INTERNSHIP
OFFSHORE HYDROGEN SUPPLY CHAIN

PRINCIPIA

INTRODUCTION:

Due to new and updated regulations on air pollution, hydrogen (H2) market is growing constantly with a real interest for development of an offshore hydrogen supply chain, in combination of wind farms.

Within this context, PRINCIPIA would like to define a concept of supply chain combining both technological developments within hydrogen and wind markets.

SCOPE OF WORK:

The scope of work includes the 3 following tasks:

- ✓ State of the art and introduction to hydrogen related technologies
- ✓ H2 process system descriptions and selection of one technologies to be accommodated
- ✓ Full loop design of all key parameters of the supply chain

State of the art and introduction to hydrogen related technologies

Review of existing process for H2 production, with a dedicated focus on production offshore of green hydrogen.

H2 transfer systems and containment will be analyzed, as well as dedicated ongoing project terminals and H2 maritime transportation means. Objective will be to identify key components and assess main H2 challenges.

H2 process system description

Based on the state of the art review, a typical H2 production system will be defined for accommodation within one typical windmill foundation.

PRINCIPIA has a large experience in designing offshore structures, for both Oil&Gas and wind turbine projects. And the H2 integration process will be based on the more realistic marine structure according to PRINCIPIA experience.

Full loop design of all key parameters of the supply chain

A preliminary design will be realized, for the following key parameters, to be confirmed at the end of state of the art stage:

- ✓ General arrangement of the offshore structure with integration of main equipment (H2 containment, transfer systems, main equipment). This will include a weight estimate based on structural design
- ✓ Offshore hub definition
- ✓ H2 on-shore terminal
- ✓ Brief analysis of compatible H2 vessels

DELIVERABLES:

1 - Technical report including

- ✓ Documentation about the technological choices
- ✓ Main assumption and design parameters
- ✓ Calculation outputs

2 - 3D views (RHINO) for marketing support

GENERAL:

Based in PRINCIPIA offices at La Ciotat (13).