

Jack Up Barge

Company case Joint Interdisciplinary Project

Conquer the heavy wind maintenance market with self elevated platforms.

1 Introduction

Briefly describe the background of the company case:

- What does the organisation do?

Jack Up Barge owns and operates self-elevating platforms that support in hook up and commissioning and maintenance programs offshore mainly with hotel and crane services.

www.jackupbarge.com

- What recent (internal / external) developments led to selecting this case?

The start of the company coincided with the upcoming of the offshore renewables market and JUB was involved in the installation phase of several offshore wind farms. Currently equipment is known as a 'generation 1' and became obsolete in the wind farm installation campaigns (latest in 2012). JUB can no longer compete with dedicated Wind Turbine Installation Vessels, that achieve higher production rates as they are propelled and have a higher carrying capacity. Therefore JUB has to look at new markets.

- Describe the case as a problem statement

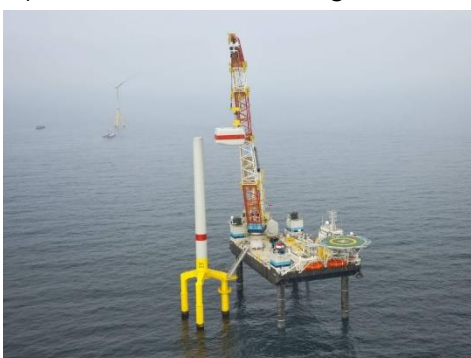
Wind farms are built offshore at an rapid pace to facilitate the energy transition. Although expectations of field owners and operators are that limited maintenance is needed JUB wants to anticipate on the requirement for heavy maintenance like blade change out or gearbox exchanges. The maintenance activities will be large whereas maintenance budgets are low.

Although our 'generation 1' units have limitations JUB wants to reinvent itself and benefit from the potential of heavy wind maintenance.

- Benefits of the proposed change/opportunity

If we can (economically) modify our units to fit the requirements in the heavy wind maintenance segment the company can find a new stable market segment that will help the company regain its growth.

- If possible include an image / drawing describing the case

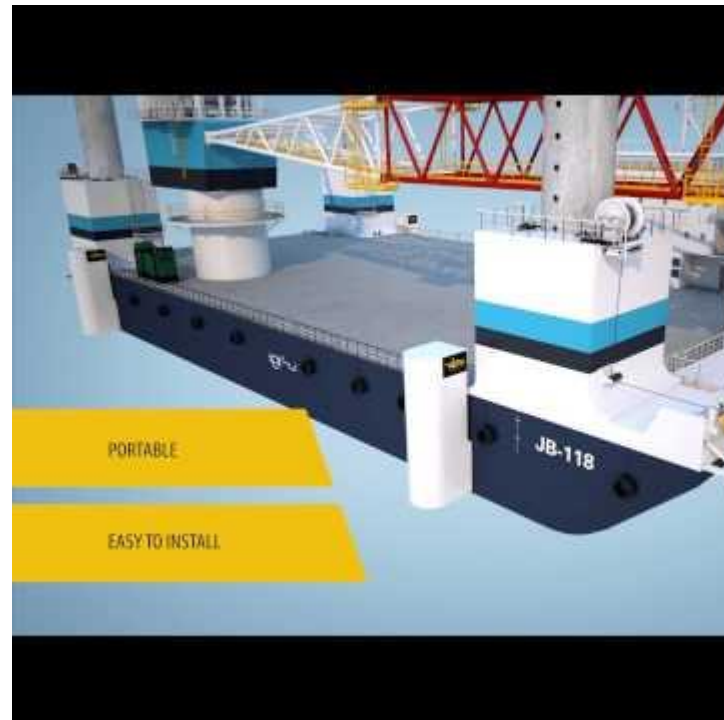


Previously involved in wind farm installation projects (high margin)



Presently involved in hook up and commissioning work (lower margin)

DP equipment in ownership, not permanently installed



Consider different crane options, more suitable for maintenance work compared to the current construction cranes;



ProductSheet FOC
05-2017 v2PRINT.pdf

2 Objective

- Describe the objective

Which consideration does JUB have to modify its fleet of self elevated platforms to win a significant market share in the growing heavy wind maintenance segment?

Being the first choice when blades, gearboxes and/or generators have to be exchanged offshore in the fastest way possible

Modifications that are considered are:

- *Modification with propulsion (the fleet is now non-self-propelled) to position the units in a wind farm without the use of anchors and mooring lines.*
- *Modification with cranes or other suitable tools to quickly exchange main components of WTG's.*
- *Enlarge operational weather dependent window (mainly wind and wave related)*

Define criteria to which the final result should adhere to:

The final result should present a comprehensive overview of the possibilities to modify the existing units to suit the new market segment.

- *Low investment costs (or a return on investment of max. 10 years)*
- *Low operational costs*

3 Scope

- Location, asset, unit (be as specific as possible)

JB 114 / 115 – GustoMSC SEA2000

JB 117 / 118 - GustoMSC SEA3250

- Provide several sub-questions that will need to be resolved as part of the problem statement

What is the most efficient and effective way to make our self-elevating platform propelled?

Which operational conditions are optimal for units to perform heavy wind maintenance services?

What tools (cranes or other lifting devices) have to be developed to efficiently exchange blades, gear boxes, generators of Wind Turbine Generators?

- Time scope (is this case part of a larger initiative?)

JUB is recovering from the crises in the offshore energy markets and is currently conceptualizing a pitch to companies requiring heavy maintenance in the renewables industry

Student selection

- What faculties would fit this case:
 - ~~o Aerospace Engineering~~
 - o Mechanical, Maritime and Materials Engineering
 - o Civil Engineering and Geosciences
 - o Technology, Policy and Management
 - ~~o Chemical Engineering~~
- What specific capabilities are required?
Familiar with Metocean and geotechnical information
Able to distinguish various WTG's (brand/type/size)
Familiar with the principles of self elevating platforms (propelled and non-propelled)

4 Business coach

- Who will coach the student team (if possible include a short bio)
Hugo Cramer, Engineering and Asset Integrity Manager
- Which department(s) will be involved?
Commercial & Operations

5 Partner companies and research organisations

- Mention any other companies involved in this company case
Possibly Huisman (alternative crane) / Gusto (design) / Veth (DP system)
- Mention any research organisations involved
nil