



SAIPEM
ONSHORE E&C DIVISION



60+ YEARS OF EXPERIENCE IN THE ONSHORE ENERGY INDUSTRY

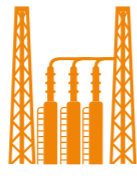
Today's Saipem Onshore E&C Division's strengths are its capacity of being a **solution provider** for a **wide range of products** and services and its **diversified geographical presence**. We have been operating for 60 years in over 50 countries delivering both Large Size and Medium Size Projects (from concept development to EPCI) across the most significant product lines.



UPSTREAM & PIPELINES



LNG & REGAS



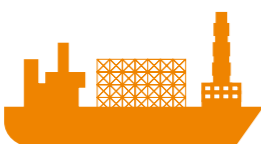
GAS MONETIZATION



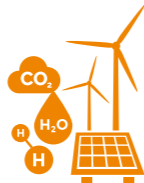
REFINING & PETROCHEMICALS



POWER & GASIFICATION



FLOATERS & GBS



NEW ENERGIES



INFRASTRUCTURES

SAIPEM ONSHORE E&C IN NUMBERS

6M+

SBPD OF OIL

40B+

SCFD OF GAS

15K+

TPD OF SULPHUR

48

MTPA OF LNG PRODUCTION CAPACITY INSTALLED

130+

O&G PRODUCTIONS PLANTS BUILT

38

GRASS ROOTS REFINERIES BUILT

17

FLOATERS COMPLETED

50+

FERTILIZER PLANTS BUILT

75+

POWER PLANTS BUILT

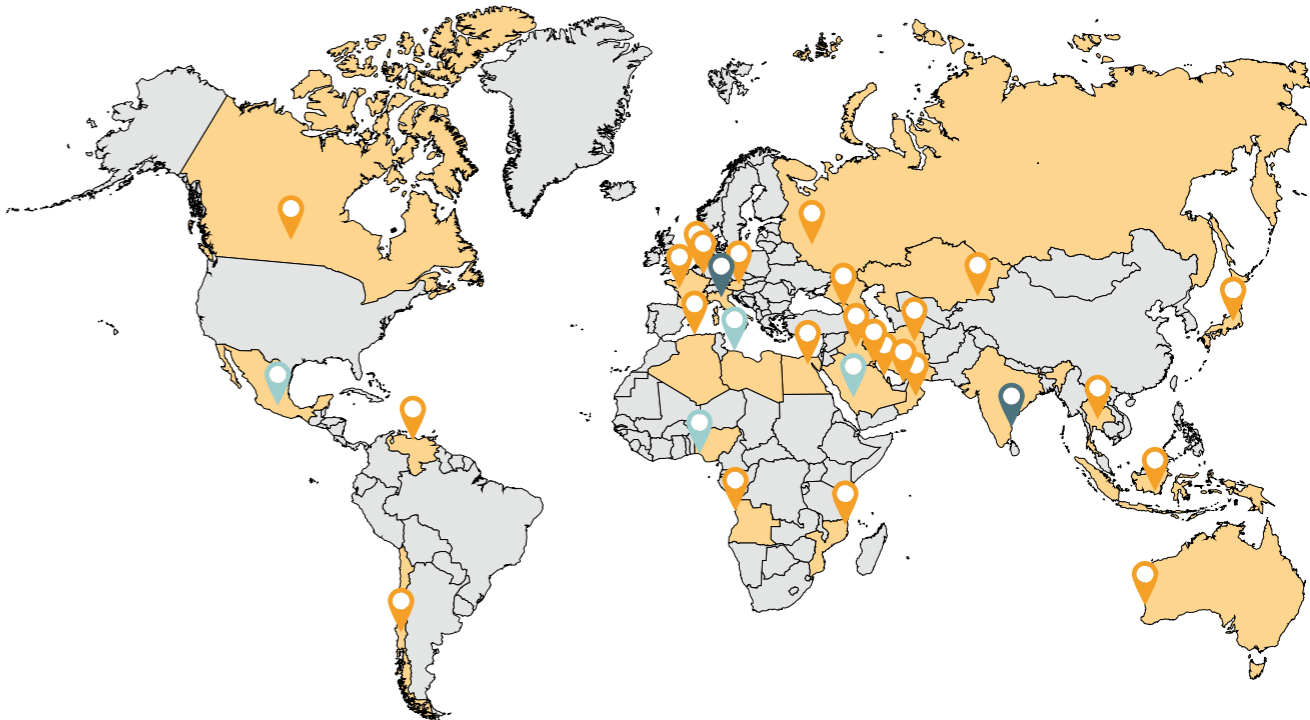
75K

KM PIPELINES INSTALLED

1,000

KM RAILWAYS BUILT

E&C ONSHORE – CURRENT GLOBAL PRESENCE



📍 ENGINEERING HUBS
 📍 ENGINEERING CENTRES
 📍 OTHER MAIN LOCATIONS

Total E&C Onshore workforce: **12.000**
 Key Professional Roles: **5.500**

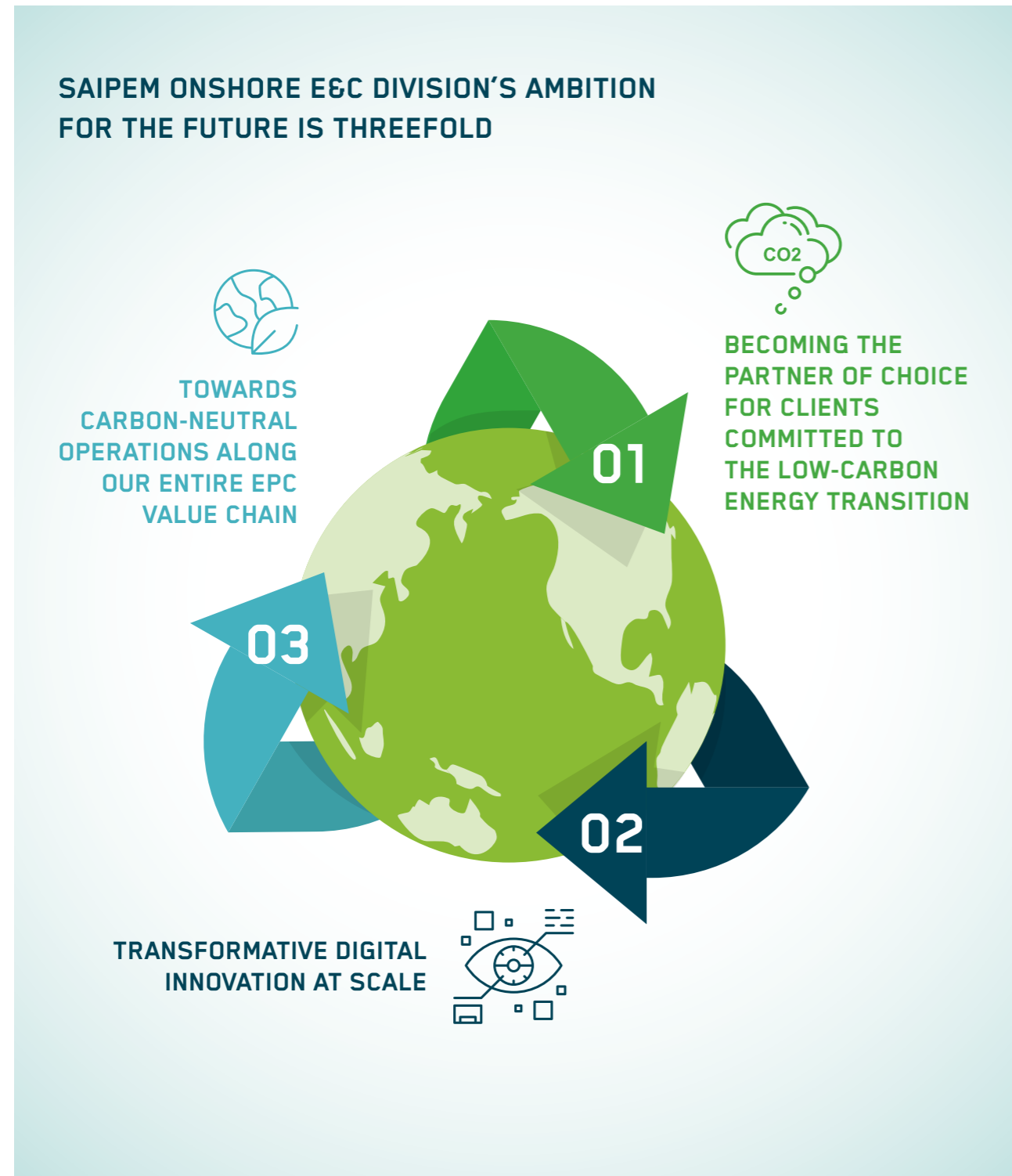


Our Product line brochures area available upon request.

OUR VISION

SOLUTION PROVIDER TOWARDS A LOW-CARBON FUTURE

We focus on improving the **overall value proposition** to our Clients through the capacity to design plants with higher performances and availability while integrating them with the surrounding environment. This attitude is also reflected in our **innovation efforts** in CO₂ management including carbon capture technologies, but also in reduction of gas flaring, hybrid solutions, Gas monetization and Waste-to-Energy as well as in LNG and Renewables, where we leverage our competences to maximize the **efficiency** of the complete value chain.



BECOMING THE PARTNER OF CHOICE FOR CLIENTS COMMITTED TO THE LOW-CARBON ENERGY TRANSITION



Saipem's Onshore E&C Division is pursuing several diversified actions to prepare and support the industry's transition towards **lower-carbon energy future**. Have a look at some of our efforts in our different product lines:

GAS VALUE CHAIN: FOCUS ON LNG AND GAS MONETIZATION

LNG PRODUCTION AND REGASIFICATION

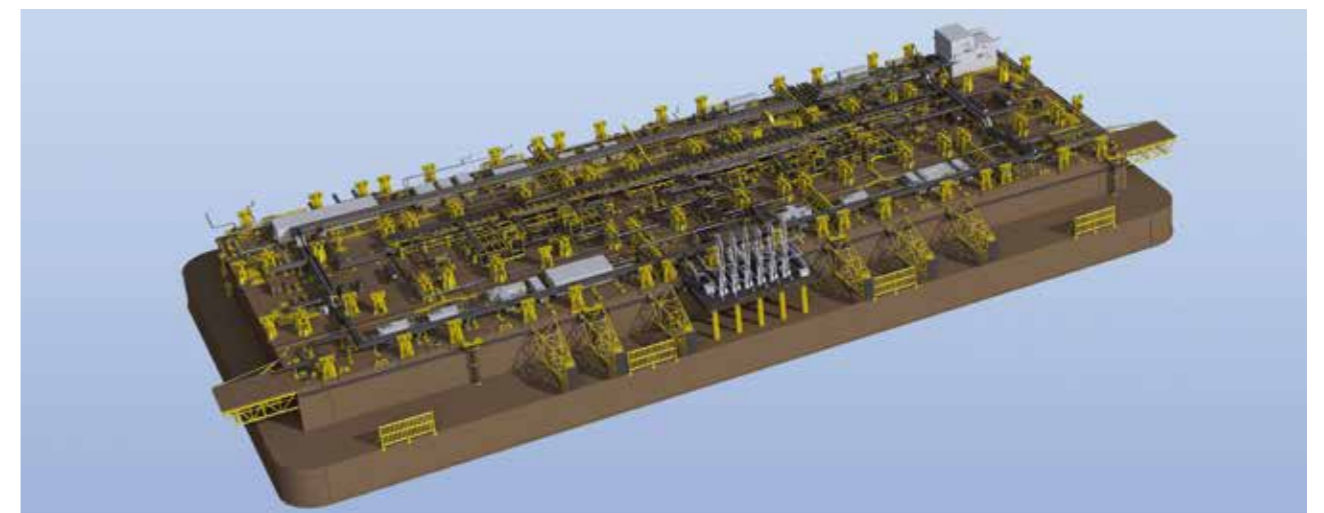


- Building on its **Snamprogetti heritage** Saipem has gained a strong presence in the LNG market, delivering an EPC track record of **9 base-load liquefaction** trains built and 1 under construction over the last two decades in Nigeria, Qatar, Algeria and Indonesia, with a total production capacity of over **48 MTPA**. Saipem has also delivered many front end designs for large LNG Liquefaction trains worldwide. Our track record includes the EPC design and construction of **13 LNG Regasification Terminals** and more than **40 LNG Storage Tanks**. Our innovation capabilities anticipate customer needs, developing and offering integrated solutions for onshore and offshore LNG import and export terminals.
- Proprietary Small Scale LNG Liquefaction, Regasification and Bunkering solutions**, developed to support an efficient and sustainable energy transition for small and remote users.

FLOATING LNG LIQUEFATION, REGASIFICATION (FLNG, FSRU) AND GBS SOLUTIONS



- Development of the new turbo-expanded cycle **proprietary technology Liqueflex™**, that uses natural gas and nitrogen as the main refrigerants, providing both remarkable operating flexibility and competitive energy efficiency. The process' very low hydrocarbon and cryogenic liquid inventories make it particularly safe and suitable for developments in onshore areas with reduced plot and severe permitting constraints as well as in offshore applications.
- Saipem has participated in many conversions of LNG Carriers to FSRU units, and recently achieved the completion of an EPCIC project, FSRU Toscana, **the world's first permanently moored FSRU** in the open deep sea. Our subsidiary Moss Maritime recently developed pioneering solutions in the **conversion of LNG Carriers to FLNG units**.
- Saipem provides innovative solutions implementing Gravity Based Structures schemes for LNG facilities - Arctic LNG 2 project in execution.





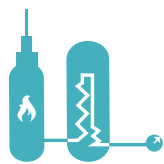
AMMONIA/UREA FERTILIZER COMPLEX

Saipem is the world's leading ammonia-urea plant contractor. We have designed and built hundreds of plants, including over fifty fully integrated complexes, in every remote corner of the world, mostly based on the world leading and **proprietary licensed Snamprogetti™ Urea technology** and also based on third party Syngas generation, Ammonia and Methanol synthesis technologies. The Qafco 5&6 Project in Qatar is the **largest worldwide fertilizer** complex ever built, with the biggest single line running Urea Plant capacity. Saipem offers **optimized schemes** with **higher Urea production** (at fixed emissions) and **reduced energy consumption**.



METHANOL

The Bandar Imam Third Methanol Project in Iran was the largest methanol project in the world at the time of design in 2001. A significant feature of this plant is the **pipeline built to reuse CO₂** and convert it into methanol.



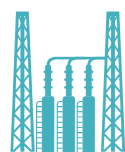
GASIFICATION

The Jazan complex in Saudi Arabia, currently nearing completion, is **the largest gasification plant** in the world from heavy refinery residues. The facilities include a 110,000 bbd Gasification Unit, allowing the generation of 2.4GW of electricity, as well as Soot Ash Recovery, Acid Gas Removal, a Sulfur Recovery and **Hydrogen** Recovery.



GAS-TO-POWER

Saipem has designed and built more than **75 Power Plants** for a total of **8,250 MW** installed producing power from natural gas through 23 **Open Cycle** Plants, 19 **Combined Cycle** Plants and 31 **Cogeneration** and Industrial Plants as well as more than **5,500 MW** installed on **Integrated Gasification Combined** Cycle with a total of 5 IGCC plants, including the 2 world's largest.



GAS-TO-LIQUID

The GTL Escravos Plant in Nigeria is one of the first GTL complexes on a world-class scale, and has been successfully installed in a remote and harsh environment, a hallmark the Saipem way.



Marghera- Green Refinery

GREEN ENERGY & RENEWABLES



BIOFUELS

Saipem is involved in the implementation of both Ethanol and Biodiesel Production Facilities. In Australia, an MoU has recently been signed for the EPC phase of the Pentland Bioenergy Project, comprising a Sugar Cane Farm, a first generation Ethanol Production Facility and a Cogeneration Plant. Saipem is exploring partnerships with the most reputable Technology Providers.



GREEN REFINERIES

Saipem has recently completed the **conversion of a standard refinery into a biorefinery** in Marghera, Italy.



BIOMASS

Saipem interest embraces energy conversion of biomass for heat and electricity production, involving different combustion technologies, and also including biogas production.



SOLAR

Saipem is pursuing several Solar Plant initiatives, including stand-alone or combined Photovoltaic and CSP (Concentrating Solar Power) Technologies.



WASTE-TO-ENERGY

Saipem also has an EPC track record in Waste-to-Energy Plants.



CO₂ MANAGEMENT

Carbon Capture & Storage (CCS)

- We are building a technology portfolio to deal with purification of Natural Gas from reservoirs with high content of CO₂ and/or capture of CO₂ from combustion flue gas in power generation and industrial processes. In particular, **Saipem can master the whole Carbon Capture & Storage (CCS) chain** thanks to its solid background in process technology (mainly from Gas Reforming, Urea and heavy residues Gasification knowledge), pipeline fluid transportation over long distances, onshore and offshore drilling for CO₂ injection. Worldwide, we have executed EPC Projects for **CO₂ removal** and **Acid Gas Reinjection** and our target is to be ready for future deployment of CCS when the necessary regulatory measures are implemented worldwide. In this regard, Saipem was selected and is operating in the FEED phase of the Northern Lights Norwegian CCS project for the challenging subsea CO₂ transportation phase. Furthermore, CO₂ re-utilization options are being intensely pursued as a first step of industrial exploitation of this kind of technologies.

Carbon Capture technologies

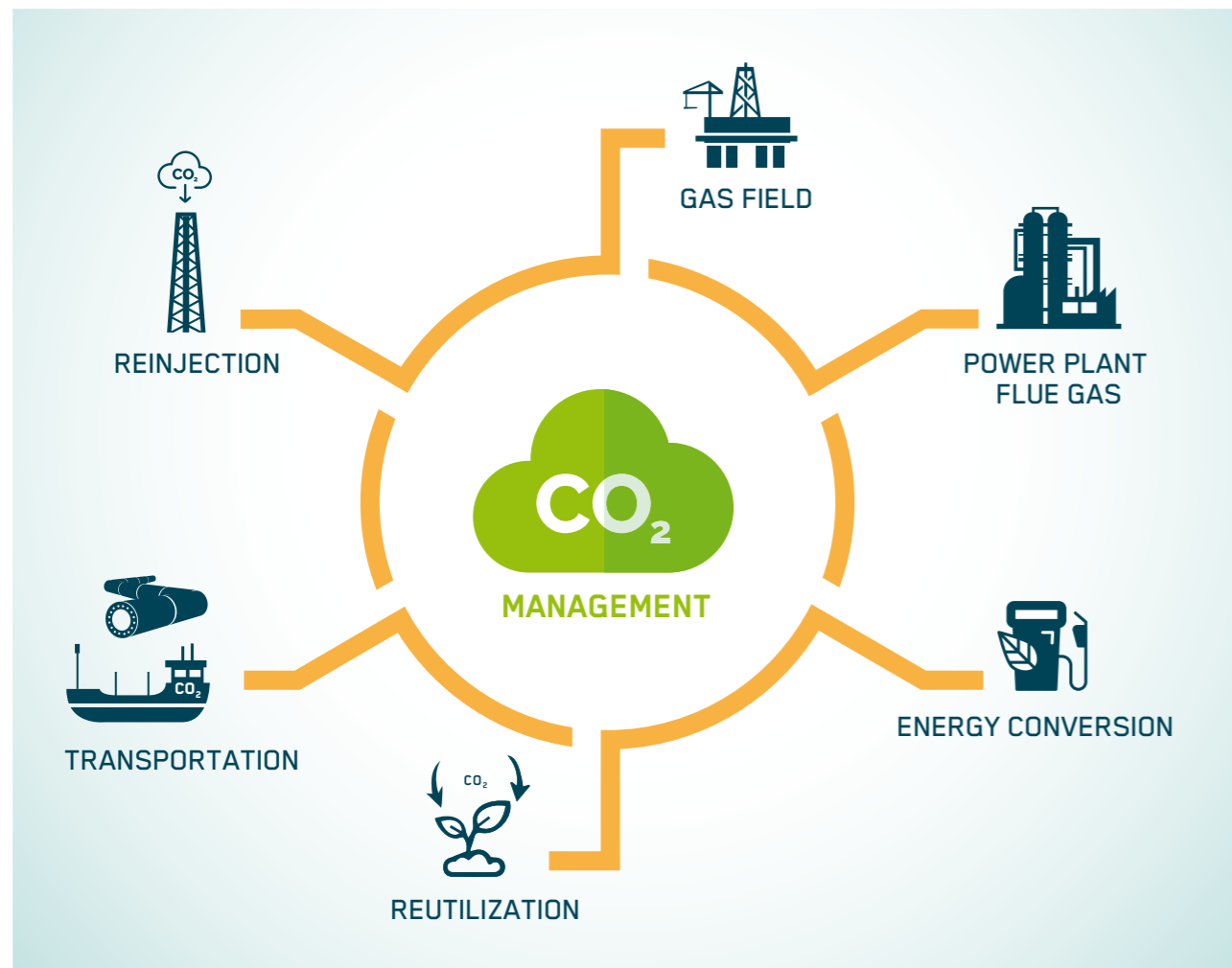
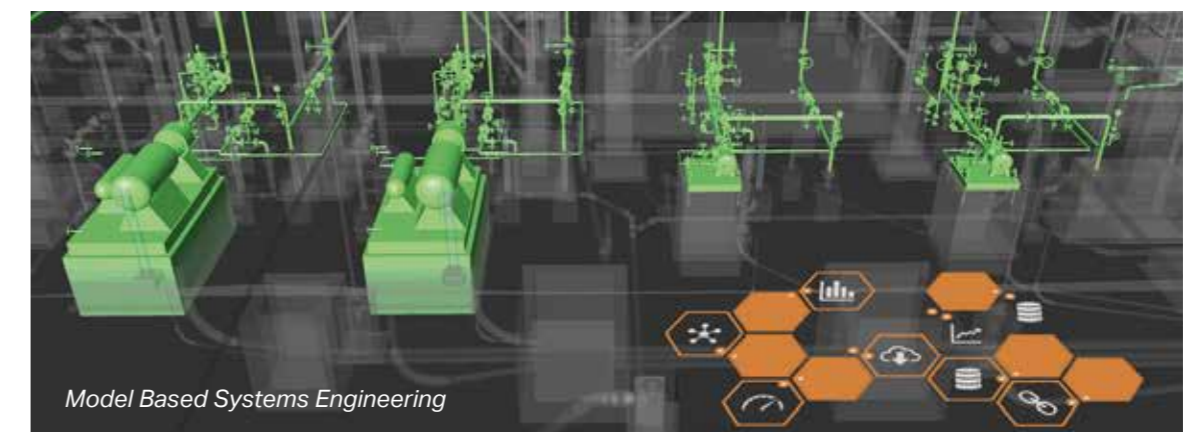
- Saipem has signed a License Agreement with ITEA (a company of the Sofinter Group) to produce steam, electricity and pure CO₂ by flexible use of low ranking fuels such as waste,

TRANSFORMATIVE DIGITAL INNOVATION AT SCALE



During the last 10 years our industry's productivity declined while project complexity, costs and time to deliver increased. This is the reason for us to embrace **transformative innovation** in our strategy: **re-inventing internal processes to boost productivity, unlock efficiency and create new value propositions.**

WHAT OUR CLIENTS VALUE & HOW SAIPEM CAN HELP



heavy oils, pet coke and several other feedstock. The Agreement gives Saipem access to this technology for Oil & Gas applications, allowing us to offer original and sustainable solutions to our clients.

- Saipem has also signed a **Joint Development Agreement with Sustainable Energy Solutions (SES)**, a US start-up company specialized in CO₂ **cryogenic recovery**, for the development of the application of SES' proprietary Cryogenic Carbon Capture™ (CCC) technology for treating high-CO₂ content natural gas. The captured CO₂ can be used in many applications, including enhanced oil recovery (EOR), biofuels or chemicals production.

CO₂ re-utilization

- Saipem has extensive industrial experience in the design and implementation of CO₂ reutilization plants for urea production using the proprietary licensed **Snamprogetti™ Urea** technology, and has been the EPC contractor for two methanol plants where CO₂ is reused to increase production.

Reduction of Gas Flaring

- Mostly Natural Gas, emissions: a few specific activities have been carried out with relation to real cases; innovative solutions are being developed.

Hybrid solutions

- Application of novel approaches to **optimize integration of renewables/energy storage** concepts with fossils exploitation in O&G operations, both Onshore and Offshore.

TOWARDS CARBON-NEUTRAL OPERATIONS ACROSS THE ENTIRE EPC VALUE CHAIN



Sustainability is at the heart of everything Saipem does. Our way of doing business focuses 360° on a vision of sustainability for the long term health of our environment, providing our customers with cutting-edge, efficient and certified technological solutions, across all phases of the EPC value chain.



DESIGN

- Saipem continues to adopt the most modern techniques and methods of work and smart working to minimize CO₂ emissions.
- Saipem provides a portfolio of technological solutions and patents that achieve energy efficiency and reuse of emitted CO₂.
- Saipem continuously studies new technologies and is actively involved in the development of patents aimed at improving sustainability.



PROCUREMENT

- Saipem has defined a **Restricted Green Vendor List**, providing an efficiency driven framework for the selection of subcontractors and transportation companies and for the procurement of consumables and equipment.



CONSTRUCTION

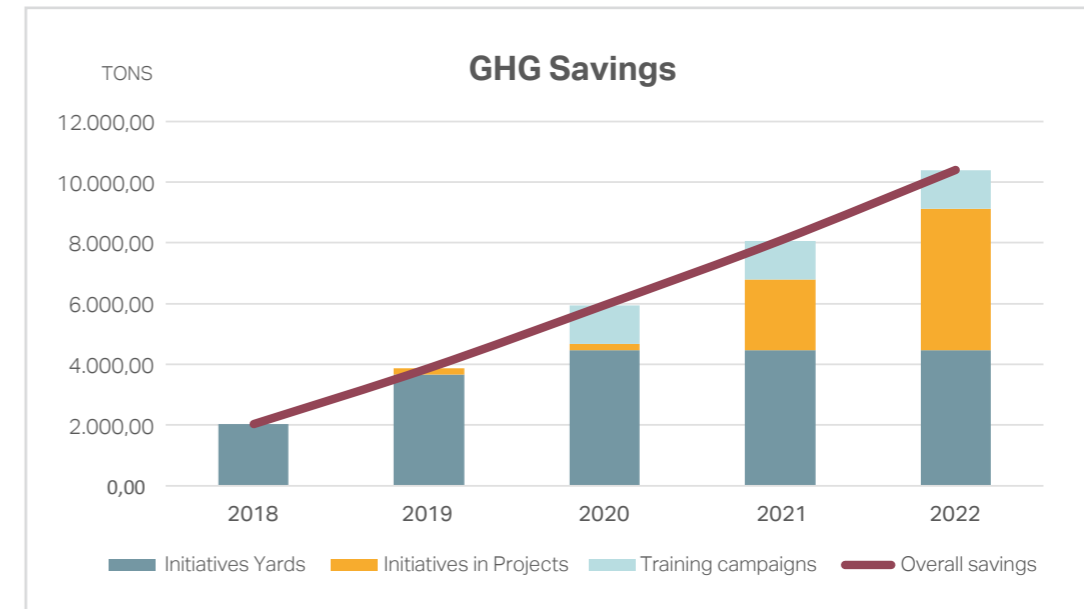
- Saipem is actively involved in the review of Criteria and Specifications for the construction of **TCF and Accommodation camps**, to include energy (including water) savings and efficiency and Green House Gas (GHG) reduction requirements. We have already implemented several improvements in our **Yards** as well, e.g. in Kazakhstan and Nigeria, where we have replaced fluorescent lamps with LED lights and installed light sensors.
- Saipem uses construction techniques tending to a zero carbon footprint.



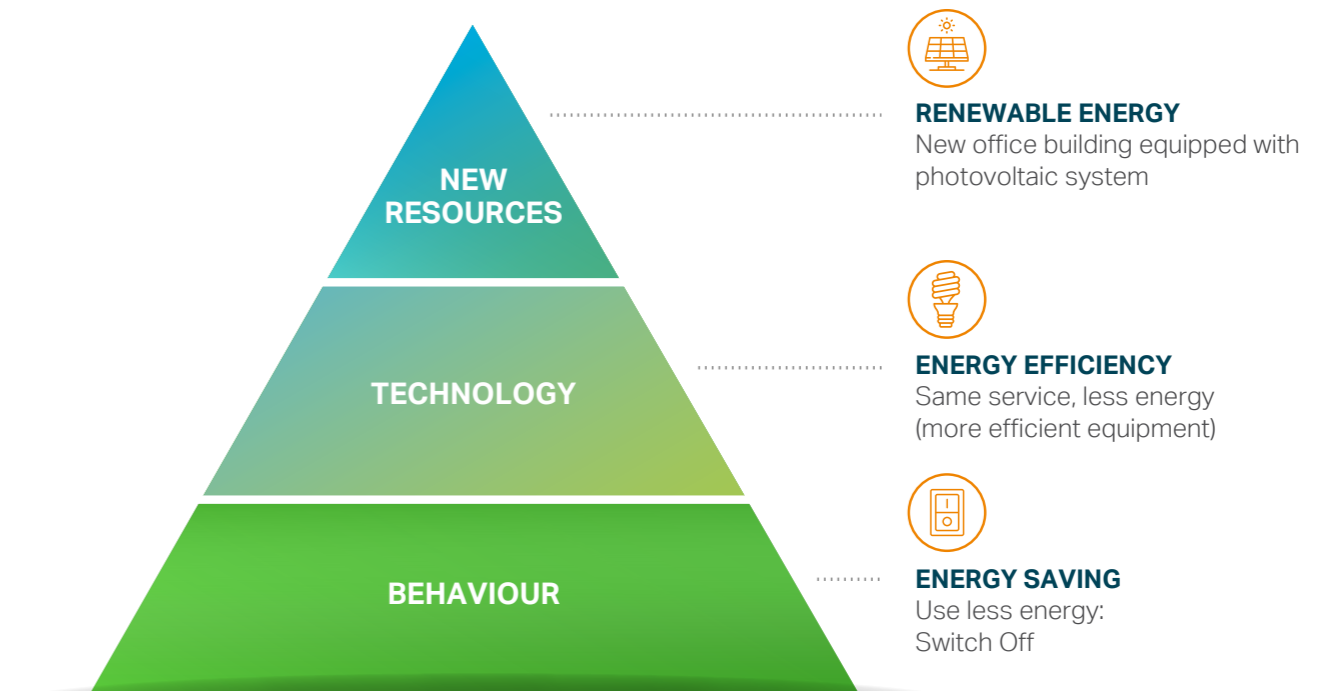
We can also release a **certificate of "footprint from cradle to the grave"** of our different technology solutions to our Clients.

The Onshore E&C Division's **GHG (Greenhouse Gases) Reduction Strategic Plan** includes:

- Revision and integration of Saipem Group GHG Emissions Estimation Process.
- Preparation of a Quadriennial Strategic Plan for the GHG reduction.



ENERGY EFFICIENCY IN SAIPEM: STRATEGY AND HIERARCHY



Our "Tackling Climate Change" report is available upon request.

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