

Where energies make tomorrow ●

Technip Energies in the Asia-Pacific

A leading engineering and technology powerhouse for energy infrastructure and decarbonization.

T.EN

**TECHNIP
ENERGIES**

A unique offering

Technip Energies is a leading engineering and technology powerhouse for energy infrastructure and decarbonization. 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 sustainable future.

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 fuels
- Hydrogen and Ammonia
- 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 and other markets.

500+
PROJECTS



41

YEARS IN THE
APAC MARKET

THAILAND ONSHORE

- SPRC RFCC Reliability Improvement FEED + EPCM
- SPRC Capacity Project FS, FEED + EPCM
- MOC Cracking Furnaces FEED + EPCC
- Michelin Plant EPC

OFFSHORE

- SPRC/GC SPM CALM Buoy Project FEED + PMC
- PTTEP G2S CCS Project CS + Pre-FEED
- PTTEP Arthit CCS Project Pre-FEED + FEED
- PTTEP Bundle Phase 3 & 4 WHP FEED

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



**PRINCIPAL
OFFICES
SINCE 1982**



We are pioneers engineering a world designed to last

Strategic flexibility

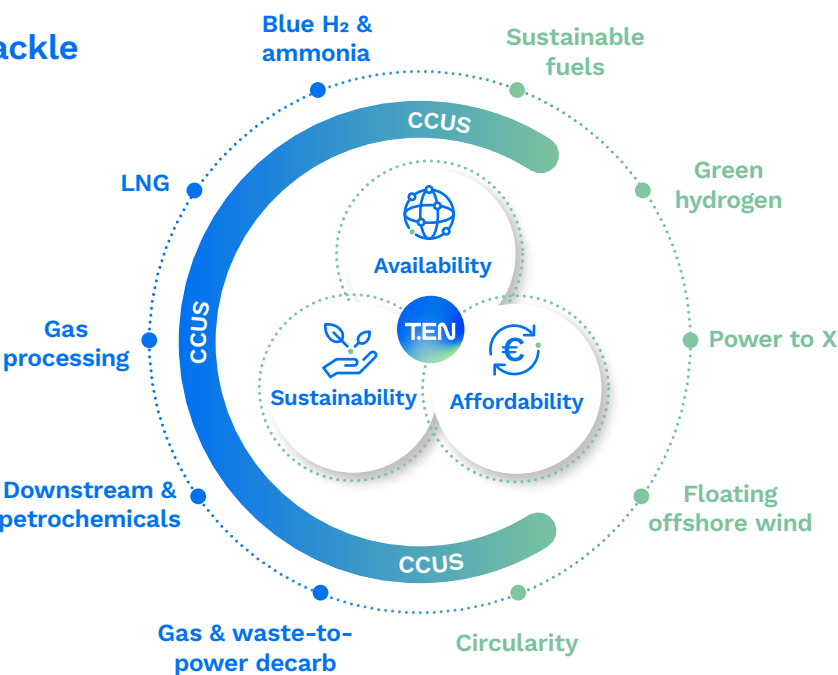
- Feedstock agnostic: Outstanding energy molecule transformation capabilities
- Technology-driven: Integrated complex technologies, including proprietary, to meet project specificities and economic hurdles

Exceptional execution

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

Assisting clients towards net-zero emissions

“Our solutions to tackle energy trilemma”



From feasibility studies to project delivery and beyond

PROJECT PHASE	SCOPE	
Genesis Advisory Services	• Feasibility studies	• Master plan development
	• Conceptual studies and select stage studies	• RAM and CFD studies
FEED	• Field development studies	• Flow assurance
	• Master plan development	• Rigorous blowdown modelling
EPC	• Screening and assess stage studies	
	• Energy management	
Technologies	• Basic engineering	• Front-end engineering design
	• Detailed engineering	• Construction and installation
PMC	• Procurement	• Commissioning and startup
	• Inspection, expediting	
Products	• Hydrogen	• Offshore
	• CO ₂ management	• Ethylene
Digital Services	• LNG	• Petrochemicals
	• Sustainable chemistry	• Fertilizers
Products	• Specialist consultancy services	• Project management consultancy
	• Owner's engineer	
Digital Services	• Designs, systems, packages and services for loading systems	• Onshore and offshore fluid transfer systems
	• Technology	
Digital Services	• Beyond by T.EN™ digital platform	• Plant operator digital simulator (PODS)
	• Gen-CAT™ carbon assessment	• Advanced robotic assistance (Cyxpro®, CyXense)
Digital Services	• SPYRO® Asset Management	



Genesis advisory

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



OUR LOCATIONS



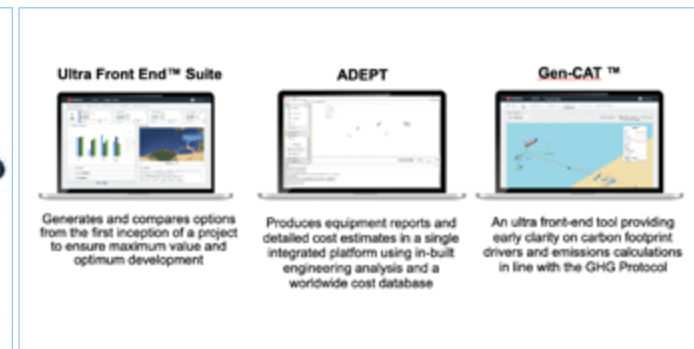
OUR EXPERTISE



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 derisk opportunities and maximize value.

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



“Genesis has stood the test of time for more than 30 years; we are committed to a sustainable future, working in partnership with our clients globally to provide innovative solutions and nurture our next generation of talent.”

Helen Coleman
Managing Director Genesis

Project management consultancy

Technip Energies has extensive experience delivering project management consultancy services in the Asia-Pacific region. We support our clients by 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 optimize designs and recommend realistic execution plans.

A DEDICATED AND STRUCTURED ORGANIZATION

We offer our clients a well-defined and focused team 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 to 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 maximize 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.

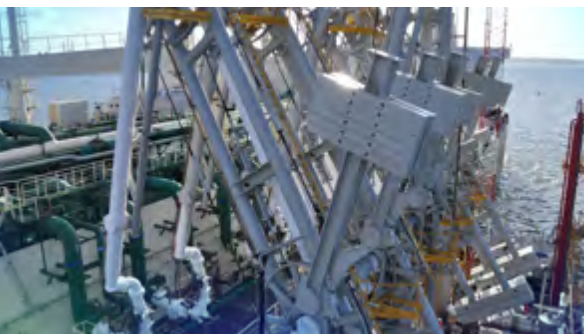
TIMELY MOBILIZATION AND GLOBAL SOURCING

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

Leading loading systems

Our Loading Systems Business Unit uses advanced technology in transfer operations to offer innovative designs, systems and packages for the oil, gas, petrochemical and chemical industries. We deliver onshore and offshore loading solutions that can manage a variety of fluids and gases at normal, high and very low temperatures and at different levels of operating pressures.

Shore-to-Ship, Ship-to-Ship and Truck and Railcar transfer solutions



“Our unique loading solutions focus on safety and sustainability.”

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 (LNG, petrochemical, NH₃, H₂, HPNG, CO₂).

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 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.

FACTS AND FIGURES

- Marine loading arms, truck and railcar loading arms and other fluid transfer systems
- 57 patents filed and 4 certifications ISO 9001 (quality), OHSAS 45001 (health & safety), ISO 14001 (environment), ISO/IEC 27001: 2013 (information security)
- 24/7 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 rapid global intervention and on-site supervision
- Two manufacturing plants

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

PFLNG SATU



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

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.

SHELL PRELUDE



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

Technip Energies led the alliance with Samsung Heavy Industries to deliver the world's first 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.

NESTE DNExBTL



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

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 in 2018.

LONG SON PETROCHEMICALS



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

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

KASAWARI PHASE 1



- **Contract:** EPC
- **Award:** 2019
- **Delivery:** 2023
- **Client:** Petronas
- **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.

MALIKAI



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

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

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.

SAHARA ROSE



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

Technip Energies handled project management, engineering, procurement and commissioning while Dialog E&C managed construction and precommissioning.

Key references

BAYU-UNDAN CCS FACILITY



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

New CCS facility was developed 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.

GREEN METHANOL PLANT PROJECT



- **Contract:** Conceptual Study & Pre-FEED
- **Award:** 2023
- **Delivery:** 2023
- **Client:** Confidential
- **Location:** Confidential

Design of an onshore plant, including utilities system, electrolysis unit, and Methanol Production Unit to convert CO₂ into green methanol for the maritime industry.

SHELL PRELUDE



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

Technip Energies delivered 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

Technip Energies executed an integrated project for field development and enhanced gas recovery through carbon capture, utilization and storage.

ARTHIT CCS FACILITIES & BROWNFIELD MOD



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

The project further purified CO₂ removed from Arthit Field and reinjected it to the reservoir via the existing wellhead. The purification technology was optimized for impacts to existing facilities.

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 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:** Ongoing
- **Client:** Pilot Energy
- **Location:** Australia

Genesis was awarded a master service agreement for engineering services with market, technical and technology studies starting in 2021. Since, Genesis has studied CCUS, blue H₂ and green H₂, including providing project integrator services and support.



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