Driving cost efficiency in deeper water

Next-generation flexible pipe
BHGE composite flexible pipe—the elegant solution for deepwater fields

20% lower total installed cost
vs. conventional flexible pipe

30% lighter weight
vs. conventional flexible pipe

50% stronger
vs. conventional flexible pipe

Enabling 15 Ksi
to 3000 m and beyond

150°C capability
Increasing productivity in deeper waters without increasing costs

Low oil prices, along with cost and schedule challenges, continue to weigh on market and are already slowing, providing some of the most difficult challenges in the industry’s history. Meanwhile, global offshore operations are shifting to more remote locations that offer extremely complex and demanding development and production conditions.

Vital new business opportunities exist in deeper waters, most of which offer extremely complex and demanding development and production conditions. The enabling technology is an innovative high-pressure, high-temperature barrier made from a new grade of copolymer. This is ideal for deepwater developments, as well as efficient pressure resistance in all water depths.

Flexible pipes provide an enabling solution in this area, increased subsea deployment, enabling the use of floating production units, and handling dynamic conditions. But, as technologies become less cost-effective, conventional designs are structurally limited when it comes to moving into deeper waters, higher pressures or larger diameters.

Flexible risers provide an enabling solution in this area, increasing subsea-layout versatility, enabling the use of floating production units, and handling dynamic conditions. But, as technologies become less cost-effective, conventional designs are structurally limited when it comes to moving into deeper waters, higher pressures or larger diameters.

BHGE’s portfolio of flexible pipeline solutions draws on over 30 years of research and development, material science, and innovation. Our flexible products are installed in some of the most extreme conditions across all major oil producing regions, including the Gulf of Mexico, Brazil, West Africa, and Sub Saharan Africa.

A long history in deep sea

Composite flexible pipe

Composite flexible pipe replaces multiple layers that perform separate load-bearing functions, and these designs may be heavier than the equivalent solid-wall pipe. The weight of conventional flexible pipe impacts not only the new foundation stage, but also the transportation, installation, and the mooring infrastructure needed to support them in the water column.

Composite flexible pipe solves this problem by creating a metallic pressure armor layer with an innovative composite bonded liner. This game-changing design maintains all the tried and trusted system benefits of the flexible pipe solution, and adds the lightweight pipe capability, which is ideal for deeper developments, as well as efficient pressure resistance in all water depths.

The new composite bonded armor makes the pipe 30% lighter than conventional flexible pipe, and increases value throughout the entire supply chain. More pipe can be stored and transported per reel and, critically, field configurations can be significantly optimized by reducing or eliminating the need for costly ancillary components such as buoyancy, clamps, and tethers.

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Taking it further

We are delivering a 15ksi capability for flexible transfer lines, jumpers, reeves, and flowlines.

Offshore operators now have a cost-effective and reliable way to improve their reach into deeper waters and more challenging environments.

Key advantages:

- Optimized for high-pressure applications
- Greater production costs and risk at risk of failure
- Narrowed for impact modifier additives, lowers cost
- Dynamic bending transitions lower than -40°C
- Combination excellent chemical resistance and operational stability up
- and potentially beyond, 150°C with excellent fatigue performance
- No need for impact modifier additives, because its
- Contains no plasticizer, so there’s no risk of shrinkage
- Optimized for high pressure applications
- Higher pressure capacity
- 30% lighter than conventional flexible pipe
- Environmentally beneficial composite pipe
- Ideal for deepwater developments, as well as efficient pressure resistance in all water depths.
- BHGE is at the forefront of developing standards and practices for the incorporation of carbon fiber thermoplastic composites into flexible pipe. We have augmented our extensive internal research and installed experience with industry-wide collaborations, including certification agencies such as DNV GL, and joint industry projects such as the BPCG’s qualification program. BHGE’s portfolio of flexible pipeline solutions draws on over 30 years of research and development, material science, and innovation. Our flexible products are installed in some of the most extreme conditions across all major oil producing regions, including the Gulf of Mexico, Brazil, West Africa, and Sub Saharan Africa.

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