

Where energies make tomorrow ●

Technip Energies in Senegal

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**TECHNIP
ENERGIES**



A unique offering

Technip Energies is a world-leading engineering and technology company for the energy transition. We draw on an extended range of technologies, products and services to bring client projects to life, while pushing back the boundaries of innovation to speed up the energy transition and build a better future.

ACTIVE ACROSS THE WHOLE VALUE CHAIN

PROJECT DELIVERY

- Project Management
- Engineering, procurement and construction
- Technology integration in complex projects
- Digital applications for project delivery, safe and profitable operations and maintenance
- Project Financing

TECHNOLOGY, PRODUCTS AND SERVICES

- Product technology and licensing
- Intellectual property, Loading Systems and Cybernetix
- Feasibility and concept studies, FEED
- Genesis consulting services, project management consultancy, selective commercial approach

MULTIPLE MARKETS

- LNG and gas commercialisation
- Sustainable chemistry
- Hydrogen
- CO₂ management
- Offshore
- Refining
- Ethylene
- Petrochemicals
- Fertilisers
- Mining and metals
- Nuclear
- Life sciences
- Agritech



EPC project management and delivery

Technip Energies delivers a range of services in engineering, procurement and construction, supported by singular project management skills.

We offer unrivalled expertise in the construction of refineries and integrated petrochemical complexes.

We develop our designs using highly advanced optimisation methods and techniques, including constructibility reviews, energy audits, HAZOP reviews, dynamic simulations and facility reliability analysis.

ENGINEERING

We deliver an extensive panel of engineering services including the concept and basic design phase, FEED services, robust costing estimates and optimised facility configuration.

PROCUREMENT

As a leading global player, we enjoy competitive procurement pricing through our team responsible for purchasing and order deliveries, inspection of incoming equipment and materials, logistics management, and the identification of new suppliers.

CONSTRUCTION

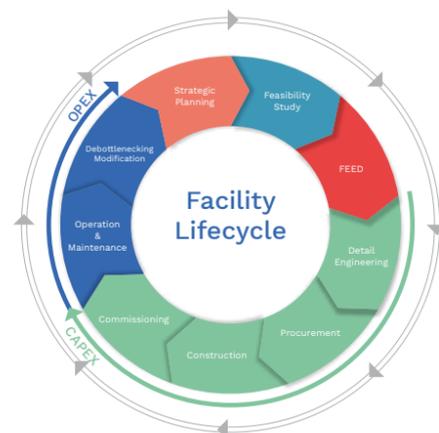
Our operational centres design and manage construction activities, affording us better knowledge of local markets. Our construction methods centre in Abu Dhabi provides supervision resources, support in developing construction methods and processes, while fostering long-term partnerships in construction activities.

PROJECT MANAGEMENT

For a number of decades, we have demonstrated our capacity to successfully manage all types and sizes of industrial projects around the world. Our experience ranges from project management consultancy services to turnkey executions for all types of contractual models.

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Excellence in Project Management



A preferred partner from the outset

Our skills come into play in the very first project phases, to develop strategic investments solutions in refining and petrochemicals. We support clients in building their visions on solid technical and economic foundations.

CONCEPT STUDIES, BASIC DESIGN

- Masterplans / de-bottlenecking / modernisation and expansion design work
- Processes, energies, offsite concept design
- Process unit design
- Technology appraisal, selection of leasing owners



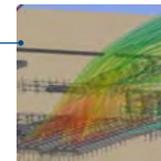
ENGINEERING SUPPORT SERVICES

- Reliability, availability and maintainability design
- Operator training simulator management
- Process training
- Temporary detachment of process engineers



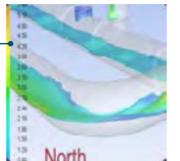
HSE ENGINEERING SERVICES

- HSE review
- Modelling of hazardous phenomena / risk analysis
- Environmental and sanitary design
- Structural response and optimisation
- Investigation support for accidents and near-misses



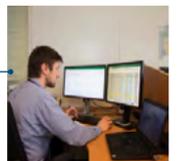
ADVANCED CALCULATIONS

- Static and dynamic process simulations / Power surge analysis
- De-pressurisation studies
- Dynamic flow computation
- Special equipment design



OPERATIONAL SUPPORT

- Commissioning / Testing support
- Process repair
- Process support and rotation interval
- Operator advisory
- Process optimisation, optimised operations



TECHNICAL AUDITS

- Assessment of energy efficiency and performance
- Technical audits of facilities
- Environmental impact review and performance review
- Reasonable technical and technological due diligence



The energy transition is our business

Our energy transition strategy comprises four pillars: LNG, sustainable chemistry, decarbonisation and carbon-free energy solutions. With our extensive experience and skills developed through years of work in transforming the energy sector, we empower our clients to achieve their energy transition aims.



LNG

Medium and large-scale projects -
Floating modularity

Natural gas and LNG in particular is a key fuel in the energy transition, cutting the CO₂ emissions produced by electricity production by half compared to coal.

- 60+ years experience in LNG, on medium and large-scale projects
- Leader in engineering and project management, deadlines observed
- Cost, schedule, and performance: guaranteed to be optimised
- Over 20% of market share and 100% of Open Sea FLNG market

LNG is the only fossil-derived fuel whose use will increase by 2040, as we transition to a demand for sustainable energy.



Sustainable Chemistry

Biofuels - Biochemistry -
Circular economy

Delivering solutions for the production of sustainable and recyclable products.

- Singular offering combining technology and EPC project delivery capacities
- Proprietary technologies and support in process selection
- Proven skills in chemistry, petrochemicals, refining and fermentation processes
- Multiple technology and R&D centres around the world with dedicated experts

We deploy new technologies on growth markets, from their pilot phase to industrial-scale roll-out.



Decarbonization

Energy efficiency - CCUS -
Blue hydrogen

Businesses implement carbon reduction programmes to achieve rigorous objectives in terms of energy efficiency and emissions, driven by a growing number of stakeholders.

- Proven EPC skills and technology experience
- Leader in the hydrogen industry
- Best technical and economic carbon management strategies
- Sustainable technologies, innovative process design and R&D capacities

Our solutions range from energy efficiency to total carbon elimination, adapting to a variety of client challenges and requirements.



Carbon-Free Energy Solutions

Green hydrogen - Marine /
Nuclear project management

Zero-carbon solutions raise multiple technical and commercial challenges, requiring the integration of several technologies.

- Advisory, full project management and turnkey delivery.
- World leader and vast experience on the hydrogen market
- Budget optimisation
- Leading edge technologies and partnerships
- Global experience and presence

We deliver solutions and technologies to build zero-carbon energy systems.

“Speed up the transition to a low-carbon society”

Renowned expertise in project execution in Senegal



Technip Energies in Senegal offers its clients extensive experience in onshore and offshore turnkey project execution.

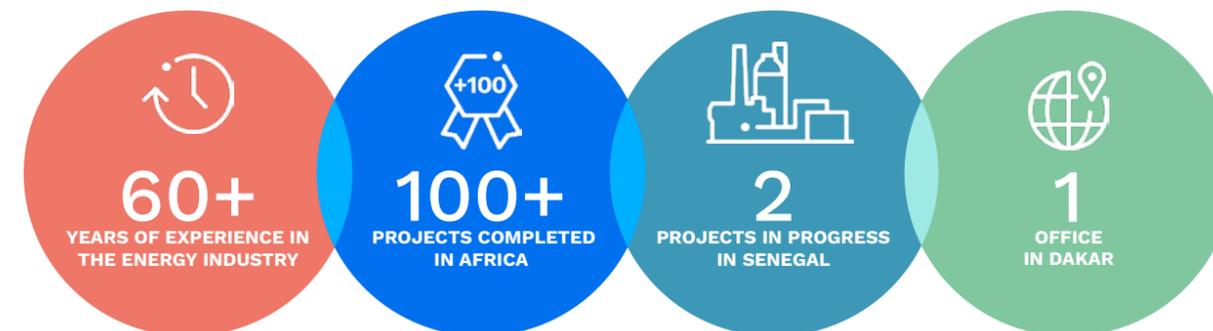
With over 60 year of experience in project execution notably in Africa, Technip Energies can satisfy the needs of all its clients in Senegal, proposing an integrated offering addressing the whole value chain from initial concept studies to the delivery of onshore and offshore turnkey projects.

We deliver the expertise required to complete your projects during the design phase or Engineering, Procurement and Construction management phases, and to support project financing.

Since 2017, Technip Energies has been active in Senegal to keep a watchful eye on

current projects. We share the vision of Senegal for optimised management of energy resources.

Technip Energies aims to assist Senegal in the execution of future projects, delivering expertise and contributing to the development of local resources, notably through the transfer of knowledge and technologies as well as using Senegalese businesses and labour.



Our challenge: local development

Technip Energies advocates domestic content, an essential factor in long-term development.

DIVERSE LOCAL PRESENCE

- SIES fertilizer plant, acid units for chemical industries in Senegal (ICS) and studies for the SAR refinery
- BP Tortue FPSO
- Adaptation of the SAR refinery - Upgrade phase 1
- Afrig (mining company) - Scoping study and signature of a protocol agreement
- November 2017: Technip Engineering Defence Senegal office opened in Dakar

Firm commitment to national players

Our proactive approach in Senegal features a sustainable approach to growth and in this respect agreements were signed in 2018 with various local official stakeholders and private companies.

- Knowledge transfer
- Technology transfer
- Subcontracting
- Technical support
- Know-how transfer

• Knowledge transfer
• Technology transfer

• Subcontracting
• Technical support
• Know-how transfer

Emerging talent and expertise

In the course of our projects, we use Senegal contractors and labour. We implement initiatives to transfer knowledge, aiming to encourage the development of Senegalese resources by generating local talent and expertise. These initiatives strengthen the skills of local firms and enable the use of such resources in future projects.

Subcontracting and local labour

Our strategy for action in Senegal includes a variety of initiatives, which will strive to implement as much as possible:

- Assigning work contracts to Senegalese companies with local ownership
- Using Senegalese labour resources
- Supporting local players in developing their skills

Training

Training is a key component of our development activities in Senegal. These are especially reflected in our partnership with Senegal's National Institute of Oil and Gas (INPG) to build local expertise:

- Funding student bursaries
- Internships on our projects
- Integration of graduate engineers into our project teams

Our activities also include dedicated training and informative workshops for industry professionals.



The ACATBS project

Expand the capacity of the SAR refinery and adapt it to process Sangomar crude

KEY DETAILS

- **Client:** Société Africaine de Raffinage (SAR)
- **Date allocated:** 2019
- **Location:** Mbao, Senegal
- **Scope** EPsCm

The project consists in adapting the SAR refinery to process future Sangomar crude. This requires us to modernise several existing processing units and build new units, to increase production capacity. Domestic Content represents a **significant component** of this project through **subcontracting**, use of **local resources and training**. We are supported in the Construction phase by Senegalese firms specialised in civil engineering, structural framework, pipework, and mechanical assembly. For the time they are active on the project, local workers and subcontractors receive on-the-job training as per international Oil & Gas standards.



Reconfigure

- Objective: adapt the unit to address market needs
- Process Sangomar crude at 180 tonnes/hour and reduce oil imports



Preflash

- Aim: increase processing capacity by 30%
- 1.2 to 1.5 m tonnes/year

QHSE

500,000 hours with zero workplace accidents (May 2021)

DOMESTIC CONTENT

- 80% of contracts allocated to local providers
- 78% of labour contracted is local



Our CSR initiatives in Senegal

Technip Energies committed to supporting growth through long-term investment for education, skills development, job creation and support for local communities.

The Senegalese communities we work with are significant stakeholders and we endeavour to be a socially responsible business.

A sustainable CSR commitment

We deploy CSR initiatives to support sustainable development (in education, health, environmental protection), including:

- Covid-19: EUR 30,000 donated to two hospitals treating sufferers (funded by SAR project (ACATBS)).
- ASEDEME (children with mental impairments):
 - Contribution to the acquisition of a school bus to transport children
 - Support in adapting certain buildings
 - Coverage of school bursaries



Our office in Dakar

Technip Engineering Defence Senegal office opened in 2017.

- Immeuble SCIA 2, Route de King Fahd Palace, Dakar – Sénégal
- 12 employees
- 58% Senegalese nationals
- Our references:
 - Project Tortue FPSO
 - SAR Modernisation Phase I

Effective and sustainable financing solutions

Technip Energies delivers integrated industrial solutions focused on the execution of client projects. We enjoy close links with export credit agencies and have the capacity to support our clients in financing their projects. We fully back our clients through all project phases from design through construction to commissioning.



Customised, effective support to facilitate project financing

Selective, structured financing arrangements through to financial closing

- Strong bargaining positions with banks through our use of a wide range of banking products and services
- Privileged relationships with Export Credit Agencies (ECA) and their representative financial institutions, especially Bpifrance, Sace (Italy) and Euler-Hermes (Germany). In-depth knowledge of the process and expectations of ECA with capacity to obtain letters of interest; extensive experience earned through successful financing of multiple projects

- Expertise in project management and in-depth credit risk assessments of primary players during the construction phase, offering lenders a high degree of reliability for project execution

Secure financing solutions

- Early engagement to assess project bankability, including assessment of project economics if necessary.
- Delivery of indicative vision of attractiveness and capacity of potential sources of finance, assessment of main risk aspects

- Support from our global procurement system to develop a matrix and improve access to the most reliable / favourable sources of finance (including ECA)
- Evaluation of possible financing structures (corporate, structured, hybrid)
- Investigation of alternative contractual frameworks to combine the optimisation of attractive sources of financing with an operationally efficient project management strategy
- Contact and negotiation with financial partners to secure the most competitive solutions

2015

LUKOIL NEFTOKHIM BURGAS HEAVY RESIDUE PROCESS COMPLEX

Corporate Finance with PCG from OAO Lukoil - SACE

DOFTECH DA - SKANDI ARTIC

Corporate Finance: Eksporfinans

TP-NPV SINGAPORE LTD DEEP ENERGY

Corporate Finance with Multi-source export credits: Finnvera / COFACE

2016

YAMAL LNG

Project Finance: BPI France / SACE / JBIC / China Exim / EXIAR / Euler Hermes

ZAPSIB 2 / SIBUR PETROCHEMICAL COMPLEX (POLYETHYLENE)

Export Credit: COFACE

BRASKEM IDESA SAPI ETILENO XXI PETROCHEMICAL COMPLEX

Project Finance: SACE / EDC / BNDES

2022

BAPCO MODERNIZATION PROJECT

Project Finance: SACE / KEXIM / K-SURE / UKEF

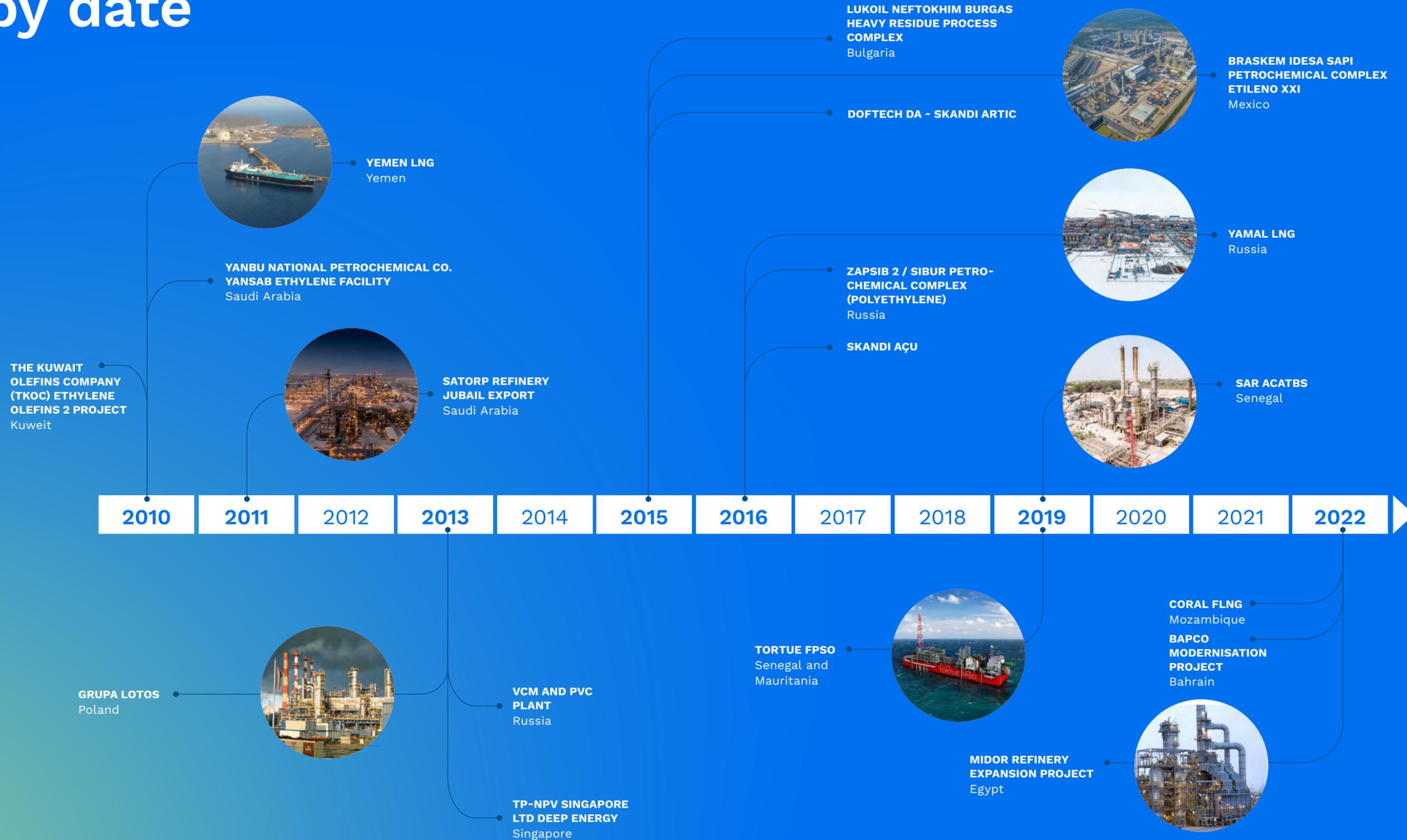
MIDOR REFINERY EXPANSION PROJECT

Export Credit: SACE

CORAL FLNG

Project Finance: BPI France / SACE / KEXIM / K-SURE / China Exim

Our key references by date







Franck Pliya
Technip Energies Senegal Country Director
+221 783 839 070
+33 786 173 787
franck.pliya@ten.com

Immeuble SCIA 2
Route de King Fahd Palace, 1st floor
Dakar – Sénégal

www.ten.com