

Business Line PLANT


12,5 M€
2022

SERVICES

- › Engineering from the feasibility phase through to detailed design in the execution phase
 - › Feasibility studies / Technical and economic assessments
 - › Conceptual studies
 - › Basic, Pre-Feed, Feed studies
 - › Detailed studies
- › Incorporated equipment purchasing service (order and on account or direct)
- › Construction monitoring / Precom-commissioning assistance

› AMO / EPmCm

SECTORS

Oil & Gas

Wellheads
Oil & Gas Processing
Utilities
(Air/Water/Electric)
Neighbourhoods Life
Transport
Pipelines / Cables

Gas & Power

Extraction/Processing
Transport Pipeline
Boat transport
Underground storage
terminals
Compression stations
Power Plant
Cogeneration

Industry

Petrochemicals
Fine chemicals /
Perfumery
Paper mills
Process
redesign/modernisation/
optimisation
Safety and regulation

EXAMPLES OF PROJECTS



North Field Production Sustainability (NFPS)
Integrated Front End Engineering Design (iFEED)



2019- 2020



Qatar

Design of all necessary connections and modifications to the existing facilities to accommodate the new wellhead platforms, composite cables, riser platforms and bridges in accordance with the standards and specifications of the existing facilities.



TEREGA

SECURLUG



2019- 2023



France- Lussagnet

Compressor design, HV 20kV electrical substation design. Multidisciplinary studies of compressor stations (PCD, PVV, ELE, INS, SAF, CIV, HVAC). New vent design. LLI specification.



Low Carbon Gas Value Chain - TOTAL R&D



2018- 2019



France

Process modelling, quantification of GHG emissions and cost estimates for reference gas chains (LNG transport, Hydrogen production: Steam methane reforming with carbon capture, Power generation: Combining cycle gas turbine with carbon capture, Evaluation of reference chains in terms of efficiency, GHG emissions and cost indicators.

Business Line NAVAL



SERVICES

- › Engineering from the feasibility phase through to detailed design in the execution phase
 - › Feasibility studies / Technical and economic assessments
 - › Conceptual studies
 - › Basic, Pre-Feed, Feed studies
 - › Detailed studies
- › Purchases of incorporated equipment (order and on behalf or directly)
- › EPm
- › Site engineering / Construction supervision

SECTORS

Navy

Equipment definition/integration

Naval architecture studies

Maintenance and operation studies

Major retrofits

Merchant marine & passengers

Oil & Gas

Hull design

Major retrofits

FPSO / FSRU / FLNG

EXAMPLES OF PROJECTS



TOTALENERGIES KAOMBO FPSOs



2019- 2020



France - Singapore

Detailed design in all disciplines for the conversion of 2 VLCCs into FPSOs. Studies of modifications to residential areas. Field engineering. On-site construction supervision (Singapore).



Integration of scrubbers on container ships



2020- 2022



France

› Studies into the integration of scrubbers to reduce emissions on board 4 series of ships (survey, 3D model, detail and isometric drawings and on-site monitoring).

› Procurement of electrical equipment (transformers, LV modifications, MV switchboards), valves, F&G detection, CO2 detection

› On-site construction monitoring



Functional and move-in studies



1986 to date



France

› Recent studies:

Scorpen, India Submarine, Brasil Submarine, Barracuda Submarine, FREMM - Fregate, Gowind (UAE, Malaysia, Egypt) - Corvette

Business Line GREEN



SERVICES

- › Engineering from the feasibility phase through to detailed design in the execution phase
 - › Feasibility studies / Technical and economic assessments
 - › Conceptual studies
 - › Basic, Pre-Feed, Feed studies
 - › Detailed studies
- › Purchases of incorporated equipment (order and on behalf or directly)
- › EPmCm
- › Site engineering / Construction supervision

SECTORS

Industry & Energy

Industrial generation 50-200+ MW
Power station and energy storage
H2 generation & distribution station
Mass production of H2
Offshore and transport

Biomass, Biogas, E-fuels

Methanation
Hydrothermal gasification
Pyrogazeification
Syngas treatment
E- Fuel

Maritime & port

H2 PowerBarge
Elemanta®
Passenger ships
Crew boats

EXAMPLES OF PROJECTS



2022



2 300 H



France

Conceptual study of all disciplines for the integration of 55 kWh of H2 production on the industrial site



RSB Barbados



2022 - 2023



9 300 H



France

- › FEED study for power plant with H2 storage and fuel cell
- › Definition and optimisation of CAPEX & OPEX / Value Engineering
- › Preparation of technical packages for the EPC tender phase

Business Line WIND



SERVICES

- › Engineering from the feasibility phase through to detailed design in the execution phase
 - › Feasibility studies / Technical and economic assessments
 - › Conceptual studies
 - › Basic, Pre-Feed, Feed studies
 - › Detailed studies
- › Site engineering / Construction supervision

SECTORS

Offshore wind turbine foundations

Naval architecture,
Hydrodynamic studies
Load calculations / Overall calculations
Structural design /
Industrialisation
Utility Systems
Offshore operations

E&I modules foundations

Modular design
Industrialisation

H2 production coupled with offshore wind

Conceptual study,
Pre-Feed / Feed

EXAMPLES OF PROJECTS



EDF EN - Courseulles wind farm



2022 - 2024



50 000 H



France

- › Detailed study of the 64 monopile foundations.
- › E&I follow-up
- › Manufacturing interfaces



BADAENERGY GRAYWHALE3 PRE-FEED



2021 - 2022



6 500 H



France

Conceptual and pre- FEED studies for the floating foundations of 33 15 MW wind turbines.



R&D in floating foundations



2022



16 000 H



France

- › Screening of different semi-sub float concepts
- › Development and maintenance of the GENESEA calculation chain tool