

# Solutions for Offshore Projects Worldwide

## World Energy interviews Philip Asherman, executive vice president of CB&I

*CB&I is one of the world's leading engineering, procurement and construction (EPC) companies, specializing in lump-sum turnkey projects for customers that produce, process, store and distribute the world's natural resources. CB&I is a fully integrated EPC service provider, offering a complete package of conceptual design, engineering, procurement, fabrication, field construction, mechanical installation and commissioning.*

*CB&I serves customers in a number of key industries including oil and gas; petrochemical and chemical; power; water and wastewater; and metals and mining. Its projects include hydrocarbon processing plants, liquefied natural gas (LNG) terminals, offshore structures, water storage and treatment facilities, and other steel structures and their associated systems. CB&I has approximately 10,000 employees and operates from more than 60 locations worldwide.*

**World Energy:** What capabilities and experience does CB&I have in the design and construction of offshore facilities?

**Asherman:** In 2003 we completed the acquisition of London-based John Brown Hydrocarbons Limited, broadening our scope of services to provide upstream production through downstream processing, storage and distribution. CB&I John Brown brings considerable engineering and project management capabilities to CB&I, including extensive experience in the offshore market. CB&I John Brown has been a leader in the design of offshore facilities for over 30 years, with more than 130 designs in service worldwide.

For topsides, we have simplified designs to minimize development costs. And when it comes to offshore substructures, we have consistently designed components that are lighter and less complex, capturing significant capex and operating savings for our clients. From the Arctic conditions of Alaska and Russia and the harsh environments of the North Sea and Northern Atlantic to the more benign waters of Southeast Asia, we have solved some of the most technically difficult challenges faced in offshore work.

**World Energy:** How is CB&I different from other contractors who build offshore structures?

**Asherman:** For one thing, we are independent and not specifically tied to any particular technology or geography. Because of that, we can apply our expertise to selecting the best solution for our clients. We have the confidence and the proven experience to work in challenging areas, such as the North Sea, West Africa and the Middle East. And we are distinctly local in these regions, with the ability to bring extensive knowledge of local customs, logistics and resources to each project. This gives us the ability to execute projects that meet the needs of our clients – on schedule and within budget.

**World Energy:** From your perspective as an industry participant, what trends do you see shaping this market?

**Asherman:** I'm glad you asked that question. From our perspective, there are actually two distinct markets for offshore facilities. On the one hand, there is a market for the more standard shallow-water facilities. These are frequently executed on an EPC lump-sum turnkey basis within the local region. On the other hand, there is a market for deepwater facilities that involve more complexity and risk. Because of the challenges, this market is typically executed on a cost-reimbursable basis, although sometimes the structures can be fabricated on a lump-sum turnkey basis anywhere in the world and then transported to the site once complete.

Also shaping the market, of course, are the major players and the geographies in which they operate. Here, too, there is a split. New or expansion projects in mature areas, such as the Gulf of Mexico and the North Sea, tend to be smaller and driven by smaller operators. Other areas, such as West Africa, deepwater Gulf of Mexico and countries in the Commonwealth





of Independent States, are dominated by global oil companies. These projects are typically larger and more complex, and they require technological innovations to successfully execute.

**World Energy:** Can you tell us about some of these technological innovations?

**Asherman:** Certainly. Much of the emphasis today is on developing subsea structures for ultradeep water. Generally speaking, the classification “ultradeep” refers to water depth over 2,000 meters. In the shallow water, recent innovations have simplified structural designs, helping us reduce construction costs. The development of floating production, storage and offloading (FPSO) vessels has been gaining some attention. And there’s some interesting work being done to tie stranded reserves back to existing facilities, usually platforms that have spare capacity. These subsea links, known as tie-backs, can also be used to reduce the costs associated with new production.

Of course, a lot of resources lately have been focused on proposing designs for offshore LNG import facilities. We’ve developed an offshore LNG import terminal concept called GasPORT™ that is suitable for the shallow waters of the Gulf of Mexico.

**World Energy:** Looking ahead over the next decade, what influences do you see shaping the market?

**Asherman:** Major international oil and gas companies are partnering with state-owned national petroleum companies. These partnerships will be driving projects for the next 10 years. Local content is a key issue for most national petroleum companies. Meeting local content requirements will continue to be a critical factor in winning future awards. CB&I has a direct hire philosophy and local presence in the areas where we work, which helps us meet local content requirements. At the same time, we have the global reach and resources to execute major projects around the world. This capability is important to the international oil and gas companies.

**World Energy:** How does a contracting company remain competitive in the offshore market?

**Asherman:** As the market continues to mature, it’s important to be able to transfer knowledge and capabilities from stable applications to emerging ones. It’s also necessary to have the flexibility to repurpose and repackage components from previous experiences and apply them to new situations. At CB&I, we have a great track record for doing this. To be competitive in the offshore market, we look for opportunities to capitalize on our proven strengths and related experiences.

Take wind power, for example. Our experience with offshore oil and gas facilities, combined with our extensive fabrication capabilities within the water industry, has provided us with

experience and technologies that we can now apply to offshore wind power projects.

**World Energy:** But isn’t it true that cost overruns on offshore projects have led to financial problems for many EPC companies? Is CB&I concerned that offshore facilities are too difficult to accurately estimate?

**Asherman:** No, we are not concerned. Let me explain. As projects over time became larger and more complex, costs were sometimes underestimated. At the same time, competition from the Far East entered the market and drove prices to all-time lows. Contractors willing to take on risk just to win work found themselves exposed to spiraling costs associated with the challenging offshore environment. But CB&I has a very disciplined approach to bidding projects. We do not accept risk that isn’t within our capability to manage. We understand the risk involved in executing offshore projects, and we work within our own capabilities. This approach is not only better for CB&I, it’s better for our clients as well. They know we will deliver on our promises.

**World Energy:** Beyond traditional facilities, are there other markets emerging that will benefit from the technologies and experience gained offshore?

**Asherman:** Definitely. As we’ve discussed, wind power and offshore LNG facilities are already beginning to apply these technologies. In the future, we will likely see other renewable energy sources, such as wave energy, capitalizing on the knowledge gained from mature offshore markets. While the wave industry is currently in its infancy, significant research is being conducted off the coast of the United Kingdom and off the West Coast of the United States. Several prototype and pilot projects have been built around the world, and the first wave energy converter began supplying power to Scotland’s electrical grid in August of last year.

**World Energy:** Do you have any final comments?

**Asherman:** Yes. We believe today’s offshore market provides many attractive opportunities. But contractors must retain the flexibility to independently select technologies that best suit their client’s needs. And they must have the experience and expertise to deliver projects on schedule and on budget. At CB&I, we focus on the markets that we have the capability to execute successfully. Consequently, we are competitive as well as local in these markets.



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