Nong Fab LNG Receiving Terminal Project (Field storage Tanks Fabrication and Installation work)
Scope of Work	2 Water Storage Tank (EPC) Dia 34 m. and Dia 3.6 m.
Owner	PTTLNG Company Limited
Location	Nong Fab, Map ta Phut Industrial Estate, Rayong, Thailand
Duration	Sep-19
Special Features:	EPC Water Storage Tank : 2 Tanks (A516.70 & A36)/Internal Coating



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EPC & CONSTRUCTION WORK ON-GOING

FABRICATION & CONSTRUCTION OF 51 NOS OF EXISTING TANK MODIFICATION WORKS, DEMOLITION OF 5 NOS OF TANK & TIE IN WORK

Project Title	Fabrication & Construction of 51 Nos of Existing Tank Modification Works, Demolition of 5 Nos of Tank & Tie In Work
Owner	Thai Oil Public Company Limited
Contractor	Petrofac, Samsung and Saipem Joint Venture (UJV)
Sub-Contractor	Thai-Rotary Engineering PCL. (TREL)
Location	Sriracha, Chonburi, Thailand
Scope of Work	Existing Tank Modification Works, Demolition of 5 Nos of Tank & Tie In Work
Tank Type	ATM Storage Tanks
Project Award	July 7 th , 2020
Mechanical Completion Date	Apr 30 th , 2022



SCOPE OF WORK P11P4474



Procurement

- Tank structure
- Plate Material
- Tank Insulation & Paint Material



Construction

- Modification Works for Existing Tank 51 nos. (Nozzle, Platform and Fire Fighting System)
- Demolition of Existing 5 nos. of Storage Tank.
- Tie-in Work 65 nos.

EXISTING TANK MODIFICATION WORKS

1. Install Shell _ Roof Nozzle (External _ Internal Tank)



2. Install FW _ Foam Support



EXISTING TANK MODIFICATION WORKS

3. Install FW _ Foam pipe



4. FW Water spray testing



EXISTING TANK MODIFICATION WORKS



5. Localized hydrostatic test



6. Install Platform _ Ladder



EXISTING TANK MODIFICATION WORKS



7. Painting External



8. Painting Internal



EXISTING TANK MODIFICATION WORKS



7. Painting External



8. Painting Internal



EXISTING TANK MODIFICATION WORKS

9. Tie-in work (Fit-up, Weld, NDE, Painting, Bolt Tightening)



10. Re-install Insulation



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Our Cryogenic Journey



EPC of 1 Nos of 50,000cbm double wall tank for liquid Ammonia (-34 Deg C) storage. Full multidisciplinary EPC comprising compressor units, LP ground flare, MLAs, Jetty topside and FF facilities.

PTT Ammonia Storage Tank & Facilities, Rayong, Thailand



Construction of 151,000db of brownfield pipe installation and 711 tons of equipment installation

Samsung C&T - SLNG Phase 3 Expansion, Singapore



Fabrication & Construction of Two LNG Storage Tanks, 2 Nos of 250,317 m3

PTTLNG Nong Fab Receiving Terminal Project, Thailand



EPC of ISO Tank Loading and stacking area, with tie-in locations to JPTT.

CERCG, EPC of 6 bay, LNG ISO Tank Loading Facility, Singapore

2005

Vopak Ethylene Import/Export Terminal, Tianjin, China

EPC of a 15,000cbm refrigerated single containment steel wall tank with perlite insulation (-103 deg C) and ship unloading systems, buildings, substations etc



2011

PTT LNG Receiving Terminal, Rayong, Thailand

Construction of 9% Ni Carbon Steel Inner tank for 2 Nos of 160,000cbm Full Containment LNG Storage Tank under main contractor IHI.



2014

SLNG TLB, Singapore

EPC of 1 Nos of LNG Truck Loading Bay with integration to existing Terminal



2016

2019 (Ongoing)

Chhara LNG Terminal, India

Fabrication & Construction of Two LNG Storage Tanks, 2 Nos of 160,000 m3



2020 (Ongoing)

2021 (Ongoing)

Our Cryogenic Partners



List of Track Records – Engineering Studies



Cryogenic Projects under Rotary Group of Companies – Feasibility/FEED

YEAR OF CONTRACT	CLIENT	PROJECT TITLE	DESCRIPTION	LOCATION	SCOPE	DURATION
2019	<i>Confidential</i>	Feasibility study for conversion of Naphtha to LNG terminal	<ul style="list-style-type: none"> •Feasibility study of tank replacement from Naptha to LNG •3 Nos X 14,000cbm LNG tanks •Jetty Retrofitting & Topside works, pipe racks, flare and BOG compressors 	Singapore	EPC	-
2019	<i>Confidential</i>	Pre-FEED study for new LNG Terminal	<ul style="list-style-type: none"> •Engineering services for Quantitative Risk Analysis assistance •1 Nos X 180,000cbm LNG tank •Supporting auxiliary equipment •Reliquefication & BOG systems 	Singapore	EPC	-
2019	<i>Confidential</i>	Pre-FEED Proposal for new LNG Terminal	<ul style="list-style-type: none"> •1 Nos X 40,000 cbm LNG tank and supporting auxiliary equipment •New Jetty •Reliquefication& BOG Systems 	Lumut, Malaysia	EPC	-

List of Track Records - EPC



Cryogenic Projects under Rotary Group of Companies - EPC

YEAR OF CONTRACT	CLIENT	PROJECT TITLE	DESCRIPTION	LOCATION	SCOPE	DURATION
2018	TTCL Public Company Limited	PTT Global Chemical Public Company Limited Olefins Reconfiguration Project	<ul style="list-style-type: none"> •EPC of 1 number Ethylene Double Wall Tank (15,000cbm) •26m Diameter X 28m Height •Double wall API 620 tank 	Rayong, Thailand	EPC	June 2018 – April 2020
2017	Oil tanking Helios Singapore Pte Ltd	TF5 Propylene Bullet Tank Storage and its Related Facilities	<ul style="list-style-type: none"> • EPC of 2 numbers of mounded bullet tanks - with 2800m3 capacity each and its associated piping, equipment, electrical & instrumentation systems 	Singapore	EPC	Jan 2017 – Nov 2018
2015	SLNG	Temporary Truck Loading Facility	<ul style="list-style-type: none"> •1x Loading Facility for LNG trucks •Detailed engineering work for custody skid and LNG impoundment basin •Integrating of loading facility to the existing terminal (piping tie in works and E&I works) 	Jurong Island, Singapore	EPC	Jan 2016 – Dec 2016
2015	MLNG	PC12409 – Continuous Condensate Polisher Operation	<ul style="list-style-type: none"> •Mechanical /Piping Installation •Electrical, Instrument Calibration 	Malaysia	EPC	Jan 2015 – Apr 2015
2009	PTT Tank Terminal Co. Ltd.	Ammonia Storage Tank and Facilities Project	<ul style="list-style-type: none"> •Total storage facility of 50,000cbm. •Double wall tank(full containment) for liquid Ammonia (-34 degC) including BOG. •Detailed engineering work for tankage, civil, equipment sizing, piping, electrical & instrumentation. •Equipped with compressor unit, LP ground flare unit, marine loading arm, top side facilities of jetty and fire-fighting facilities. 	Rayong, Thailand	EPC	Oct 2009 – Feb 2011
2003	Vopak Ethylene Tianjin Terminal Co. Ltd.	Vopak Ethylene Tianjin Terminal	<ul style="list-style-type: none"> •Detailed engineering of ethylene import/export terminal facility •15,000 cbm cryogenic storage (1 tank). •Common facilities & utilities, including E&I works. 	Tianjin, China	EPC	Jul 2003 – Dec 2005

List of Track Records – Construction



Cryogenic Projects under Rotary Group of Companies - Construction

YEAR OF CONTRACT	CLIENT	PROJECT TITLE	DESCRIPTION	LOCATION	SCOPE	DURATION
2020	IHI Corporation	HPCL Shapoorji Energy Private Limited Chhara LNG Terminal	<ul style="list-style-type: none"> •2 numbers of 200,000 cbm LNG Storage Tanks (86m Dia) full containment at -165 Degrees Celsius) •Double wall API 620 tank – reinforced concrete outer wall, 9% Ni Carbon Steel inner wall 	Chhara, Gujarat India	Construction	Q1 2020 – Q2 2020 (ongoing)
2019	SPCC (Saipem-CTCI) JV	PTTLNG Nong Fab Receiving Terminal Project	<ul style="list-style-type: none"> •2 numbers of 250,000 cbm LNG Storage Tanks (90m Dia) full containment at -165 Degrees Celsius) •Double wall API 620 tank – reinforced concrete outer wall, 9% Ni Carbon Steel inner wall 	Rayong, Thailand	Construction	Aug 2019 – Dec 2021 (ongoing)
2015	Samsung C&T	Singapore LNG Terminal – Phase 3 Expansion Project for Piping & Mechanical Works	<ul style="list-style-type: none"> •Piping & structures. •Equipment installation. 	Jurong Island, Singapore	Construction	Dec 2015 – Dec 2017
2014	IHI (PTTLNG Company Limited)	LNG Receiving Terminal Expansion Project-Phase II	<ul style="list-style-type: none"> •Site tank mechanical works erection. •Fabrication of tank accessories. •Total storage capacity – 2 Nos. of 160,000 m3 full containment LNG Storage Tank @ Design temperature (-175)degree C. 	Rayong, Thailand	Construction	July 2014 – Feb 2016

List of Track Records - Construction



Cryogenic Projects under Rotary Group of Companies - Construction

YEAR OF CONTRACT	CLIENT	PROJECT TITLE	DESCRIPTION	LOCATION	SCOPE	DURATION
2013	MLNG	Industrial Effluent Treatment System (IETS)	•Electrical & Instrumentation	Malaysia	Construction	Apr 2013 – Jul 2013
2007	MLNG	Maintenance Services for MOD1/2/3/4/5/6/9/L PG & Non Modular DOSH	•Provision of Electrical Shutdown Inspection & maintenance services	Malaysia	Construction	Feb 2005 – Dec2008
2006	MLNG	Debottlenecking Project (MDD)	•E&I works for MOD 4,5 & 6	Malaysia	Construction	May 2006 – Sep2010
2003	MLNG	Rebuild Train 7	•E&I Construction in Existing Manufacturing Plant	Malaysia	Construction	Sep 2003 – Jan 2006
2001	MLNG	MLNG 3 EL2 Project	•E&I, Erection, Testing & Pre-commissioning and Supply of Bulk Materials	Malaysia	Construction	Jul 2001 – Mar2002
2003	MLNG	E&I Assistance for Train 7 & 8	•E&I Construction in Existing ManufacturingPlant	Malaysia	Construction	Jul 2003 – Dec2003

Ammonia Storage Tank and Facilities, Rayong, Thailand



Project Title	Ammonia Storage Tank and Facilities Project
Client	PTT Tank Terminal Co. Ltd.
Main Contractor	REL-TREL Joint Venture
Date of Commencement	Oct 2009
Date of Completion	Feb 2011
Scope Of Work	Engineering Design, Procurement and Construction: <ul style="list-style-type: none"> • Civil • Tankage • Piping & Structures • Equipment Installation • Electrical & Instrumentation

Project Description

- Total storage facility of 50,000cbm
- Double wall tank (full containment) for liquid Ammonia (-34 Degree Celsius) including BOG
- Detailed engineering work for tankage, civil, equipment sizing, piping, electrical & instrumentation
- Equipped with compressor unit, LP ground flare unit, marine loading arm, top side facilities of jetty and fire fighting facilities

LNG Receiving Terminal Expansion - Phase II, Rayong, Thailand



Project Title	LNG Receiving Terminal Expansion Project-Phase II
Client	PTTLNG Company Limited
Main Contractor	IHI Corporation, Japan
Date of Commencement	Jul 2014
Date of Completion	Mar 2017
Scope of Work	Construction of double wall tank

Project Description

- 2 LNG Storage Tanks with storage capacity of 160,000cbm
- Cryogenic tanks, full containment at -175 Degrees Celsius
- Double wall tank – Reinforced concrete outer wall and 9% Ni Carbon Steel inner wall

PTTLNG Nong Fab Receiving Terminal Project, Rayong, Thailand



Project Title	PTTLNG Nong Fab Receiving Terminal Project
Client	PTTLNG Company Limited
Main Contractor	SPCC (Saipem-CTCI) JV
Date of Commencement	Aug 2019
Date of Completion	Dec 2021 (ongoing)
Scope of Work	Construction of double wall tank

Project Description

- 2 LNG Storage Tanks, 90m Diameters and Storage Capacity of 250,000cbm each.
- Cryogenic Tanks, full containment at -165 Degrees Celsius
- Double wall API 620 tank - Reinforced concrete outer wall and 9% Ni Carbon Steel inner wall

Chhara LNG Terminal, Chhara, Gujarat India



Project Title	Chhara LNG Terminal
Owner	HPCL Shapoorji Energy Private Limited
Main Contractor	IHI Corporation
Date of Commencement	Q1 2020
Date of Completion	Q2 2022 (ongoing)
Scope Of Work	Prefabrication and Construction: • Tankage

Project Description

- 2 LNG Storage Tanks
- Storage Capacity of 200,000cbm (86m Diameters)
- Full Containment at -165 Degrees Celsius
- Double wall API 620 tank – Reinforced Concrete Outer Wall, 9% Ni Carbon Steel Inner Wall



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Smart thinking. Safe hands.

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