Flexible Pipe Systems (FPS)
Highly adaptable, reliable, and cost-effective pipeline solutions for offshore and subsea projects
Dynamic risers, flowlines, static and dynamic fluid transfer lines, and jumpers are critical to offshore oil and gas production, injection, and export systems. They are subject to extreme temperatures, pressures, physical stresses, and movement while carrying hot, highly pressurized corrosive materials—yet must still ensure reliable connections and optimal product flow. As offshore developments move into deeper waters and even more challenging environments, flexible pipe is a highly versatile fluid transportation solution, often it is the only suitable technology to enable floating production.

Our portfolio of flexible pipe solutions draws on more than 25 years of research and development, material science, and installation experience in some of the harshest conditions the industry offers—particularly in environments where water depth and seabed conditions impose unusual restrictions. Our products are robust, highly flexible, and adaptable to unique project requirements, and offer cost-effective and proven reliability for corrosive reservoirs.

The performance value of our flexible pipe is further enhanced by BHGE's Fullstream industry capability and track record, which ranges from high-pressure/high-temperature and extremely corrosive applications, to the deepest water drilling record, the longest subsea tieback, and the offer of complete systems design for some of the world's most ambitious offshore and subsea projects.
The next generation of flexible pipe

Flexible pipe is highly variable in meeting the demands of subsea and FPSO-based production in some environments. It’s only the technology suitable for a production system.

Flexible pipe systems (FPS) products can be found in every major oilfield production basin worldwide and are engineered to withstand the harshest operating conditions. Our systems are currently operating in depths of 2000 m and are being qualified up to 3000 m. Baker Hughes, a GE Company (BHC) products are unbonded flexible pipe constructed from multiple layers of bellows wound metallic and extruded thermoplastic barriers. Each layer is designed to address specific demand requirements, including, for example:

- High temperature
- High pressure
- Corrosion
- Dietary marine environments such as floating production in shallow zones
- Water depths to 2140 m
- Pipe inner diameter from 2 in. to 16 in.
- Flexibility

We have a portfolio of differentiarized technologies for polymer systems, metallurgy, mathematical modeling, and analysis. We also invest significant resources and effort in our R&D efforts evolutionary the development of advanced analytical modeling tools for material and product testing.

Key benefits
- Known track record in all water depths:
- More than 4000 miles worldwide globally
- Operational in ultra-deep waters of 2140 m: dynamic lines suspended in the water column

An established portfolio

Our commitment to HSE

Safety

Our corporate culture is one of “building it right the first time”. We always strive to do it better, not only by applying the best processes and technologies, but by conducting our operations and relationships with the utmost honesty and integrity no matter what challenges may arise.

Integrity

We mitigate risk and consider the effects on people, communities, and natural environments in everything we do. HSE is a priority everywhere from the layout of our workshops, all the way through to the operation of our engineering programs—a global initiative dedicated to delivering products that are better for both business and the environment.

Quality

Every BHC innovation is driven by a service, and practical industry requirement. We carefully evaluate product designs with proven technologies, rigorous testing, and qualification processes. Our objective is to continually deliver measurable increases in efficiency, reliability, availability, and performance.

Integrity management

We build value in experience in the design, testing, and manufacturing of flexible pipe and flowlines, we have established a unique position in the understanding of how these pipe systems perform in operation. We provide a comprehensive range of products and services to assist in the integrity management of these systems.

Our proven solutions include the MAPS™ wire rope and fiber-reinforced composite inspection systems, integrated leak-detection systems, and other optically-based sensors embedded in the pipe structure, and use proprietary software for the monitoring of polymer and pipe annular. In many ways, our monitoring systems can be retrofitted to existing infrastructure, regardless of the original equipment manufacturer. In all cases, our approach is underpinned by a risk-based methodology developed specifically to address the attributes of the flexible pipe construction that ensures lifecycle performance.

We are qualified to ISO 13628-2 and -11, the highest standard. But that would be of little value without the same rigorous approach to installation, ensuring the highest levels of quality and reliability when it comes to deployment and most importantly—connection to riser bases and accommodating any unforeseen issues such as subsea canyons, floating production in shallow tidal zones, or unstable geo-hazards such as mudslides or slopes.

An installed base of over 70 dedicated regional support teams worldwide;Comprehensive service offerings that include inspection, monitoring, survey, and repair for both onshore and offshore locations, as well as onshore storage and distribution centers.

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Key benefits
- Reduced operational, safety, and environmental risk
- Improved asset availability
- Reduced costs through a predictable maintenance calendar
- Potential for life extension from the acquisition of service data

At a glance

FPS products and services include:
- 1,500+ employees worldwide
- 2 major manufacturing facilities
- 7 dedicated regional support teams worldwide
- 20 available solutions evaluated in the JIP

With decades of experience in the design, manufacturing, and application of flexible pipe systems, we provide the right solutions for each customer’s unique needs. We own a fleet of pipes that are capable of being manufactured to cover any size range of construction vessels. We also have well-established relationships with major offshore contractors. These installation resources enable BHC to develop innovative and cost-effective solutions to meet the most demanding project challenges.

Our commitment to HSE

Key benefits
- Life extension and cost savings
- Reduced costs through a predictable maintenance calendar
- Potential for life extension from the acquisition of service data

FPS PRODUCTS, SERVICES AND SUPPORT