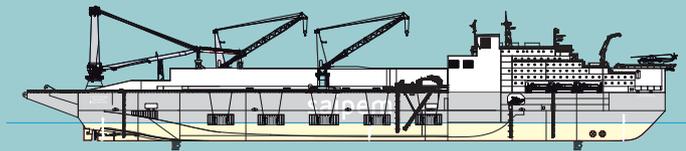


## Saipem's E&C flagship

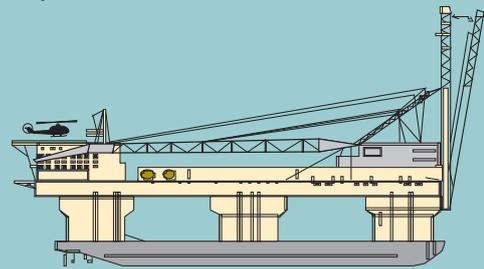
The Saipem Group possesses a strong, technologically advanced and highly versatile fleet, as well as world class engineering and project management expertise. These unique capabilities and competencies, together with a long-standing presence in strategic frontier markets, represent an industrial model that is particularly well suited to EPCI projects.

### Castorone



Ice class pipelaying vessel which can perform S-lay in shallow waters and steep S-lay in deepwaters (more than 2,000 m/6,562 ft), switching to J-lay mode for ultra-deepwaters (up to and more than 3,000 m/9,842 ft) or where the project requirements limit pipe bending and longitudinal stresses. This versatility has been achieved through numerous distinctive features such as a DP-3 dynamic positioning system designed for pipelay operations; a high bollard pull to counteract pipe bottom tension; and a ramp system with pipe roller supports that is fully remote-controlled without having to abandon the pipe, and capable of attaining a near-vertical ramp exit angle.

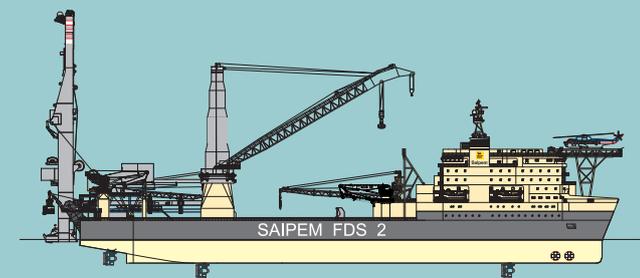
### Saipem 7000



Semisubmersible crane vessel with a state-of-the-art J-lay tower, upgraded dynamic positioning capability and fast ballasting system. It has the

capacity to handle the entire workscope of offshore construction developments worldwide, encompassing pipelaying in water depths greater than 2,000 metres and heavy lift operations up to 14,000 tonnes. The vessel's Class 3 DP system of 12 thrusters ensures that the vessel maintains good station keeping even in the most difficult weather conditions.

### FDS 2



Multipurpose monohull dynamically positioned crane and pipelay (J-lay) vessel utilised for the development of hydrocarbon fields in deep waters, equipped with cutting-edge class 3 DP and pipeline fabrication systems. The FDS 2 has a vertical J-lay tower with a holding capacity of 2,000 tonnes capable of laying quad joint sealines of up to 36' in diameter and also possesses the capability to lay pipes in S mode.

shipyards and with delivery expected in 2016. This DP class 3 vessel is the result of an innovative design philosophy that couples SURF installation capabilities with ultra-deepwater field development activities, as per Saipem requirements. It combines high-end subsea lifting capabilities of up to 900 Te with exceptional main deck and below deck payload abilities and with a 550 Te vertical laying system. *Normand Maximus* is designed to perform under the harshest environmental conditions, with multiple levels of redundancy. It will be equipped with two Innovator 2.0 ROVs in enclosed hangars with dedicated moonpools and cursor systems to allow deployment of the ROV with up to 7 metres of significative wave height. The vessel received the Clean Design Class Notation, achieving a 95% NO<sub>x</sub> emission reduction with the selective catalytic reduction system.

## Urea plants

- Snamprogetti™ Urea Technology: Saipem has contracted or licensed more than 130 plants with its proprietary technology for a total urea production exceeding 222,000 tonnes per day all over the world. The fluid dynamics of a urea reactor can be significantly improved by the introduction of the latest generation of high efficiency trays recently invented and patented by Saipem. The support of a systematic plan of fluid-dynamic simulations was a significant contribution to the development of the innovative design.
- Snamprogetti™ SuperCups greatly increase the mixing of the liquid and gaseous phases, thus optimising the product conversion rate in the reactor: the immediate benefit is the lower specific steam consumption requirement in downstream sections and, therefore, lower emissions of GHGs. Implementation of the new internals for the urea synthesis reactor was recently and positively carried out in two industrial plants. In newly-built plants the chance of building smaller reactors for the same capacity will also lead to savings in the needed amount of expensive construction materials. At the same time the 'Urea Zero Emission' project is proceeding and several solutions are currently being developed to make urea plants completely neutral toward the external environment.

## Other activities

**'Moss ECO' solutions** - Moss Maritime, an engineering company fully owned by Saipem, has developed the new 'Moss ECO' line of green technologies for application on drilling semisubmersible rigs, drill ships, platform supply vessels and anchor handling tugs. These solutions share the common goal of maximising energy saving and minimising the environmental impact during offshore drilling operations.

## New technologies for energy recovery in onshore plants

- Onshore plants, like oil refineries, petrochemical units, and oil extraction plants, typically use energy derived from fossil fuels, either produced on site by fuel combustion or