

Deep Thinking

An interview with FloaTEC

The link-up last year between Keppel FELS and J Ray McDermott to form the joint venture FloaTEC immediately introduced a heavyweight opponent onto the scene for deep and ultra-deepwater floaters. Here, *DI* talks to *Eric H Namtvoedt*, Chief Operating Officer of FloaTEC, about the company's aims, strategies, engineering solutions and future deepwater market trends

DI: Why was FloaTEC formed? What were the market drivers that gave rise to the concept and made it happen?

EN: The Company was formed specifically to provide unbiased and concept-neutral engineering to support the industry. For J Ray McDermott, their objective was to build a company to obtain, develop and commercialize multiple deepwater floating production solutions, to provide an execution strategy more aligned with clients needs than the old Spars

International Inc (SII)/SparTEC offering, and to capitalize on lessons learned relative to Murphy's Medusa and Front Runner projects, and Dominion's Devil's Tower project. For KFELS, their objective was to create greater participation in the oil & gas production market, establish closer dialogue with end-clients on their need for deepwater solutions, and capitalize on its 17 globally positioned yards.

As far as market drivers that gave rise to the concept, deepwater is driving much of the industry today and is a major focus for most operators. Deepwater development represents significant growth potential over the next 5-10 years.

DI: FloaTEC is obviously in the early stages of building up a reputation for itself in deepwater projects but obvi-

ously has the direct links in terms of project experience via J Ray and Keppel FELS. Does that mean we can expect fast results in terms of contract awards compared to, say, an entirely new start-up company?

EN: Because of its strong lineage, FloaTEC has established instant credibility in the marketplace. Its ability to integrate with its respective parents' organizations to achieve the necessary organizational capability to execute

projects gives it a significant advantage over a new start-up. Through JRM's and KFELS' project staff experience, and combined with FloaTEC's core team of functional discipline leads, a mature project organization can be mobilized in a short period of time. Clients are confirming their belief in the business model by entrusting their floater project work to FloaTEC, and have expressed satisfaction with the caliber of the indi-

viduals who have joined the company.

DI: The flexibility of FloaTEC's business model, giving operators plenty of 'elbow room' when deciding how to contract all or part of an entire package for a deepwater floater, has created quite a stir. Tell us how this will translate into direct benefits for operator companies.

EN: You are right in that FloaTEC offers a unique business model which gives the operator maximum flexibility in how they contract for deepwater floating production systems. For example, one of our models will enable the operator to bid out fabrication of the hull to yards of their choice, therefore allowing them to maintain more control over that aspect of the project.

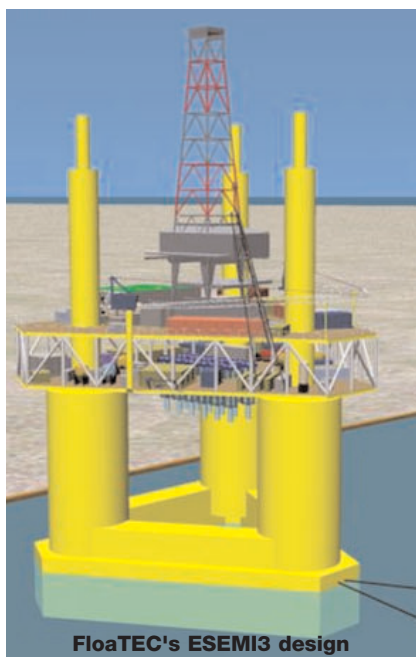
When driving the message of our contracting flexibility, we need to always remind our customers that our preference is to deliver EPC and that we always set out to demonstrate the effectiveness of FloaTEC providing full scope based on our Delivery Mindset and Capabilities.

DI: Can you outline any work the company is already undertaking in terms of technical feasibility studies?

EN: We are currently assessing the technical feasibility of dry tree applications using various hull forms (spar, TLP, and semi) in areas that traditionally use wet tree solutions.

DI: Outline the portfolio of technology innovations FloaTEC has at its disposal, and what perhaps it has up its sleeve for the near future. Can you tell DI about new concepts and solutions on the drawing board for deep and ultra-deepwater projects, including the patent recently filed for a new Spar concept.

EN: In addition to its products based on accepted technologies, FloaTEC is developing several other concepts that are aimed specifically at reducing CAPEX and OPEX for deepwater designs. For example, marginal fields in ultra-deepwater become attractive when the structure is multi-functional both in



FloaTEC's ESEMI3 design

Deep Thinking

terms of drilling and production. The ability to convert from one operation to the other can offer significant savings.

The patent filed for the new Spar concept (Ring Spar™) is primarily related to the structural architecture of the hard tank. The hull maintains the overall performance and utility of the Truss Spar. The hard tank is surface piercing section of the hull which provides the main buoyancy and controlled compartments for ballasting. This new design is more construction friendly and uses fewer structural components. It lends itself to more effective fabrication and lower steel weight. These attributes offer lower risk, improved safety and reduced cost to fabricate.

DI: Where do you see deepwater technology reaching its limits? Is there a cut-off point approaching?

EN: The present state-of-the-art technology enables operations in depths up to about 10,000 ft. This most likely covers the vast majority of known reserves, considering that the average depth of the four oceans is about 12,000 to 13,000 ft. FloaTEC is confident that as reserves in depths of 10,000 ft are exploited, the knowledge gained and technology developed will allow an expansion to the deeper sectors.

DI: You said recently: "The future of the offshore oil and gas industry is in the deepwater. Given the current high number of deepwater prospects and opportunities available, FloaTEC is without a doubt in the right market, at the right time, with the competitive solutions and experienced people." Tell us how do you see the deep and ultra-deepwater market developing over the next 5-10 years, both in terms of project activity and regional aspects?

EN: According to Infield, over the next 5 years a total of \$69 billion is forecasted to be spent on deepwater development. Global deepwater and ultra-deepwater forecasted expenditures are provided below. This includes all expenditures for the following elements:

Drilling and completion costs (excluding exploration drilling);
Platform costs (including installation,

but excluding operating expenses);

All Subsea, Riser, Umbilical, and Flowline (SURF) costs (including installation).

28% of these expenditures will be earmarked for developments in North America, 40% in Africa, 23% in Latin America and 7% in Australasia. Those are the areas where we will focus most of our attention.

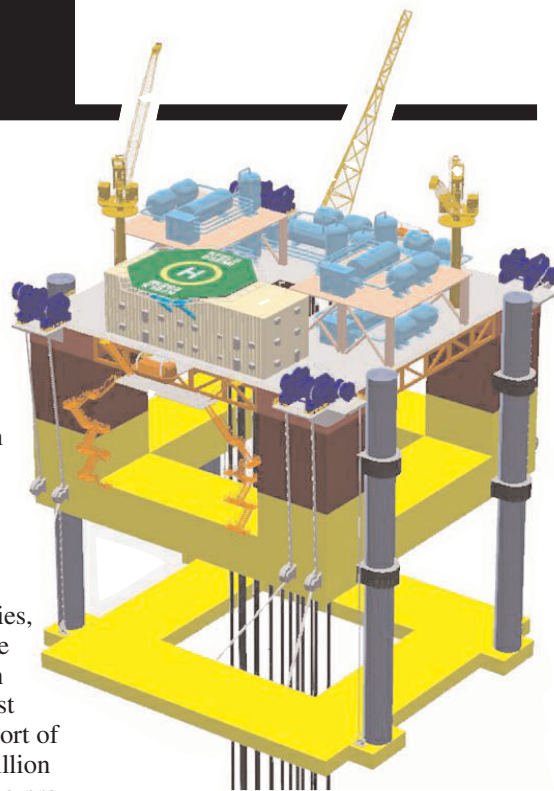
In terms of FloaTEC opportunities, over 200 deepwater prospects have been identified for development in the next 5 years. Potentially, almost half of these could involve some sort of FPS. It is projected that over \$8 billion will be spent on the type of floating production platform facilities that FloaTEC offers, i.e. TLP, Spar, and Semi.

DI: What is FloaTEC's focus and strategy expected to be over this same period of time? What are your aspirations for the company's development?

EN: Our objective will be to position ourselves early to perform technical feasibility study work, pre-FEED, and FEED work in an effort to influence the decision making process and establish credibility. We will position ourselves early with key growth companies in an effort to introduce them to FloaTEC and our unique business model.

Given the importance of Houston as a deepwater center of excellence, Houston will be a major focal point for FloaTEC in terms of marketing and business development initiatives. These efforts will encompass a number of avenues, including conducting deepwater symposiums, lunch and learns for clients, face-to-face meetings, customer outings, participation at OTC and other targeted conferences, technical papers, etc.

FloaTEC will also implement an integrated marketing program to provide a cost-effective mix of media to powerfully deliver our message. To achieve this objective, FloaTEC will create a strong brand awareness and image by educating targeted decision-makers about the benefits of using FloaTEC's business model, a model based on flexibility and delivery.



FloaTEC's ESEMI4 design

DI: Operators these days treat the conceptual and FEED stages of their projects often as the most crucial part of a deepwater project's life, where they can maximize its commerciality and hopefully avoid spiralling costs later in the project's life. How does FloaTEC ensure it delivers what operators are demanding right from a project's inception? Can you give an example of how it might be able to dramatically influence/change an operator's approach to a project at the conceptual/screening/feasibility stage and add value?

EN: FloaTEC is in the unique position to be able to offer a solution based on the three industry accepted systems namely the semi-submersible, the Tension Leg Platform, and the Spar. The FEED phase of a development is an opportunity to examine all possible approaches. Engineering expenses are small in comparison to cost of materials and fabrication. FloaTEC has the core technical and business competencies to take a solution from concept to delivery due to its access to the resources of its parent companies. We are also willing to allow a client to take our design solution and have it built at a competitor's facility. In other words, if the client can negotiate a better deal even with the product we develop in a FEED study, he is welcome to make that choice.

Deep Thinking

DI: Do you feel operators are becoming too demanding in terms of what they expect of technology and engineering experts such as FloaTEC in terms of scheduling purposes, or is that just the evolving nature of the E&P industry? How blurred have the lines become between the conceptual, pre-FEED, FEED and Detailed Design stages?

EN: We understand that at today's prices, the operators are anxious to get product to the market as soon as possible. They seem to be paying much more attention to the delivery schedule because of the shrinking capacity available in global fabrication facilities. We are looking at ways to optimize our delivery models by adjusting our designs and linking them more directly to our fabrication facilities and methodologies in an effort to decrease our delivery times while maintaining product quality.

The lines between the different stages have not become so blurred that they do not make the distinction between the various phases apparent. There are still major milestones at the various stages that are recognized. Contractors and operators are working together to reduce the cycle time from concept selection to delivery but the decision processes that bring the project from one phase to the next are given due diligence.

DI: Please outline what you see as some of the biggest challenges and some of the most promising state-of-the-art solutions for deepwater field developments in general. Any 'blue sky' concepts for the future that you believe hold the greatest realistic potential?

EN: Some of the biggest challenges from a technical perspective are high pressure and high temperature reserves. In ultra-deepwater, providing direct vertical access to the wells will be come more difficult. There is a practical limit to how heavy a top tensioned riser can become as the water depth increases. One solution is to reduce the requirement for heavy risers by carrying out first stage separation at the seafloor.

FloaTEC is looking at concepts that combine the advantages of quayside

commissioning of the system with the low motions of a dry tree units. With the exception of the TLP, low heave vessels are typically deep draft and cannot have topsides completion carried out quayside because of the shallow water. We are developing a design that will allow the lower part of the hull structure to be retracted so it can come into shallow water for completions or even re-fitting to convert the hull from a drilling vessel to a production vessel.

DI: Floating production solutions versus Total Subsea – do you believe floaters will remain the lead concept in the long-term for deepwater developments, or do you see total subsea solutions as an increasingly tough challenger. Or is subsea technology's role likely to be more of a complimenting technology?

EN: There have been significant advances in subsea technology over the past decade but there will be a need for floaters in the foreseeable future. Some of the reservoirs have complicated structures and need surface support for large equipment such as compressors and separators to treat the product and prepare it for transportation. Local in-field surface support for compression and injection are also important to the operations that make a lot of reservoirs economically feasible.

DI: Do you think the 'hub-and-spoke' approach is the best way for oil companies to maximise the reserves potential of a frontier area, for example such as Walker Ridge in the GoM or the Marlim fields in the Campos Basin?

EN: In some cases yes, but in others dedicated facilities may be the preferred option. It depends on the characteristics of the field and the proximity of the wells. It is also dependent on the development philosophy of the operator. Some operators prefer to have smaller facilities and bring in others as they learn more about the field. This can mean earlier production with a staged approach and better economics.

DI: Just how important was it to have onboard at the launch of the new ven-

ture the long-term industry experience of its key individuals? Many are familiar faces. What do they bring to the table?

EN: The success of the venture will be determined by its people. FloaTEC has been able to attract some of the best from their respective fields in the industry. All members of the leadership team have 20 to 25 years experience in areas that complement each other. They are attracted mainly by the multiple floater solutions that FloaTEC offers and all have an entrepreneurial attitude towards the challenge at hand. This culture extends to the technical specialists who will develop and implement the functional aspects of the company.

DI: A very general and certainly not a new question for you. You must have concerns, as everybody does, about the shrinking pool of experienced engineers in the upstream industry. Has this already caused problems in your experience in terms of limiting the speed at which projects can be brought onstream?

EN: Absolutely. We are already seeing delays to projects due to the lack of deepwater drilling rigs, for example. Everyone recognizes the resource constraints and the corresponding challenges. Nonetheless, we are confident that we will continue to attract the best people - not the least because we have access to most of the world-leading deepwater floating technology solutions, but also can engage fabrication/construction capacity and capability. Our ability to leverage this knowledge is second-to-none! Offering such a Delivery Model integrating most scopes of floating deepwater solutions puts FloaTEC in a unique and preferred position – both with clients and with the scarce industry pool of resources!

The resource issue is a major concern to everyone in the industry. It will no doubt have a significant impact on the speed at which developments move forward.

More information about FloaTEC can be found at www.floatec.com