2022

ZTT

SUBMARINE CABLE & SYSTEM (ZTTSC) INTRODUCTION



Photo credit courtesy of ZTT SC domestic projects

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Title: Sales Manager
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ZTT 中天科技

Content

1 General Introduction

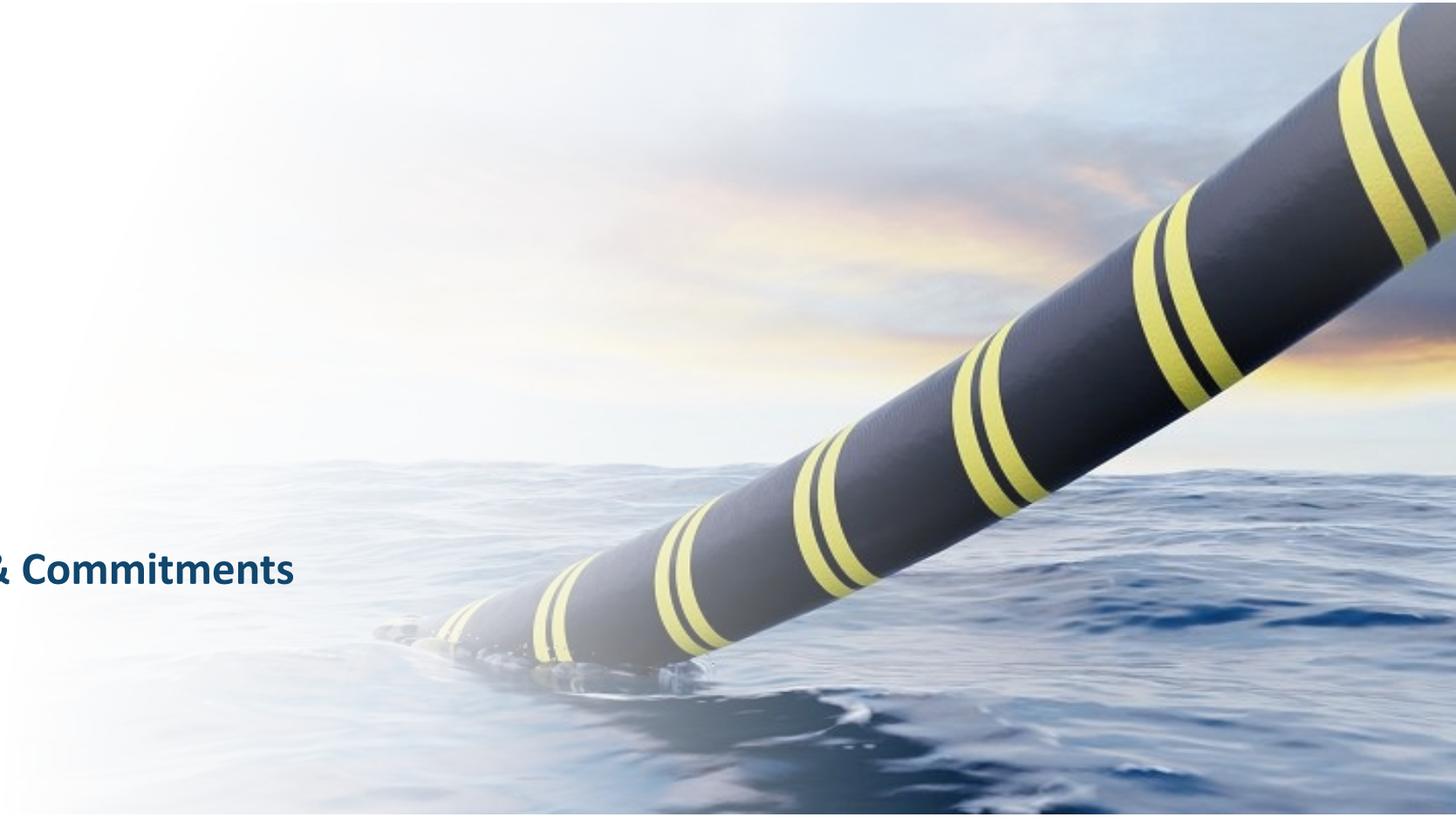
2 Products & Services

3 Capacities

4 QHSE

5 Social Responsibilities & Commitments

6 References





1 General Introduction

ZTT Group Overview

1992 Established

16,000+ Employees

$12.5 Billion Revenue.2021

76 Global Plants

160 Global Markets

上海證券交易所 SHANGHAI STOCK EXCHANGE

Stock Code 600522.SH

Milestone

1992
ZTT Group established in Nantong, China.

1999
ZTT first enter the marine & offshore industry.

2004
ZTT Submarine Cable Co., Ltd established.

2010
ZTT Instrument Cable for shipping board and equipment established.

2016
ZTT Marine System established to supply marine & offshore accessories and devices

2017
- ZTT invested into marine and offshore construction area.
- ZTT Marine Engineering established.

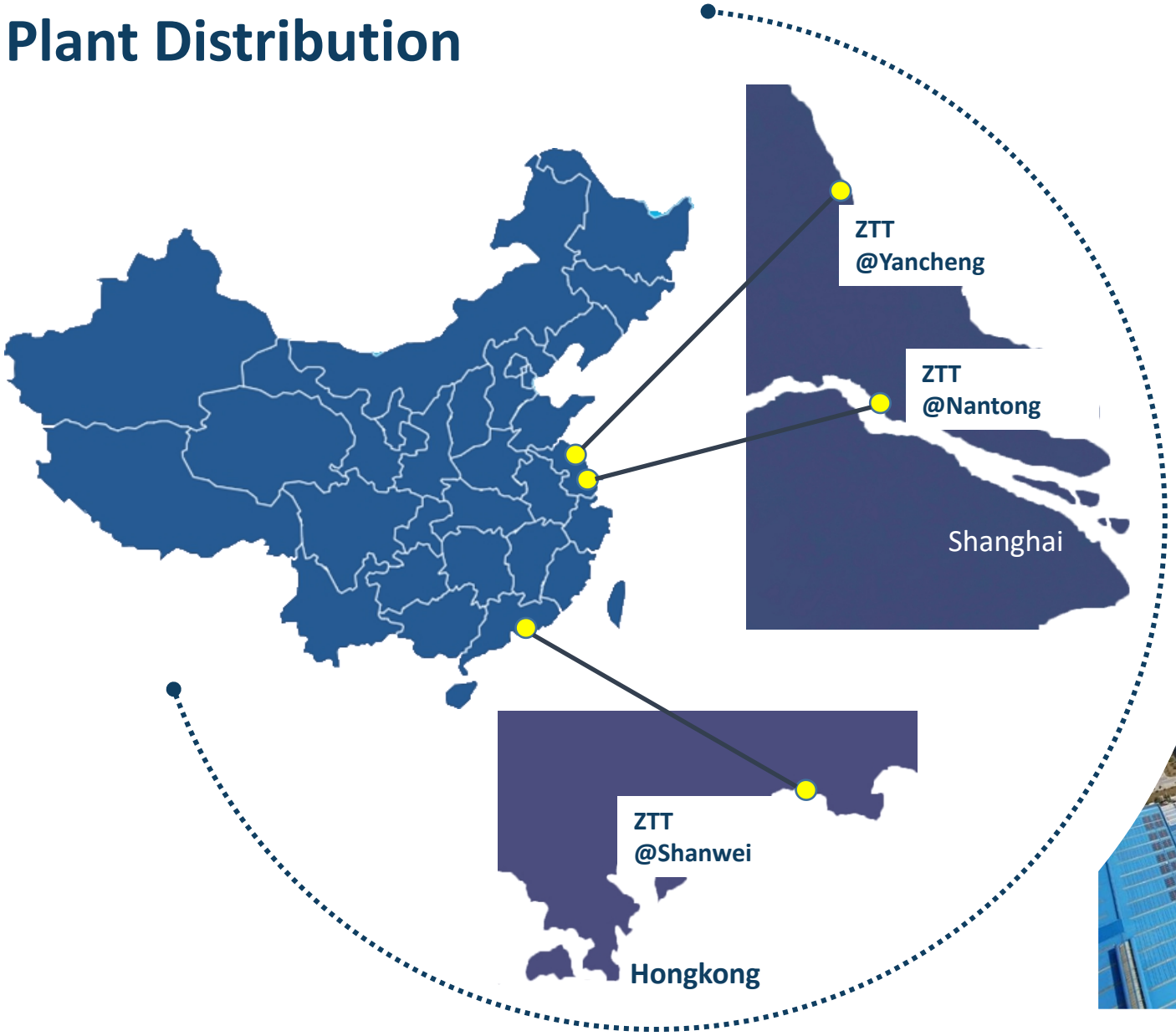
2018
ZTT unifies 4 marine offshore subsidiaries forming the ZTT Marine Industry Group.

2019
Nanhai Submarine Cable Co., Ltd established.

2020
Zhongtian Dafeng Submarine Cable Co., Ltd established.

2022
ZTT Submarine Cable will initiate IPO independence of the ZTT Group (China).

Plant Distribution









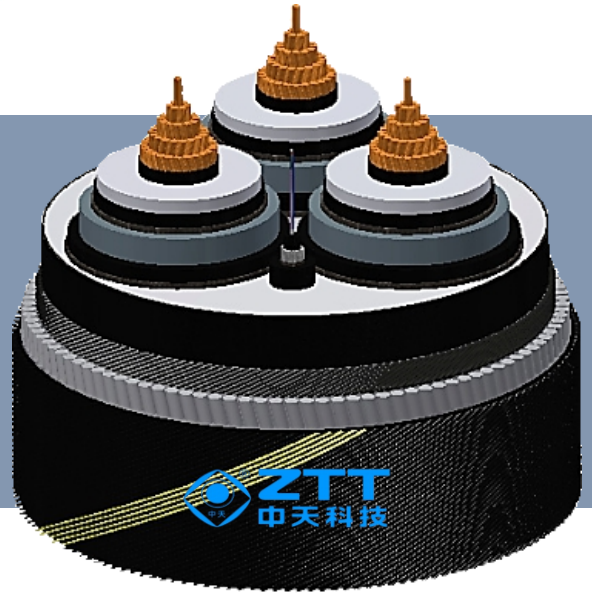


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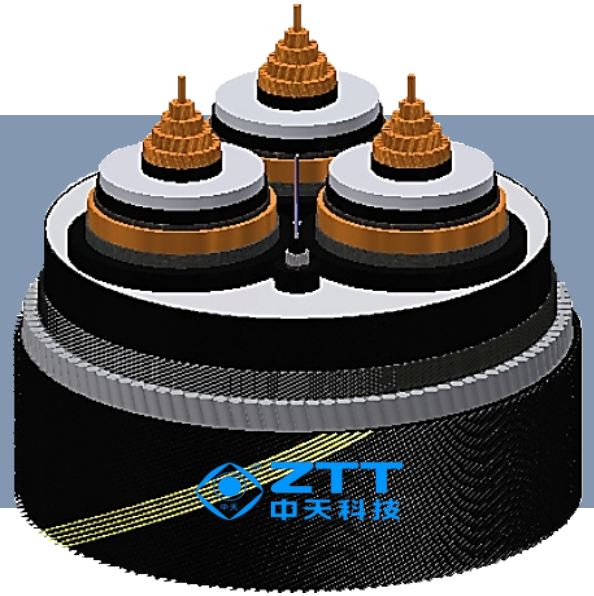
Products & Services

Submarine Cable

Submarine Power Cable / Submarine FO Composite Cable



Metallic Screen -
Lead Alloy



Metallic Screen -
Copper Tape



Metallic Screen -
Copper Wire + Copper Tape



Submarine Cable R&D Milestone

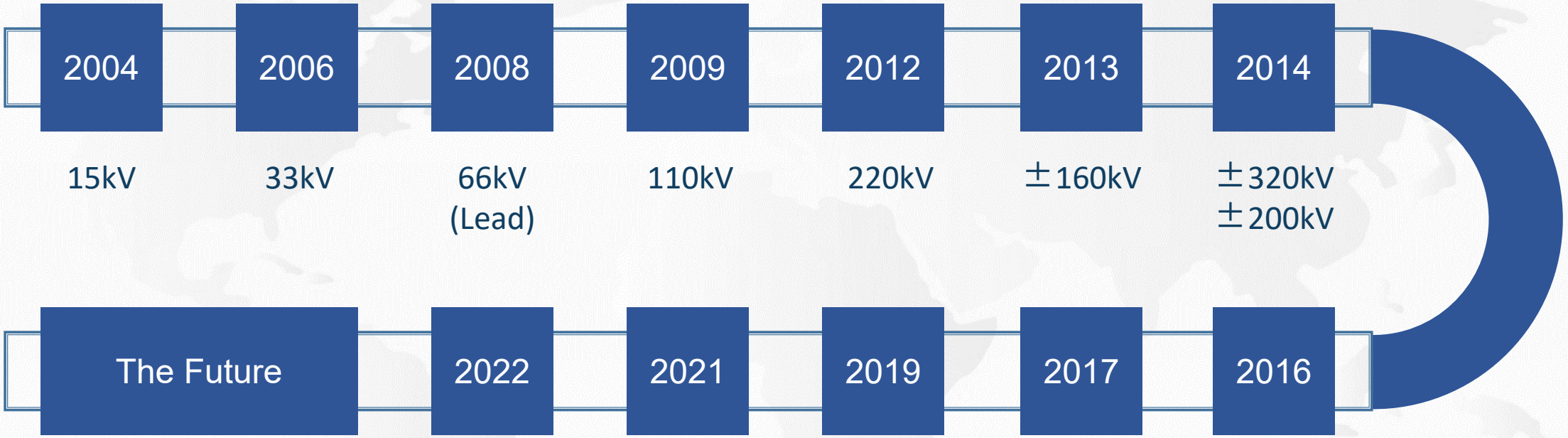




Photo credit courtesy by ZTT SC projects

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Facilities & Capacities

Factory Landscape













Photos credit courtesy of ZTT SC projects

Facilities & Capacities

VCV / CCV Production Line



Nanhai Plant @Shanwei

Three VCV lines

Two CCV lines

Submarine Cable



South Plant @Nantong

Three VCV lines

Two 220kV CCV lines

Submarine Cable



North Plant@Nantong

Four VCV lines

Eight CCV lines

Land Power Cable



Dafeng Plant @Yancheng

(Under construction)

One CCV line

MV Submarine Cable

General Production Capacities

Submarine Power / Composite Cables

Annual capacity:
- Cables below 220 kV: 1,500+ km
- Cables above 220 kV: 1,000+ km
- Maximal water depth: 1,000 m
- Can be calibrated for a deeper application

Max. Voltage:
- HVAC 500 kV
- HVDC ± 525 kV

Cross Section Area (CSA) Coverage:
- LV: 35mm² - 800mm² (3 cores)
- MV: 50mm² - 1,600mm² (3 cores)
- HV: 240mm² - 2,000mm² (3 cores)
- Single Core: Max. 3,000mm²

Submarine Fiber Optic Cables

Annual capacity:
- Include LW, LWP, SA, DA, RA (UJ & UQJ)
- 10,000+ km

Max. water depth:
- 8,000 m

Standard Production Flowchart



Copper wire drawing



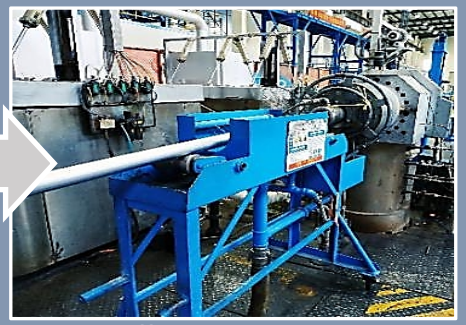
Copper wire stranding



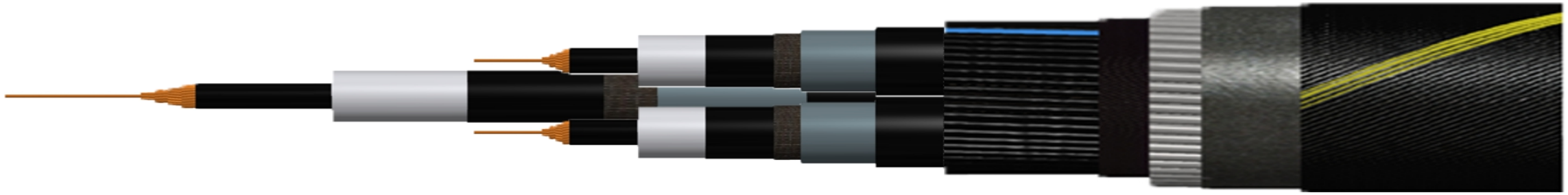
Insulation triple extrusion

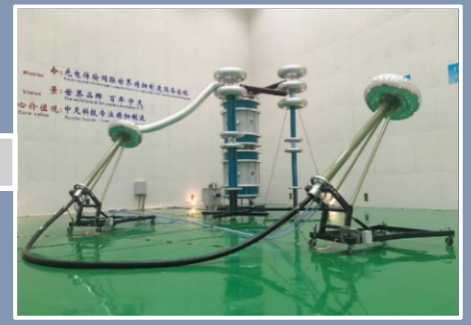


Degassing



Metallic screen





In-process PD, Voltage test



Vertical assembly+ Wire armor + PP yarn bedding and serving



Cable storage + FAT



Load out test

Storage carousel & ZTT owner's wharf @Nantong plant

Outdoor turntables for complete cable taking up:

[11] fixed turntables + [1] modular type turntable

- Max. Φ32m

- Max. 8,000 Tons (under expansion to 10,000 tons)

- Total Storage ability: 60,000 Tons

ZTT-own wharf with 9-12 m water depth for cable delivery;

Only 80m distant for factory production line to waiting vessel.






Package & Delivery Methods



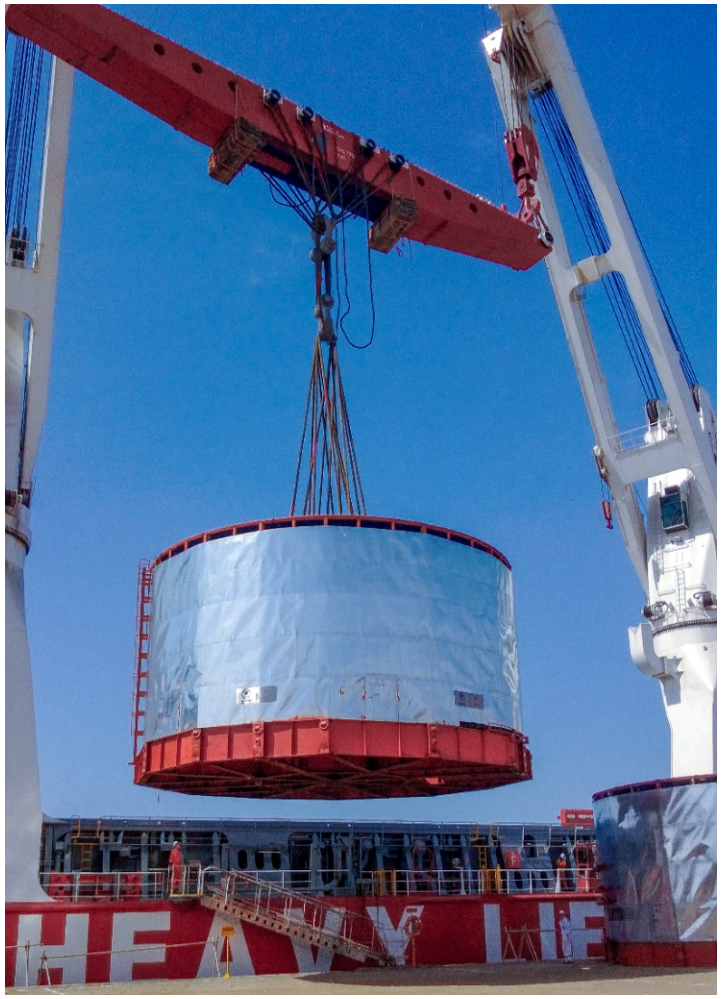
Electric Turn-table

Cable Drum





CLV Direct Loading



Cable Tank

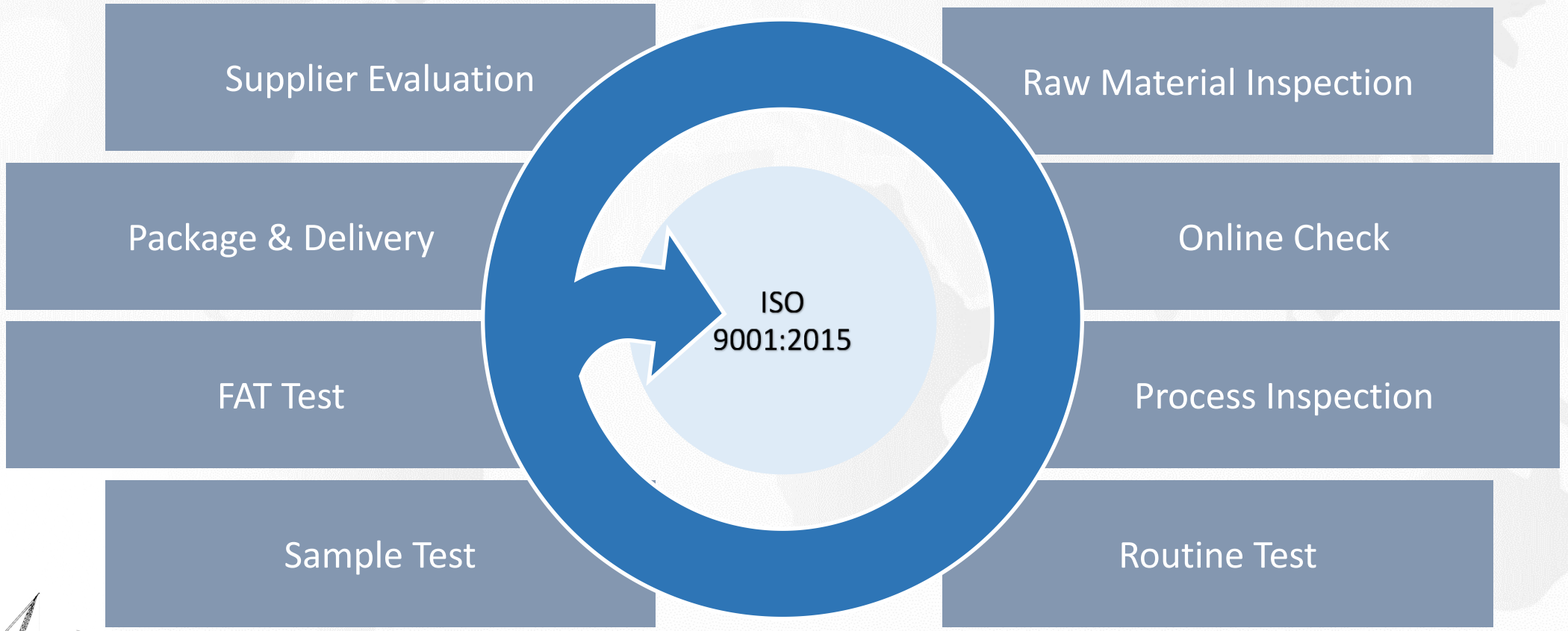




4

Quality, Health, Safety & Environment Management (QHSE)

Quality Control & HSE Construction





Certification & System

Project Management System

ISO21500 Audit

Safety Culture Ladder (Step 3)

Obtained the compliance certificate on March 9, 2022

Accounts & Projects Management System

CRM System



SAFETY CULTURE LADDER
SCL CERTIFICATE

3

LRQA

Zhongtian Technology Submarine Cable Co., Ltd.

CERTIFICATE NO:
10432048

CERTIFICATION AWARDED TO:
No. 1, Xinkainan Road, Nantong Economic & Technological Development Zone,
Jiangsu Province, P. R. China

CHAMBER OF COMMERCE REGISTRATIONNUMBER:
91320691767357160W

MEETS THE REQUIREMENTS OF THE STANDARD:
Safety Culture Ladder Certification scheme version 4.0 dated 1 July 2016

ACHIEVED STEP 3 FOR THE SCOPE:
Design and developing, engineering, procurement, manufacturing, contracting, construction management, commissioning and service of submarine cable system, including submarine power cable, submarine optical cable, submarine composite cable and their accessories, and safety management for offshore and onshore activity.

THIS CERTIFICATE IS VALID FROM:
4 February 2022

THIS CERTIFICATE IS FIRST ISSUED:
9 March 2022

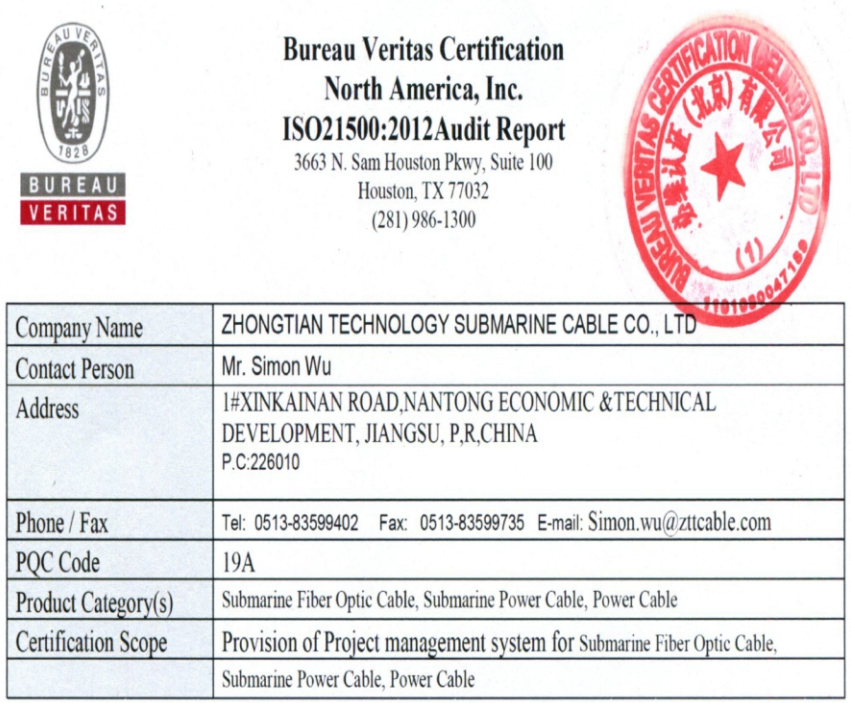
THIS CERTIFICATE IS VALID UNTIL:
3 February 2025

ASSESSMENT CARRIED OUT UNDER SUPERVISION OF:
Steinz Remo
Jakie Guo

ON BEHALF OF Lloyd's Register Quality Assurance (Shanghai) Co., Ltd.
Area Operations Manager, North Asia
Rhett Wang

Room 1901-02, Ocean Towns, No.550 Yan An Dong Road, 200001 Shanghai, People's Republic of China

SAFETY CULTURE LADDER
NEN



BUREAU VERITAS

Bureau Veritas Certification
North America, Inc.
ISO21500:2012Audit Report
3663 N. Sam Houston Pkwy, Suite 100
Houston, TX 77032
(281) 986-1300

Company Name	ZHONGTIAN TECHNOLOGY SUBMARINE CABLE CO., LTD
Contact Person	Mr. Simon Wu
Address	1#XINKAINAN ROAD,NANTONG ECONOMIC &TECHNICAL DEVELOPMENT, JIANGSU, P,R,CHINA P.C:226010
Phone / Fax	Tel: 0513-83599402 Fax: 0513-83599735 E-mail: Simon.wu@zttcable.com
PQC Code	19A
Product Category(s)	Submarine Fiber Optic Cable, Submarine Power Cable, Power Cable
Certification Scope	Provision of Project management system for Submarine Fiber Optic Cable,
	Submarine Power Cable, Power Cable

Neocrm



Photo credit courtesy of ZTT SC domestic projects

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EXTRACT References

References

Global Clients



Record Summary Worldwide

Cable supply record up till February 2022

Submarine Power Cable

By Location

In China: **5,796.00** km

Outside of China: **1,591.00** km

By Voltage

High voltage (≥ 66kV): **2,631.00** km

Low & Middle voltage (＜66kV): **4,756.00** km

By Industry

Wind farm: **4,546.00** km

Oil & gas: **1,788.00** km

Power transmission for islands & others: **1,053.00** km



Total: 7,387 km

Submarine Fiber Optic Cable

In China:

4,651.16 km

Outside of China:

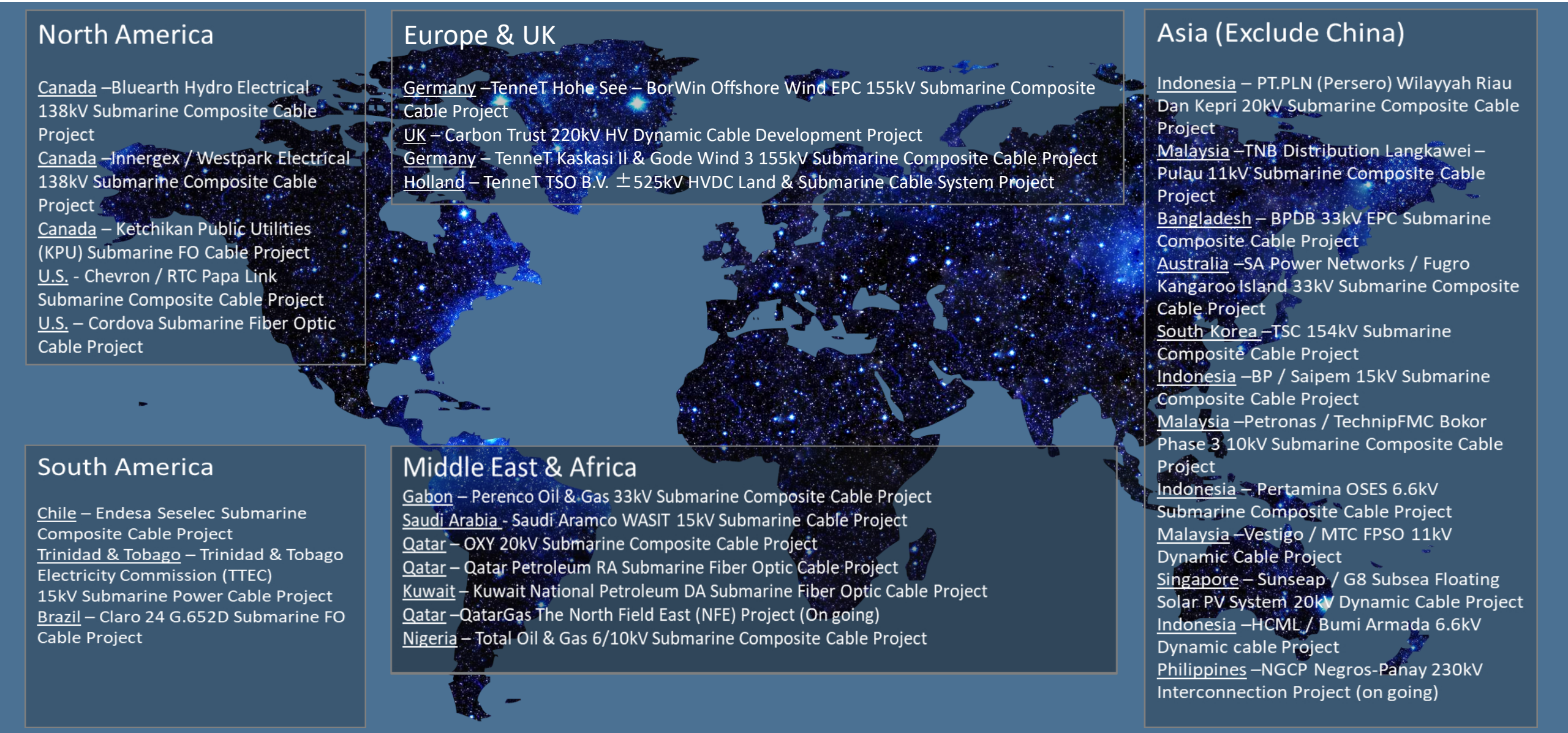
Oil & gas: **660.68** km

Tele-communications: **913.07** km

Total: 6,224.91 km

References

Typical Records Worldwide



North America

Canada –Bluearth Hydro Electrical 138kV Submarine Composite Cable Project
Canada –Innergex / Westpark Electrical 138kV Submarine Composite Cable Project
Canada – Ketchikan Public Utilities (KPU) Submarine FO Cable Project
U.S. - Chevron / RTC Papa Link Submarine Composite Cable Project
U.S. – Cordova Submarine Fiber Optic Cable Project

Europe & UK

Germany –TenneT Hohe See – BorWin Offshore Wind EPC 155kV Submarine Composite Cable Project
UK – Carbon Trust 220kV HV Dynamic Cable Development Project
Germany – TenneT Kaskasi II & Gode Wind 3 155kV Submarine Composite Cable Project
Holland – TenneT TSO B.V. ±525kV HVDC Land & Submarine Cable System Project

Asia (Exclude China)

Indonesia – PT.PLN (Persero) Wilayyah Riau Dan Kepri 20kV Submarine Composite Cable Project
Malaysia –TNB Distribution Langkawei – Pulau 11kV Submarine Composite Cable Project
Bangladesh – BPDB 33kV EPC Submarine Composite Cable Project
Australia –SA Power Networks / Fugro Kangaroo Island 33kV Submarine Composite Cable Project
South Korea –TSC 154kV Submarine Composite Cable Project
Indonesia –BP / Saipem 15kV Submarine Composite Cable Project
Malaysia –Petronas / TechnipFMC Bokor Phase 3 10kV Submarine Composite Cable Project
Indonesia – Pertamina OSES 6.6kV Submarine Composite Cable Project
Malaysia –Vestigo / MTC FPSO 11kV Dynamic Cable Project
Singapore – Sunseap / G8 Subsea Floating Solar PV System 20kV Dynamic Cable Project
Indonesia –HCML / Bumi Armada 6.6kV Dynamic cable Project
Philippines –NGCP Negros-Panay 230kV Interconnection Project (on going)

South America

Chile – Endesa Seselec Submarine Composite Cable Project
Trinidad & Tobago – Trinidad & Tobago Electricity Commission (TTEC) 15kV Submarine Power Cable Project
Brazil – Claro 24 G.652D Submarine FO Cable Project

Middle East & Africa

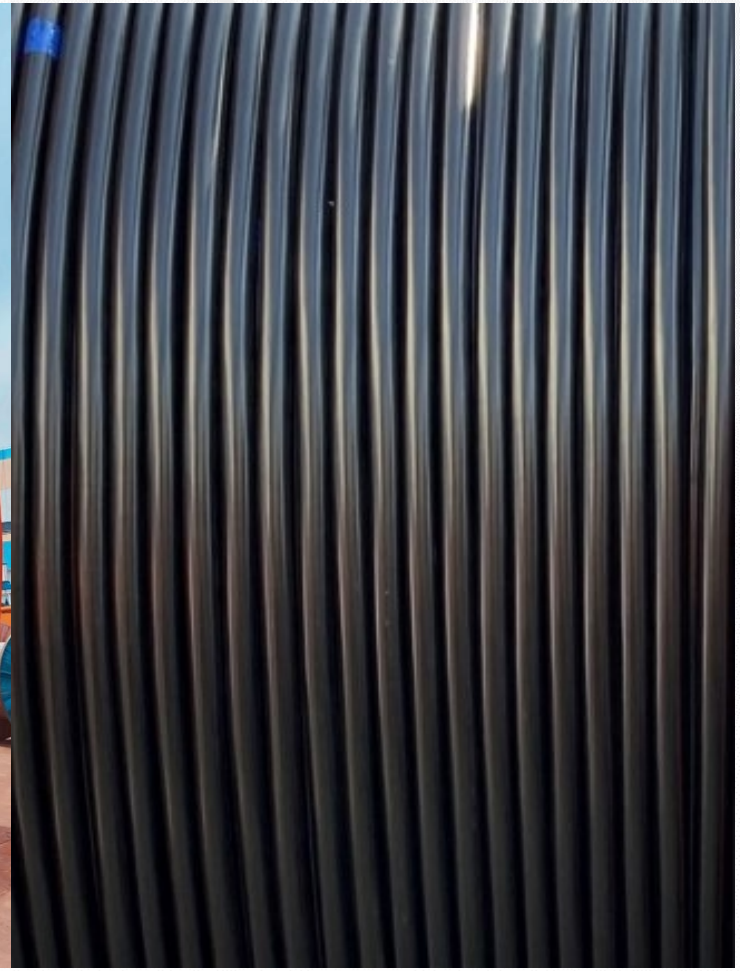
Gabon – Perenco Oil & Gas 33kV Submarine Composite Cable Project
Saudi Arabia - Saudi Aramco WASIT 15kV Submarine Cable Project
Qatar – OXY 20kV Submarine Composite Cable Project
Qatar – Qatar Petroleum RA Submarine Fiber Optic Cable Project
Kuwait – Kuwait National Petroleum DA Submarine Fiber Optic Cable Project
Qatar –QatarGas The North Field East (NFE) Project (On going)
Nigeria – Total Oil & Gas 6/10kV Submarine Composite Cable Project

Typical Project Records

– Oil & GAS

Nigeria – Total Oil & Gas 6/10kV Submarine Composite Cable Project





Photos credit courtesy of ZTTSC projects

TotalEnergies

IKIKE PROJECT

- **End User**: Total Energies
- **Project Location:** Port Harcourt
- **Contract Period:** Aug.2020-Jun.2021
- **Cable Type:** 6/10kV,3*70mm^2,Copper Tape, 2×24G.652D
- **Total Cable Length:** 16.5km
- **Max. Water Depth:** 37m

Gabon – Perenco Oil & Gas 33kV Submarine Composite Cable Project



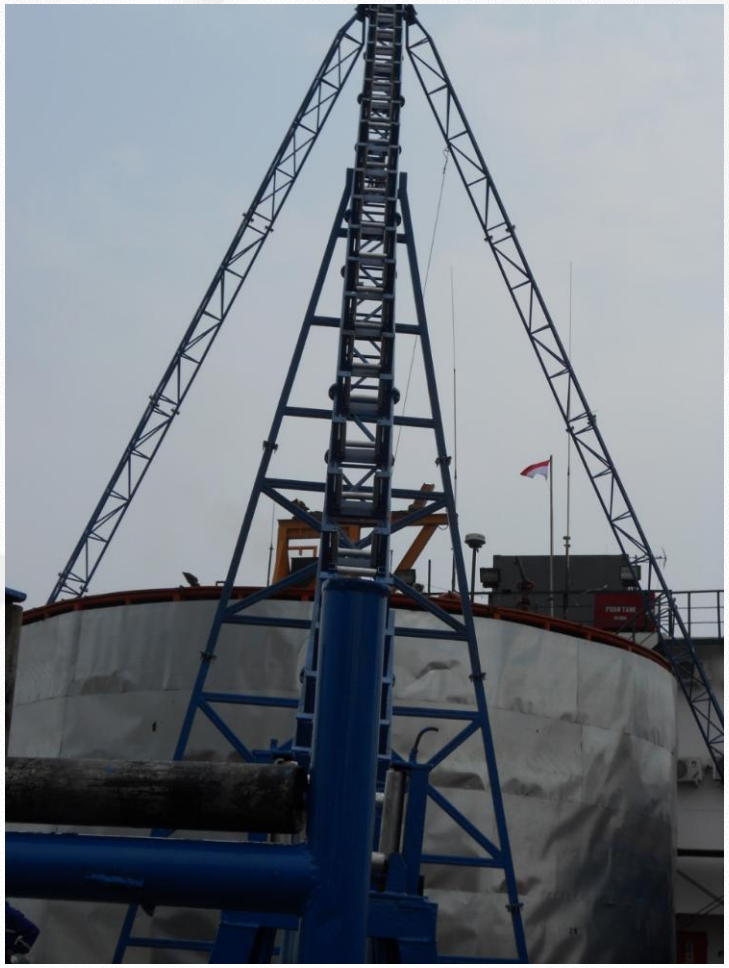
Photos credit courtesy of ZTTSC projects

PERENCO

- **End User**: Perenco Oil & Gas Gabon S.A.
- **Project Location:** Africa
- **Contract Period:** Jan.2020-Jun.2021
- **Cable Type:** 33kV,3*50/300/400 mm^2, Copper Wire+Copper Tape Metal Screen, Aluminated Tape Water Resistant Layer, FO
- **Total Cable Length:** 113.55km
- **Max. Water Depth:** 100m

Indonesia - CNOOC SES Replacement KRI B-SUN A Submarine Composite Cable Project





Photos credit courtesy of ZTTSC projects

CNOOC SES Ltd.

- **End User**: CNOOC SES
- **Project Location:** Java Sea
- **Contract Period:** May.2012-Aug.2012
- **EPC Contractor:** PT Indosama Persada
- **Cable Type:** 15 kV, 3*1/0 AWG, Copepr Tape + HDPE Sheath
- **Total Cable Length:** 24.994km
- **Max. Water Depth:** 30m

Saudi Arabia - Saudi Aramco WASIT 15kV Submarine Cable Project





أرامكو السعودية
saudi aramco

- **End User**: Saudi Aramco
- **Project Location:** Saudi Arabia
- **Contract Period:** Feb.2011-Dec.2013
- **EPC Contractor:** Saipem
- **Cable Type:** 15kV,3*240mm^2 ,copper conductor
- **Total Cable Length:** 160km
- **Max. Water Depth:** 150m

Photos credit courtesy of ZTTSC projects

Qatar – OXY 20kV Submarine Composite Cable Project



Photos credit courtesy of ZTTSC projects

OXY Occidental Petroleum of Qatar Ltd.
أوكسيدنتال للبترول قطر المحدودة

- **End User**: OXY
- **Project Location:** Qatar's North Field
- **Contract Period:** Apr.2014-Dec.2014
- **Cable Type:** 20kV,3*240mm^2 ,copper cond
- **Total Cable Length:** 26.85km
- **Max. Water Depth:** 150m

Indonesia –BP / Saipem 15kV Submarine Composite Cable Project





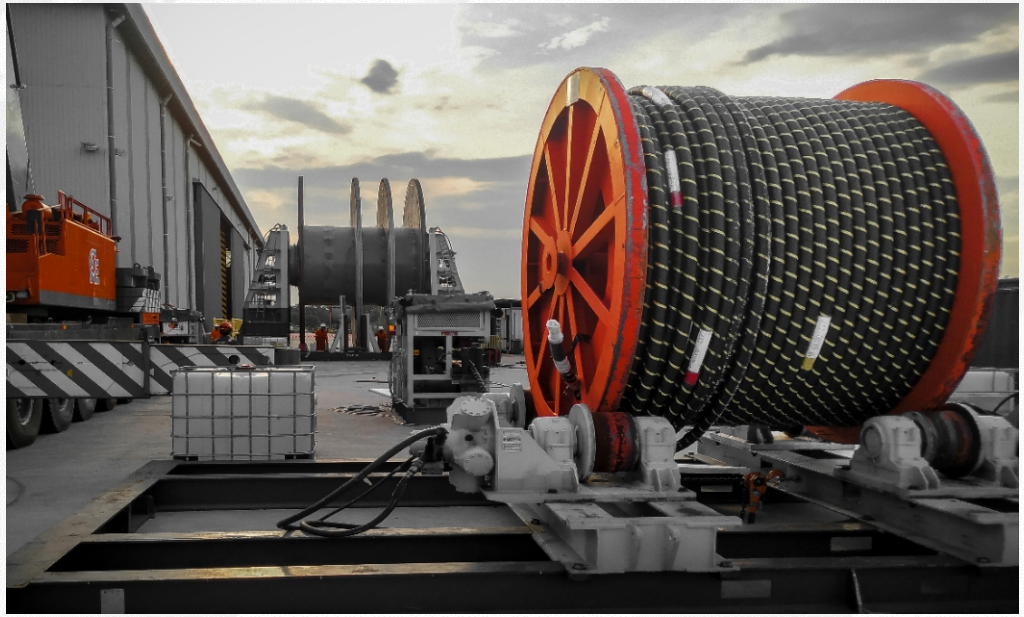


- **End User**: BP Indonesia
- **Project Location:** Papua
- **Contract Period:** Aug.2017-Dec.2018
- **EPC Contractor:** PT Saipem
- **Cable Type:** 15 kV,3*95 mm^2, Copper Tape+HDPE Sheath, FO, Control Cable
- **Total Cable Length:** 58.273km
- **Max. Water Depth:** 60m

Photos credit courtesy of ZTTSC projects

Malaysia –Petronas / TechnipFMC Bokor Phase 3 10kV Submarine Composite Cable Project











Photos credit courtesy of ZTTSC projects

PETRONAS TechnipFMC

- **End User**: Petronas
- **Project Location:** Baram Delta
- **Contract Period:** Feb.2019-May.2019
- **EPC Contractor:** Technip&FMC
- **Cable Type:** 10 kV, 3*70/4*120/4*240 mm^2, Copper Tape +HDPE Sheath, FO
- **Total Cable Length:** 3.7km
- **Max. Water Depth:** 70m

Vietnam – Material for Subsea Cables 22kV BK21-BK19

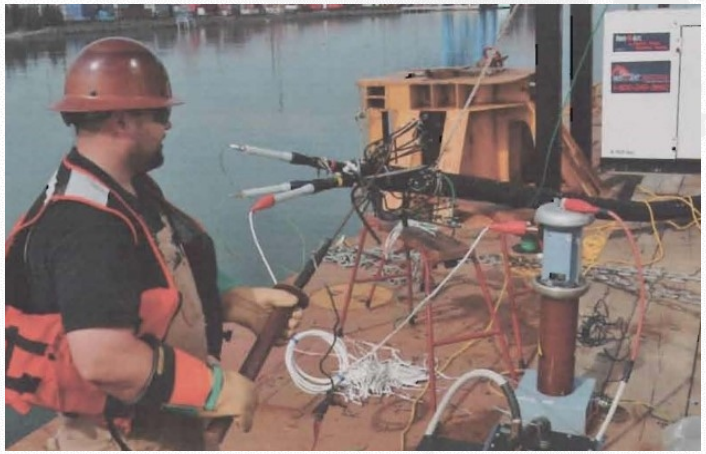


VIETSOVPETRO

- **End User**: VietSovPetro
- **Project Location:** Vietnam
- **Contract Period:** Feb.2021-Sep.2021
- **EPC Contractor:** VPMC
- **Cable Type:** 22kV,3*50mm^2，Copper Wire+Copper Tape+Laminated Aluminium Foil Sheathed, FO
- **Total Cable Length:** 4.035km
- **Max. Water Depth:** 60m

Photos credit courtesy of ZTTSC projects

U.S. - Chevron / RTC Papa Link Submarine Composite Cable Project



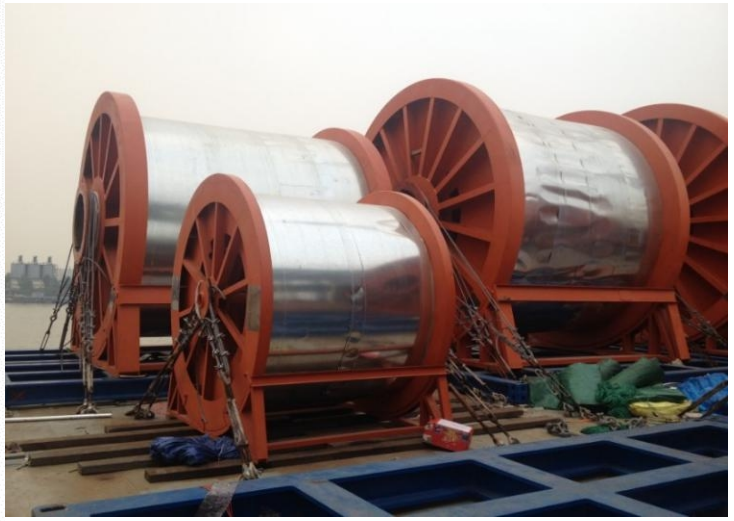


Project Name	Voltage Level	Cable Length	Delivery Date
Chevron / RTC Papa Link Submarine Composite Cable Project	13.8kV	7.47km	Sept. 2011
Chevron / RTC MP299 Submarine Composite Cable Project	20kV	1.688km	Feb. 2014
Chevron Nigeria CVX Submarine Composite Cable Project	5kV	4.9km	Jan. 2015
Chevron CABGOC Submarine Composite Cable Project	13.8kV	68.6km	On-going

Photos credit courtesy of ZTTSC projects

- **End User**: Chevron
- **Project Location:** Gulf of Mexico
- **Contract Period:** 2010-Present
- **EPC Contractor:** RT Casey
- **Cable Type:** MV Submarine Power Cable with FO unit
- **Total Cable Length:** 80+km
- **Max. Water Depth:** 100m

Qatar – Qatar Petroleum RA Submarine Fiber Optic Cable Project





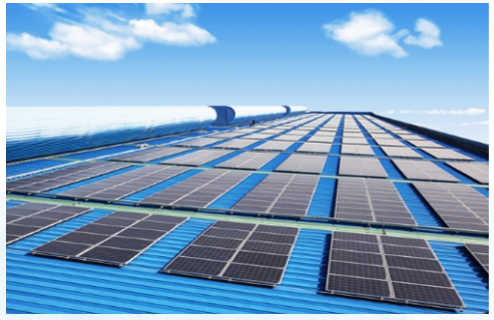
Photos credit courtesy of ZTTSC projects

- **End User**: Qatar Petroleum
- **Project Location:** Doha, Qatar
- **Contract Period:** 2013-2014
- **EPC Contractor:** NPCC
- **Cable Type:** Double Armor 24*G652D
- **Total Cable Length:** 330km
- **Max. Water Depth:** 150m

ZTT, the critical link that powers the energy WORLD!



Environment friendly products



20% office power consumption supplied by solar energy



522,000 tons carbon emission reduction



4,000 cubic tons water saved annually



$10 million investment plan for environmental protection

Contact: Henry Hua
E-mail: henry.hua@zttcable.com; zttsc@zttcable.com
Website: www.zttcable.com

LinkedIn ZTT SUBMARINE CABLE & SYSTEM

Marine Industry Group / Zhongtian Technology Submarine Cable Co., Ltd. (ZTT SC)
Add: No.1 South Xinkai Road, Nantong ETDA, Jiangsu Province, China. 226009

Membership Accreditations

IMCA · CREDIT · dun & bradstreet · UJ Consortium · Achilles · International Cable Protection Committee

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