



### FPSO concept and definition design

Cron dall Energy can provide the design of FPSOs and FSOs from concept, through feasibility studies, up to pre-FEED and FEED levels of definition. Cron dall Energy has a demonstrable track record in the development of both new build and conversion-based solutions for FPSO and FSO applications.

We have the knowledge and experience to develop solutions to match clients' functional requirements and provide the technical and scope definition required for our clients to go to the market for the delivery of the specified unit on either a turnkey EPC, segmented EPC or lease/operate basis. Cron dall Energy can offer a complete package, or if clients require, work in cooperation with other providers, contractors, or shipyards to deliver a complete solution and a definition level engineering package.

Scope definition for our clients to go to the market for the delivery of the specified FPSO.

### Design capabilities include:

- Global design;
- Hull form, stability & subdivision;
- Hull and topsides structures;
- Marine systems;
- Process systems design, equipment sizing and specification, topsides lay-out;
- Topsides and marine utilities;
- Mooring and riser systems;
- Turret mooring and fluid transfer systems (where required);
- Developing level 2/3 costs and schedule to act as project baseline and/or sanction basis. (Deterministic or stochastic);
- Marine/topsides/subsea interface management.

### Case Study: NOV Harsh environment turret moored FPSOs

Cron dall Energy has supported NOV in the development of a series of turret moored FPSOs for harsh environment, all of which use NOV's STP™ turret mooring system. The vessels range in storage capacity from 450,000bbls to 1,050,000bbls.

