

Where energies make tomorrow ●

Technip Energies in the Asia-Pacific

A leading engineering and technology
company for the energy transition.

TEN

**TECHNIP
ENERGIES**



A unique offering

Technip Energies is a leading engineering and technology company serving the energy industry and its transition. Through our extensive portfolio of technologies, products and services, we break boundaries to bring our clients' innovative projects to life while accelerating the energy transition for a better tomorrow.

A PRESENCE ACROSS THE ENTIRE VALUE CHAIN

PROJECT DELIVERY

- Project management
- Engineering, Procurement and Construction
- Technology integration on complex projects
- Digital applications for project execution, and safe and cost-effective operations and maintenance
- Project financing

TECHNOLOGY, PRODUCTS AND SERVICES

- Technologies and licensing
- Proprietary products: Loading systems and Cybernetix
- Concept, feasibility, FEED studies
- Advisory (Genesis) and project management consultancy
- Digital services

FULL COVERAGE OF DIVERSE MARKETS

- LNG & gas monetization
- Sustainable chemistry
- Hydrogen
- CO₂ management
- Floating offshore wind
- FLNG and offshore
- Ethylene
- Petrochemicals
- Fertilisers
- Mining and metals
- Nuclear
- Life sciences



Your partner in the Asia Pacific

With more than four decades of continuous presence and active engagement in the Asia-Pacific, Technip Energies provides a wide spectrum of technologies, products and services adapted to the countries where we operate to accelerate the energy transition. From concept to delivery and lifecycle management, our company deploys its expertise across gas monetization, hydrogen, sustainable chemistry, biofuels, CO₂ management/ decarbonization in addition to other markets.

500+
PROJECTS

41
YEARS IN THE APAC MARKET

VIETNAM

PROJECTS

- Long Son Petrochemicals Complex FEED + EPC
- Dung Quat Refinery, PetroVietnam EPC
- An Phat PBAT FS + FEED

SINGAPORE

PROJECT

- DNExBTL biorefinery expansion, Neste FEED + EPCM

INDONESIA

PROJECTS

- Weda Bay Nickel Plant, Eramet PFS + BFS
- Matindok, Pertamina EPC
- PTA expansion, BP FEED + EPCM

THAILAND

PROJECT

- SRC Refinery FS, FEED + EPCM

CHINA

PROJECTS

- Hanas LNG, Ningxia Hanas Natural Gas EP+Cm
- Yangling LNG, Shaanxi LNG Investment & Development EPC
- Banc 2 Chemical Plant, Bluestar Adisseo Nanjing EP + project management services

MALAYSIA

ONSHORE PROJECTS

- H2S & MeSH expansion, Arkema FEED + EPCM
- RAPID Refinery and Petrochemical Complex, Petronas FEED, PMC + EPCM
- Sahara Rose Melamine, Petronas FEED + EPC

OFFSHORE PROJECTS

- Block SK 316, Petronas FEED + EPCIC
- Malikai TLP, Sabah Shell Petroleum EPC
- Kasawari offshore gas phase 1, Petronas EPC
- Kasawari CCS, Petronas FEED
- FLNG Satu, Petronas EPCIC

AUSTRALIA

PROJECTS

- Ichthys FPSO, DSME, for INPEX Detailed engineering + procurement assistance
- Prelude FLNG, Shell FEED + EPCI
- Macedon Gas Plant, BHP Billiton
- Strike Haber FS + FEED
- Pluto Water Handling Module, Woodside EPCIC



PRINCIPAL OFFICES SINCE 1982



Accelerating the energy transition for a better tomorrow

Strategic flexibility

- Feedstock agnostic – outstanding energy molecule transformation capabilities
- Technology-driven – integrate complex technologies, including proprietary, to meet project specificities and economic hurdles

Exceptional execution

- Proven operating model
- Highly applicable to sustainable energy solutions
- World-class project execution
- Unrivaled technology and product portfolio

Assisting clients towards net-zero emissions



LNG
Onshore and offshore liquefaction



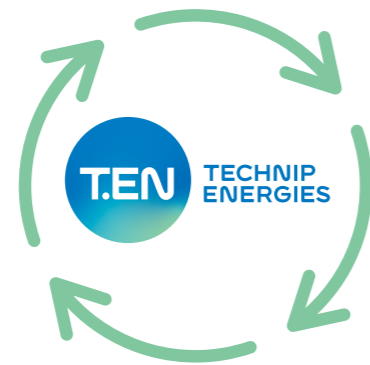
Carbon-free energy solutions
Green hydrogen, offshore wind, nuclear



Sustainable Chemistry
Biofuels, biochemicals, circular economy



Decarbonization
Energy efficiency, blue hydrogen, CCUS¹



¹CCUS: Carbon Capture, Utilization and Storage

From feasibility studies to project delivery and beyond

PROJECT PHASE	SCOPE	
Genesis Advisory Services	<ul style="list-style-type: none"> • Feasibility studies • Conceptual studies and select stage studies • Field development studies • Master plan development • Screening and assess stage studies • Energy management 	<ul style="list-style-type: none"> • Master plan development • RAM and CFD studies • Flow assurance • Rigorous blowdown modelling
FEED	<ul style="list-style-type: none"> • Basic engineering 	<ul style="list-style-type: none"> • Front-end engineering design
EPC	<ul style="list-style-type: none"> • Detailed engineering • Procurement • Inspection, expediting 	<ul style="list-style-type: none"> • Construction and installation • Commissioning and startup
Technologies	<ul style="list-style-type: none"> • Hydrogen • CO₂ management • LNG • Sustainable chemistry 	<ul style="list-style-type: none"> • Offshore • Ethylene • Petrochemicals • Fertilisers
PMC	<ul style="list-style-type: none"> • Specialist consultancy services • Owner's engineer 	<ul style="list-style-type: none"> • Project management consultancy
Products	<ul style="list-style-type: none"> • Designs, systems, packages and services for loading systems 	<ul style="list-style-type: none"> • Onshore and offshore fluid transfer systems • Technology
Digital Services	<ul style="list-style-type: none"> • Beyond by T.EN™ digital platform • Gen-CAT™ carbon assessment • SPYRO® Asset Management 	<ul style="list-style-type: none"> • Plant operator digital simulator (PODS), • Advanced robotic assistance (Cyxpro®, CyXense)



Genesis advisory

Genesis is a market-leading advisory company focused on helping clients make decisions, assure their investments and maximise the value of their assets.


-  **OUR LOCATIONS**
-  **OUR EXPERTISE**
-  **OUR DIGITAL TOOLS**

Genesis has extensive global experience across the hydrocarbon, renewable and alternative energy sectors, operating in greenfield and brownfield as well as subsea, offshore and onshore settings. Our highly sophisticated teams, tools and processes offer robust support to our clients, helping them to de-risk opportunities and maximise value.

In the Asia-Pacific, Genesis develops innovative solutions for the global energy industry by leveraging its core engineering and techno-economic skills. With strong expertise and references in the region, the company helps clients achieve world-class performance from their assets by providing expertise, innovative methods and tools to realize maximum potential.




Ultra Front End™ Suite




Generates and compares options from the first inception of a project to ensure maximum value and optimum development

ADEPT



Produces equipment reports and detailed cost estimates in a single integrated platform using in-built engineering analysis and a worldwide cost database

Gen-CAT™



An ultra front-end tool providing early clarity on carbon footprint drivers and emissions calculations in line with the GHG Protocol

“Our extensive experience across the energy industry makes us your trusted advisor on your journey to a sustainable future.”

Christophe Malaurie, SVP Genesis and Digital Services at Technip Energies

Project management consultancy

Technip Energies has extensive experience delivering project management consultancy services in the Asia-Pacific region. We successfully support our clients' business objectives, consistently delivering projects with outstanding safety and environmental performance that meet cost, schedule and quality targets.

We help clients achieve their investment objectives and deliver turnkey projects by consulting at every project phase from technology and licensor selection to management of multinational consortia. Leveraging extensive experience in delivering small to mega projects worldwide, our PMC teams are equipped to optimise designs and recommend realistic execution plans.

A DEDICATED AND STRUCTURED ORGANIZATION

We offer our clients a dedicated and structured organization and a robust operational business model to deliver efficient and cost-effective project management services.

• Project management

We manage and integrate the EPC phases of projects of any size. Acting as the single point of contact, we consolidate all contractors and subcontractors often from diverse cultures and backgrounds to deliver successful projects.

• QHSE

Our commitment to quality, safety, health and environment is second to none.

• Project controls

We effectively manage schedules and costs to enhance project management, control capabilities and provide effective monitoring. Our proven software tools

“A proven track record in helping our clients meet their safety and environmental targets.”

facilitate monitoring and forecast future performance.

• Engineering and procurement

We provide technical oversight to ensure implementation of best practices and design and help our clients comply with complex international procurement systems.

• Construction and commissioning

We manage and monitor construction and commissioning activities with a focus on safety, risk, schedule, costs, staffing, quality and methods to ensure successful construction and on-time completion of the facility.

• Operations and maintenance

We support our clients' operation and maintenance teams

and provide the resources and expertise to maximise assets.

AN INTEGRATED APPROACH

We offer wide-ranging services to manage all project phases, teaming client and in-house personnel with no duplication of roles.

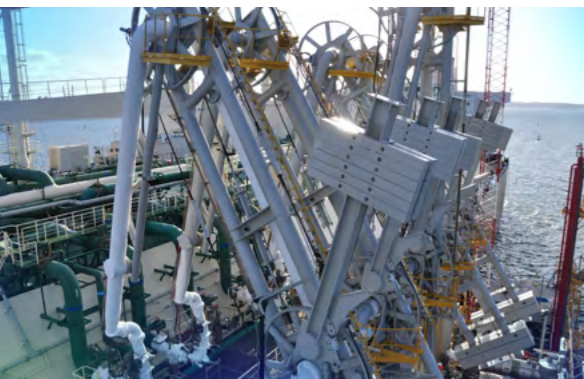
TIMELY MOBILISATION AND GLOBAL SOURCING

We mobilise our project teams immediately following contract award. Our staffing process coordinates global sourcing, identifies skilled personnel and submits qualified candidates. Our global presence enables us to mobilise people with the right experience in the right place at the right time. We maximise the use of local and regional workers in our resourcing strategy.

Leading loading systems

We are well-positioned to meet the challenges of the industry and the energy transition by bringing together complementary skills and innovative and digital technologies. Our Loading Systems Business Unit is the leading supplier of fluid transfer systems in the oil, gas and petrochemical industries.

Innovative designs, systems, packages and services



We offer our clients advanced technologies in transfer operations, providing innovative designs, systems, packages and services. Our offerings extend from concept to project delivery and beyond. We are recognized for setting technical and performance standards in the onshore and offshore transfer of liquids and gas.

Our proven ability to innovate, coupled with our modern manufacturing and assembly techniques, serve as the foundation for the future development of fluid transfer systems capable of operating in hostile and challenging environments and meeting the energy transition challenges.

Safety and sustainability are an integral part of our foundational beliefs and are reflected in the design of our products and in our worldwide service network. We focus on ensuring our clients' success by providing efficient and long-term operability in loading systems with enhanced digital solutions.

Our Loading Systems Business Unit has a large presence in the Asia Pacific with more than 1,000 marine loading arms delivered to the petrochemical industry and LNG terminals. Loading Systems maintains a permanent team in the Asia Pacific to provide engineering, technical assistance and field services.

“Our innovative loading solutions focus on safety and long-term sustainability.”

FACTS AND FIGURES

- Marine loading arms, truck and railcar loading arms and other fluid transfer systems
- 49 patents filed & 3 certifications ISO9001 (quality), OHSAS 45001 (health & safety), ISO14001 (environment)
- 24/48 responsive service
- 83,000 m² main plant in Sens, France
- 60 years of expertise
- 15,000+ loading arms delivered
- 33 highly skilled field engineers with global coverage dedicated to rapid intervention and on-site supervision
- 2 partnered factories worldwide for loading arms assembly
- Worldwide presence

A track record of successful projects in the Asia-Pacific

More than 500 projects completed

Technip Energies has successfully executed major projects in the Asia-Pacific from engineering studies to construction and commissioning.

- Feasibility studies
- Project management
- Financing
- Engineering
- Procurement
- Construction
- Commissioning
- Operations
- Plant expansion and debottlenecking
- Plant decommissioning



Key references



Gas & Low Carbon Energies

PFLNG SATU



- **Contract:** EPCIC
- **Award:** 2012
- **Client:** Petronas
- **Capacity:** 1.2 Mtpa LNG
- **Delivery:** 2017
- **Location:** Malaysia

Designed by consortium leader Technip Energies and fabricated at the Daewoo Shipbuilding and Marine Engineering yard in South Korea, PFLNG Satu achieved the first-ever offshore production of LNG in April 2017.

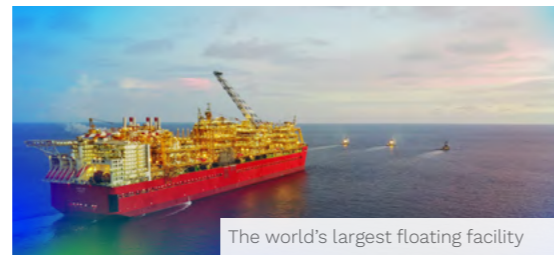
KASAWARI PHASE 1



- **Contract:** EPC
- **Award:** 2019
- **Client:** Petronas
- **Delivery:** 2023
- **Location:** Malaysia

Technip Energies with MMHE was awarded a contract for the engineering, procurement, construction and commissioning of Petronas Kasawari natural gas development in Block SK 316 off Sarawak.

SHELL PRELUDE

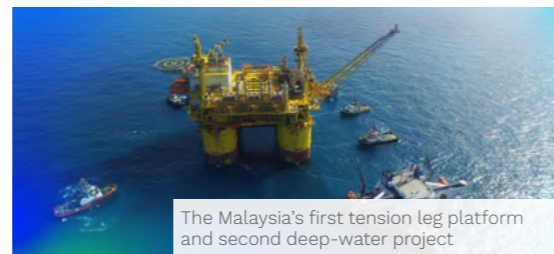


The world's largest floating facility

- **Contract:** FEED, EPCI
- **Award:** 2010
- **Client:** Shell
- **Delivery:** 2019
- **Location:** Australia

Technip Energies led the consortium with Samsung heavy industries to deliver the World's first ever sanctioned FLNG with a capacity of 5.3 Mtpa liquids. It is the largest floating steel ever built and designed to withstand the harshest cyclonic conditions.

MALIKAI



The Malaysia's first tension leg platform and second deep-water project

- **Contract:** EPC
- **Award:** 2012
- **Client:** Sabah Shell petroleum Co. Ltd
- **Location:** Malaysia
- **Delivery:** 2015

Technip Energies and MMHE delivered this floating oil production facility moored to the seabed 500m underwater. Malikai demonstrates our expertise in TLP delivery.



Sustainable Fuels, Chemicals & Circularity

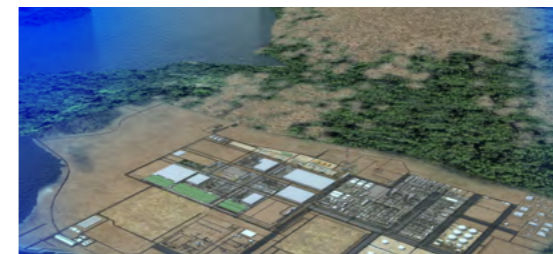
NESTE DNExBTL



- **Contract:** EPCM
- **Award:** 2008 | 2018
- **Client:** Neste
- **Capacity:** 800,000 t/year of biodiesel each
- **Delivery:** 2010 | 2022
- **Location:** Singapore

Technip Energies delivered a plant that integrated into the existing industrial infrastructure and makes use of local site utilities, port and storage services. The Singapore plant extension to 1.3 Mtpa was awarded to Technip Energies in December 2018.

RAPID



- **Contract:** FEED | PMC | EPCM for utilities and offsites
- **Award:** 2011 | 2013 | 2014
- **Delivery:** 2013 | 2020 | 2019
- **Client:** Petronas
- **Location:** Malaysia

Technip Energies developed the conceptual consolidation and FEED phases of the 300,000 BPSD complex to answer the growing need for clean motor fuels commodities, and specialty chemicals products.

LONG SON PETROCHEMICALS



- **Contract:** Licensing, EPC and Commissioning
- **Award:** 2018
- **Client:** Long Son Petrochemicals Co.
- **Location:** Vietnam
- **Delivery:** 2023

Technip Energies has been awarded a large contract for the licensing, engineering, procurement, construction, commissioning and start-up of Vietnam's first olefins plant on Long Son Island, Vietnam. The project is executed in a consortium with capacity up to 1.6 million tonnes per year.

MELAMINE EPC



- **Contract:** EPC
- **Award:** 2022
- **Client:** Petronas
- **Location:** Malaysia
- **Delivery:** 2024

Technip Energies is responsible for overall project management, engineering, procurement and commissioning, whereas Dialog E&C is in charge of construction and pre-commissioning. This is a very strong combination leveraging decades of experience of delivering projects in Malaysia.

Key references



Carbon-Free Solutions

BAYU-UNDAN CCS FACILITY



- **Contract:** Assess & Select Phrases
- **Award:** 2021
- **Delivery:** 2022
- **Client:** Santos Limited
- **Location:** Australia

New CCS facility to remove and capture reservoir CO₂ from feed gas for an existing LNG train at DLNG site. Captured CO₂ to be compressed, dehydrated, and sent to Bayu Undan offshore facility for sequestration.

WEDA BAY



- **Contract:** PFS & BFS
- **Award:** 2008
- **Delivery:** 2013
- **Client:** Eramet
- **Location:** Halmahera Island, East Indonesia

Technip Energies delivered a plant that integrated into the existing industrial infrastructure and makes use of local site utilities, port and storage services. The Singapore plant extension to 1.3 Mtpa was awarded to Technip Energies in December 2018.

ARTHIT CCS FACILITIES & BROWNFIELD MOD



- **Contract:** pre-FEED
- **Award:** 2022
- **Delivery:** 2022
- **Client:** PTT Exploration and Production (PTTEP)
- **Location:** Arhit Field, Thailand

The project's objective is to further purify CO₂ removed from Arihit's Sales gas scheme and reinject it to the reservoir via the existing wellhead. The purification technology, including permeate and reinjection CO₂ compressor, will be compared, selected and optimised for impacts to existing facilities.

T.EN X Consulting and Products

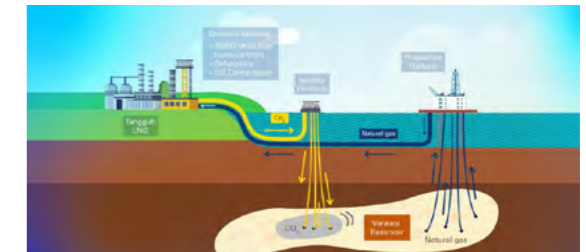
SHELL PRELUDE



- **Contract:** Loading Arms (Shell Prelude)
- **Award:** 2012
- **Delivery:** 2019
- **Client:** First client Technip France and final client Shell
- **Location:** Australia

The world's largest offshore floating facility, including seven 16" marine loading arms (four LNG and three LPG loading arms).

TANGGUH UCC



- **Contract:** Concept, pre-FEED and FEED
- **Award:** 2021
- **Delivery:** 2021-2023
- **Client:** BP and SKK Migas
- **Location:** Indonesia

Integrated project for field development and enhanced gas recovery through carbon capture, utilization and storage.

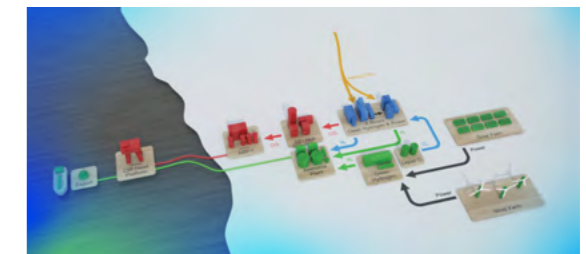
LONG SON PETROCHEMICAL CO., LTD



- **Contract:** LS licensing, EPC, Commissioning and Startup
- **Award:** 2017
- **Delivery:** On going
- **Client:** Long Son Petrochemicals Co. Ltd
- **Location:** Vietnam
- **Capacity:** 1600 KTA mixed feed cracker

Technip Energies provided our proprietary ethylene technology, as well as licensed technology, for C3 hydrogenation, C4/C5 hydrogenation, pyrolysis gasoline hydrogenation and butadiene recovery units. Our Ultra Selective Conversion (USC[®]) furnaces and Heat-Integrated Rectifier System[®] were used. The EPC contract was awarded in a consortium with SK Engineering & Construction Co., Ltd. of South Korea.

GENESIS NEW ENERGIES (CCUS + H2)



- **Contract:** Owner Engineer – Master Services Agreement
- **Award:** 2022
- **Delivery:** On going
- **Client:** Pilot Energy
- **Location:** Australia

Genesis was awarded a MSA for engineering services by Pilot Energy to act as Owner Engineer in 2022, however studies were started in 2021 with market, technical and technology scopes. Since then, Genesis has studied CCUS, blue H₂ and Green H₂, including providing project integrator services and support on the renewable mix integrated with green H₂ to assist progression towards FEED.



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