

Subsea projects and services capabilities

OFSE (Oilfield Services & Equipment)



We are an energy
technology company.
Our innovative technologies
are taking energy forward.

We are Subsea Projects and Services

HEADQUARTERS



STRATEGICALLY MANAGED CORPORATE CENTER

REPORTING BUSINESSES
AND REPORTING
SEGMENTS

Oilfield Services & Equipment (OFSE)

President & EVP:
Maria Claudia Borrás

Industrial & Energy Technology (IET)

President & EVP:
Ganesh Ramaswamy

Well Construction | Production Solutions
Subsea & Surface Pressure Systems |
Completions, Intervention & Measurement

Gas Technology | Industrial Technology

Subsea Projects & Services

Subsea Projects and Services leadership team



Romain Chambault
Vice President
SP&S Product Line

Product Line Leadership Team



Umberto Nespolo
Sales & Commercial



Gary Fines
Project Management



Gunnar Oksefjell
Service Delivery



Senthil Chandrasekar
Service Delivery – Wellhead
and Casing Systems (WCS)



Gareth Davies
Product Management



Mo Farid
Engineering &
Technology



Jim Roberts
Product Fulfilment



George O'Doherty
Sourcing



Scott Hamilton
Technology Fellow



Fouzi Bouillouta
Product Management –



Tomilola Famuboni
Business Transformation



Chad Caillouet
Special Projects Director

Region Product Line Directors



Derek Price
APAC



Walid Ramadan
MENATI



Andy Barr
ENSC



Stephen Adeymo
SSA



Sidnei Cororatte
LATAM



Matthew Dossey
NAM

Enabling Functions



Claire Simpson
Executive Assistant



Anastasiya Lyashchenko
Human Resources



Angelyn Tan
Finance



Neil Easton
Health, Safety,
Environment



Nicolas Barrault
Quality



Clare Swankie
Legal



Angel Sanchez
Digital Technology



James Crawford
Marketing & Strategy

Our capability at a glance

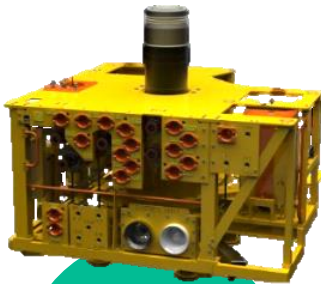
3,600+ Employees

472 FSE's

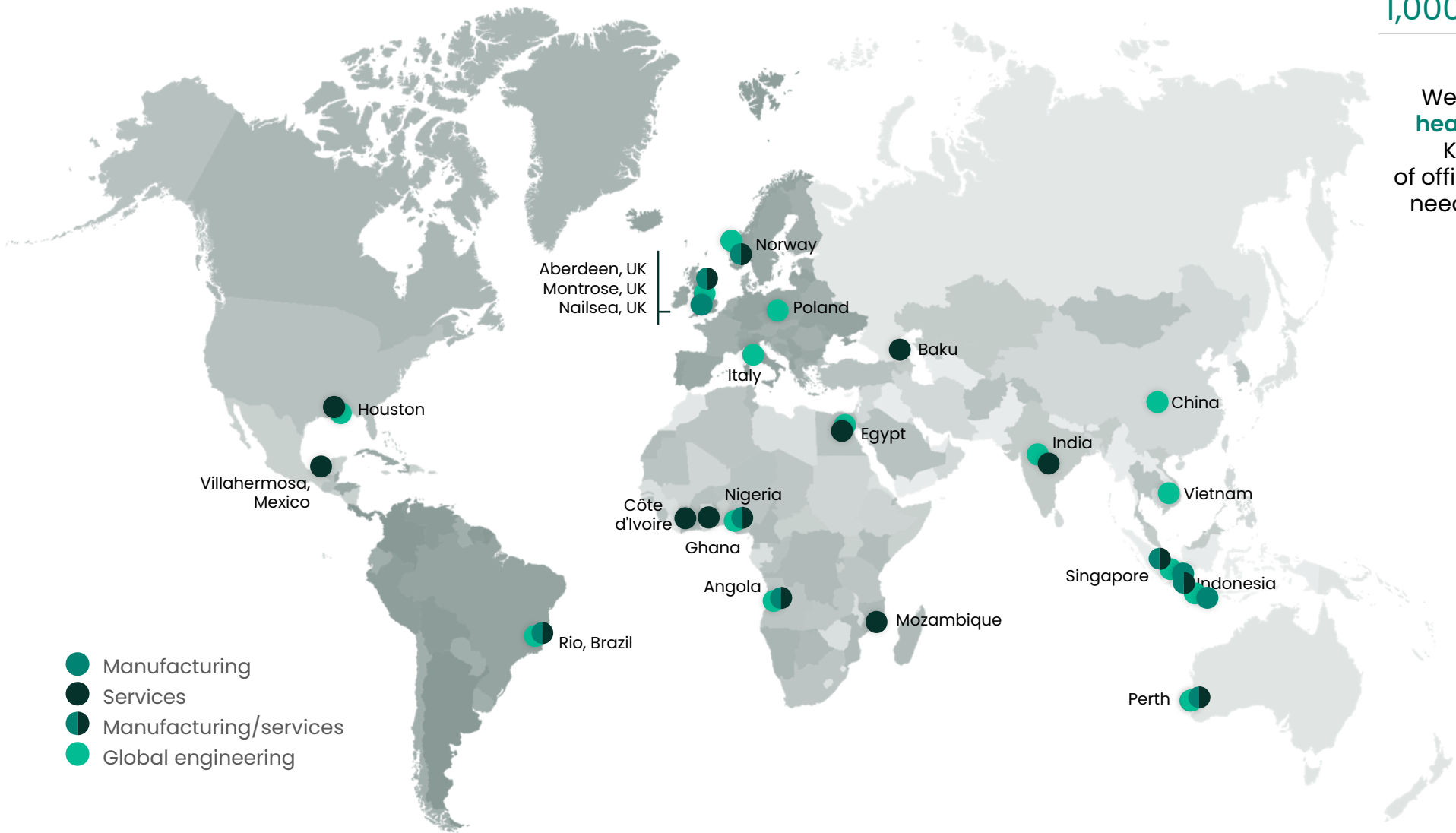
1,000 Eng capability

8,000 Rental assets

We serve our customers from our **headquarters in Aberdeen, United Kingdom** and have a network of offices across the world to meet the needs of our global customer base.

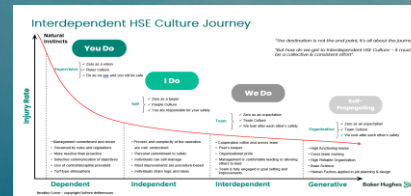


Global:
1,434
XTs installed
base



Achieving a perfect HSE day

no injuries — no damage to environment — no motor vehicle events



MANAGING OUR RISK

Pressure safety

- Design for Safety—equipment designed with safety of internal & external customers in mind
- Robust training at all levels of org—Leadership, Engineering, Master Testers, Operators, Field Engineers
- Pressure Safety compliance through robust audit & self-verification activities

Lifting safety

- Holistic view of safe lift from cradle to grave approach
- Safe design built into all lifting and lifted equipment
- Global Lifting Committee responsible for setting strategy & governance

ADVANCING OUR CULTURE

Back2Basics

- Program designed to strengthen foundations of our HSE culture—creating a platform to build from
- In-depth & actionable quarterly focus areas

Embedding human performance

- Utilizing proven techniques to pro-actively learn from normal work and identify potential events before they happen

Developing the skillsets

- Enhancing the awareness and understanding of leaders and their role as an influencer in HSE through series of ILT & WBT sessions

ACHIEVING OUR OBJECTIVES

Objectives targeting the organization

- Leadership Engagements > 25% with field personnel
- Pressure & Lifting Safety Council Meetings—held monthly for each team
- Corrective Actions & Compliance Tasks on-time closure

Objectives targeting the tasks

- Learning teams held—identification of gaps and challenges in tasks
- Compliance verifications—Quarterly Green Boxes® for risk management

Objectives targeting the individual

- HSE Training compliance
- Verification of SSEs 6-month mentorship
- HSE Observations—monthly participation

What do we do?

Subsea projects and services

SUBSEA PRODUCTION SYSTEMS

- Front end engineering studies
- Aptara™ Totex-lite subsea system
- Subsea trees
- Subsea production control systems
- Subsea manifolds and pipeline products
- Subsea distribution systems
- Subsea electric solutions
- Installation and commissioning
- Well monitoring solutions
- Subsea power and processing



SUBSEA SERVICES

Asset integrity management:

- Maintenance
- Repairs and refurbishment
- Upgrades

Subsea well access systems:

- Open water Completion Workover Riser (CWOR)
- Installation & Workover Control System (IWOCS)
- Light Well Intervention (LWI)
- Surface Test Tree (STT)
- Simplified Landing String (SLS)



WELLHEAD & CASING SOLUTIONS

Subsea wellheads:

- MS-700 solution
- MS-800 solution
- Aptara™ SFX wellhead solution

Premium connectors & casing:

- RL-4 family
- RL-GT
- Ultimax GT



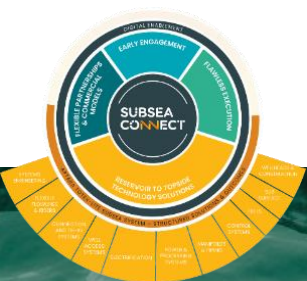
APTARA™

SUBSEA CONNECT™

engageSubsea™

CONNECTING THE ENTIRE SUBSEA DEVELOPMENT PROCESS

Horizontally through life of field from concept to decommissioning



Vertically by developing technologies and services that radically improve economic outcomes and maximise recovery

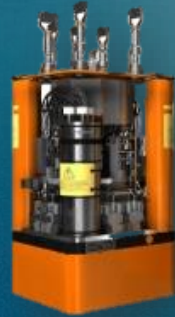
Subsea Production Systems

Integrates seamlessly to deliver system solutions



SUBSEA TREE SYSTEMS

- Structured configured to order vertical and horizontal well systems for depths up to 3,000m.
- Modular configurations allowing faster split location build and test activities.
- Aptara™ Well Systems:
 - Aptara-C (vertical)
 - Aptara-L (vertical)
 - Aptara-H (horizontal)



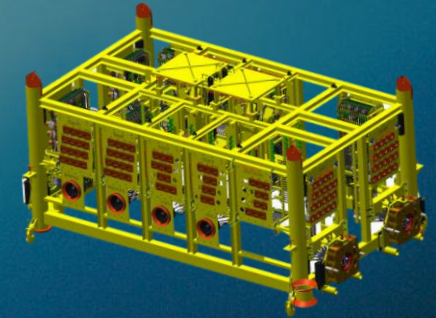
PRODUCTION CONTROL SYSTEMS

- Topside & Subsea Controls
- SemStar5 Electronics
- Modular and scalable high-reliability Mod-Pod systems
- Plug'n Play architecture, backwards compatible
- Compact and versatile design
- Dual redundancy
- Multiplexed electro-hydraulic system



MANIFOLD & PIPELINE SYSTEMS

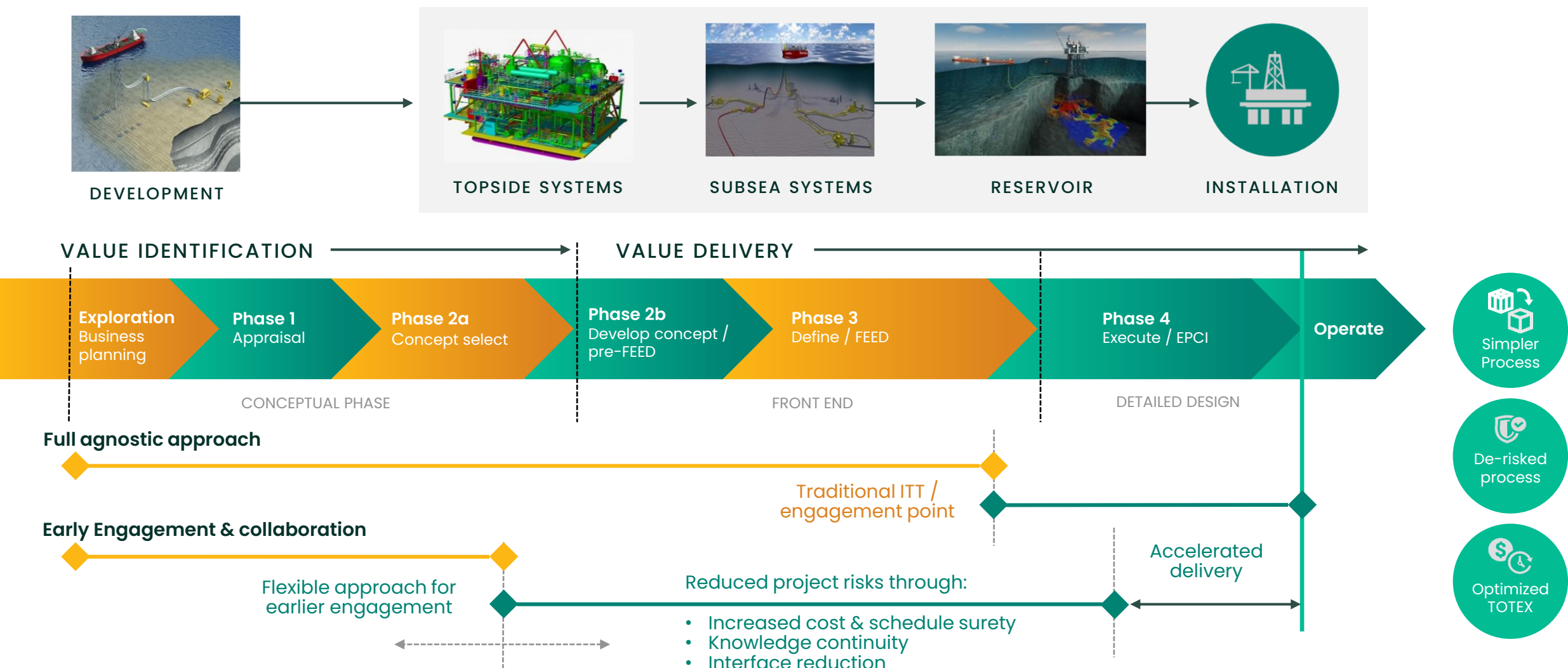
- Aptara™ Modular Compact Manifold
- Structured Vertical Cluster and Horizontal Cluster Manifold Systems
- Cluster Manifolds
- Template Manifolds
- Shallow-water Multi Flowbase
- Pipeline Products & Solutions (PLETs, PLEMs, HIPPS, PLR etc.)



SUBSEA DISTRIBUTION & CONNECTION SYSTEMS

- Aptara™ FLX360 Multi-Quick Connection System (MQC)
- Aptara™ Horizontal Clamp Connection System (HCCS-L)
- Subsea Distribution Units
- Umbilical Termination Assemblies
- Connections systems and multi-bore hub connections (horizontal and vertical)

SP&S front-end systems engineering

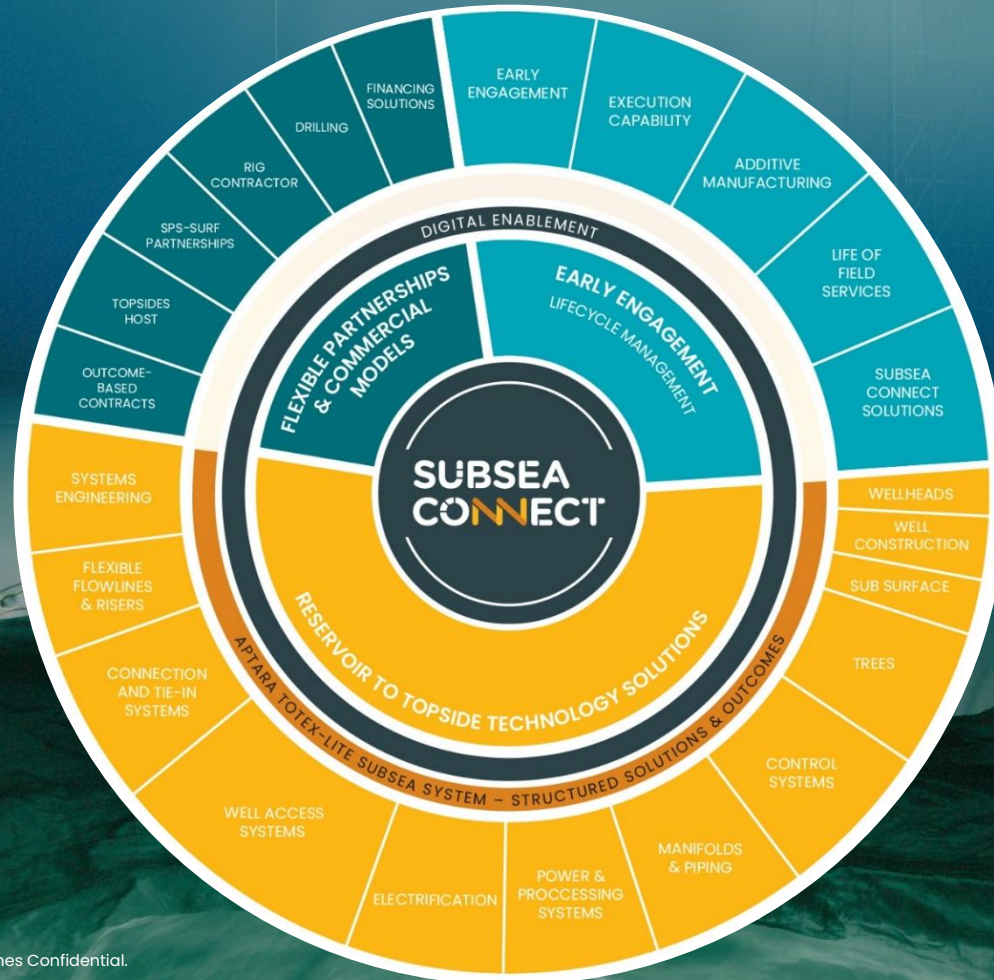


Subsea Connect

Subsea Connect is the integrated digital solution operators need to address life-of-field challenges and reduce the cost of an entire project—not just the subsea scope—by an average of up to 30%.

Our proven track record with one of the industry's largest installed bases and comprehensive set of knowledge, technology, capacity and capability delivers three specific outcomes:

- Accelerated time to first production
- Reduced total cost of ownership (TOTEX)
- Maximized recovery over the life of the field



The six building blocks of your story

We partner with you at every step to:

- 1 Accelerate production
- 2 Enhance recovery
- 3 Manage emissions
- 4 Reduce lifetime costs
- 5 Digitally optimise
- 6 Reduce risk

Aptara™ TOTEX-Lite subsea systems

Innovative life-of-field approach

Our next-generation technology is smarter, simpler, and more efficient. It is designed to work for you and ensure your subsea system is easier and more economic to install, that it operates smoothly, and is flexible enough to evolve over the life of your field.

Our Aptara™ family of products combines an innovative approach with industry-first patented technologies to deliver subsea systems that have shorter lead times and lower initial CAPEX as well as OPEX savings over the life of your field—making it a TOTEX-lite family. We have taken a radically different life-of-field approach to create a suite of products that is lightweight, compact, and optimized to reduce total cost of ownership (TCO). These individual products are the building blocks of our Aptara™ subsea system.

The main products in the Aptara™ family of TOTEX-lite products are:

- Aptara™ Trees (Vertical Trees –C & –L, Horizontal)
- Aptara™ Manifolds
- Aptara™ Pump
- Aptara™ Flexibles
- Aptara™ Wellheads
- Aptara™ Connectors
- Aptara™ Pig Launcher



SP&S and SURF contractor collaboration

Creating **value** for customers with the **delivery of integrated projects** by leveraging on its **existing strategic partnerships** with sector leading **subsea construction companies**







Flexibility, versatility, and predictability

Expertly managed interfaces and risk mitigation

Best-in-class execution of complex subsea projects

Streamlined project formation and ongoing management activities

	Ichthys 1 & 2	Australia	Joint URF and SPS EPCI solution comprising a new subsea well gathering system tied back to the existing central processing facility and in-fill URF EPCI scope involving the development of new subsea wells tied-in to the existing gathering systems.
	Tortue	Mauritania & Senegal	Major gas project located on the maritime border of Mauritania and Senegal. EPCI for SURF/SPS. Four subsea wells, FPSO.
	Balder Future	North Sea	16 wells drilled. The new wells will be tied back to a re-furbished Jotun A FPSO located north of the Balder field. EPCI contract.
	98/2	India	FPSO and CPP development in 300m to 1,200m water depths. Major 34 well oil and gas development. Complex subsea project with demanding delivery timeframe.



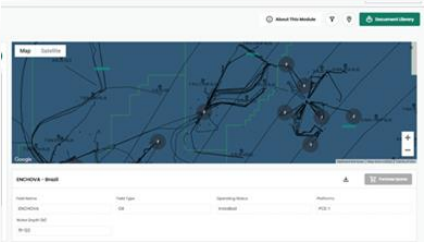
engageSubsea™

The digital platform for subsea activities

Digital twin

- Installed equipment visibility
- Document management
- Performance benchmarking
- Aid planning toolkit & 3D Viz

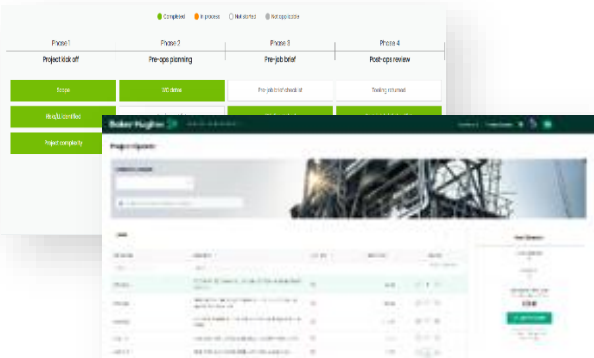
- ✓ Reduce OPEX through improved maintenance planning
- ✓ Clarity on equipment condition



Live job and process tracking

- Live job status tracking
- Inventory management
- Operational readiness and forecast
- Inspection and repair

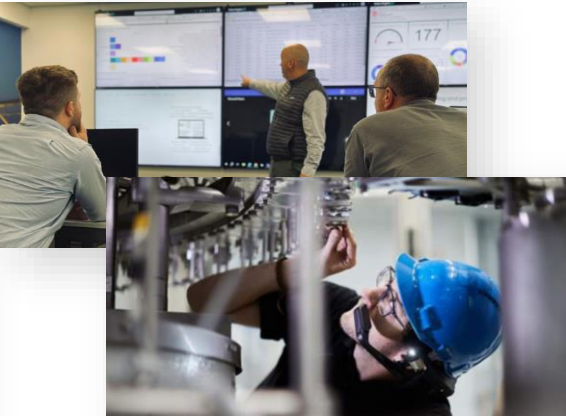
- ✓ Improve speed and coordination
- ✓ Ensure adherence to standards
- ✓ Increase productivity & equipment efficiency



Remote operations

- Live customer care portal
- 24/7 monitoring & technical support
- Active and passive integrity monitoring
- Augmented reality capabilities
- Robotics for offshore operations

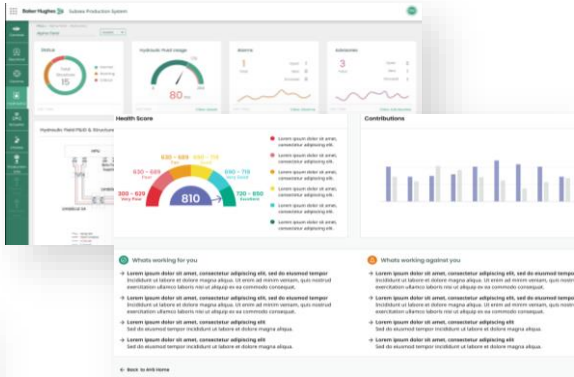
- ✓ Enhance customer experience
- ✓ Faster time to repair
- ✓ Reduce risk



Analysis, scoring and advisory

- Obsolescence management
- Asset Health score
- Advisory services
- Energy management

- ✓ Engineering and performance optimization
- ✓ Prevent unplanned downtime
- ✓ Asset optimization





























Passive

Active

Proactive

Trusted to deliver—our global subsea EPC track record

	2023	Balder Ph5	Norway 128 msw	7 trees, Wellheads, Control systems, Flowmeters and Distributions
	2023	Ndungu FF	Angola 1,700 msw	11 Trees, 4 Manifolds, Controls, Connection & Distribution Systems, Tooling
	2023	Baleine Ph2	Ivory Coast 1,200 msw	8 Trees, 3 Manifolds, Controls, Connection Systems
	2023	Agogo FF	Angola 1,500 msw	23 Trees, 5 Manifolds Controls, Topsides, Well Access, IWOCs, Connection & Distribution Systems, Tooling
	2023	SNEPCo Bonga	Nigeria 1,200 msw	First APTARA™ Vertical XT installed 
	2022	Lingshui 25-1	China 1,000 msw	12 Trees w/ Controls, Tooling suite, 4 Manifolds, 3 HIPPS, Topsides, Umbilical's, Wellheads
	2022	Baleine Ph1	Ivory Coast 1,300 msw	3 Trees, 4 SCM's, 1 SDU, Topsides, 12 distribution systems, Services and tooling with Rental Landing String and IWOCs. Contract award → First Gas - 19 months!
	2021	Ndungu Ph1	Angola 1,700 msw	2 Trees, Manifolds, Controls, Topsides, Connections, Distributions
	2020	Agogo EP	Angola 1,500 msw	4 Trees, Manifolds, Controls, Topsides, Connections, Distributions
	2019	Ichthys Phase 2	Australia 340 msw	SPS-SURF: 11 Trees, 150+ Connection Systems, Flexibles & Risers, Controls, Umbilical's & Topsides
	2019	Gorgon Stage 2	Australia 1,300 msw	13 Trees, 2 Manifolds, Controls, Connection Systems, Topsides, UTA, Tooling
	2019	Tortue	Mauritania-Senegal 2,850 msw	Integrated SPS-SURF: FEED, 5 Trees, 10 6-slot Manifolds, PLEM, SDUs, Controls.
	2019	Balder Future	Norway 125 msw	SPS-SURF: 16 Trees, 11 Manifolds Controls, Connection Systems, Topsides

	2018	Buzzard	UK 100 msw	7 XT's & Control Systems- Outcome based consortium model
	2018	98/2	India 1300m msw	SPS-SURF: 26 Trees, 15 Manifolds, Connections, Jumpers, Umbilical's Contract award → First Gas - 19 months!
	2017	Coral South	Mozambique 2,000 msw	6 Trees, 3 Manifolds, Controls, Controls, CWOR, IWOCs
	2017	Zohr Ph2	Egypt 1,500 msw	10 Trees, 7 Manifolds, Controls and Distribution Equipment, Wellheads, Services & Tooling
	2015	OCTP	Ghana 1,200 msw	21 Trees, 8 A-Flets, 4 Flets Controls, IWOCs, Jumpers, Connections & Tooling, 12 Manifolds— Completed 3m ahead of schedule!
	2015	Vashishta	India 700 msw	3 Trees, Well head systems, Connections, UTA/UTDA/SDU, Controls & MCS, Services
	2013	Snohvit	Norway 330 msw	5 Manifold (4 slots + 4CO2 prod./inj.), 12 Trees, Controls, Connections & Tooling, Umbilical's
	2012	15/06 West Hub	Angola 1,400 msw	11? Manifolds (3 Prod./ 3 Inj.), 13 Trees (7 Prod./6 Inj.), 5 SDU, Controls, Jumpers, Connections & Tooling
	2006-2012	Kizomba C & Satellites	Angola 760 msw	84 Trees, Manifolds Controls, Jumpers, Connections & Tooling
	2011	Ichthys Phase 1	Australia 340 msw	SPS-SURF: 11 Manifolds, 22 Trees, 6 SDU, Controls, Jumpers, Connections & Tooling - Jon
	2009	Lianzi	Angola 800 msw	4 x Prod. Trees, 3 x WI Trees, Conns & Flex Jumpers, IWOCs
	2008	Gorgon Jansz	Australia 1,300 msw	10 Manifolds, 3 CDU/UMCA, 36 PLETs, 20 Trees, Controls, Jumpers, Connections & Tooling

Our commitment to tree deliveries and North Sea customers











782 subsea trees supplied to the North Sea over 40 years!

396	295	23	51	17
Vertical Medium Water	Horizontal Medium Water	Vertical Shallow Water	Conv. on Mudline	Horiz. on Mudline

Various Frame Agreements and Master Service Agreements

Current global XT delivery highlights:

NEO Finlaggen (EUROPE) 1-off MHXT—10 ½ Months
 Burullus (MENATI) Ph X—3-off DHXTs—13 months
 Burullus (MENATI) PH XI—3-off DHXTs—14 months
 Petrobel Zohr Infill (MENATI)—2-off DHXTs—14 months

	Shell (UK, Netherlands, Enterprise)	33 years 1990–2023	112 XTs	35–350 msw	MVXTs	FA
	CNOOC (ex Nexen & Amerada Hess)	28 years 1990–2018	92 XTs	70–200msw	MHXT/MVXT	
	BP (incl. AkerBP)	28 years 1994–2022	32 XTs	88–1,006 msw	MHXT/MVXT /CTOM	
	Marathon Oil	26 years 1991–2017	13 XTs	90–150 msw	MHXT/MVXT	
	Equinor	26 years 1987–2013	52 XTs	76–350 msw	MHXT/MVXT	
	Repsol	22 years 1997–2019	24 XTs	70–300 msw	MHXT	FA
	Apache	18 years 2004–2022	27 XTs	120–200 msw	MHXT	
	Maersk Oil North Sea	8 years 2005–2013	46 XTs	118–144 msw	MHXT	
	Ithaca Energy	8 years 2011–2019	8 XTs	88–150 msw	MHXT/SVXT	
	Serica Energy	6 years 2019–2023	6 XTs	150 msw	MHXT/MVXT	FA

Subsea wellheads, premium connectors and casings



Fit for all water depths, the Baker Hughes lineup is building from foundational strengths in the Aptara™ generation

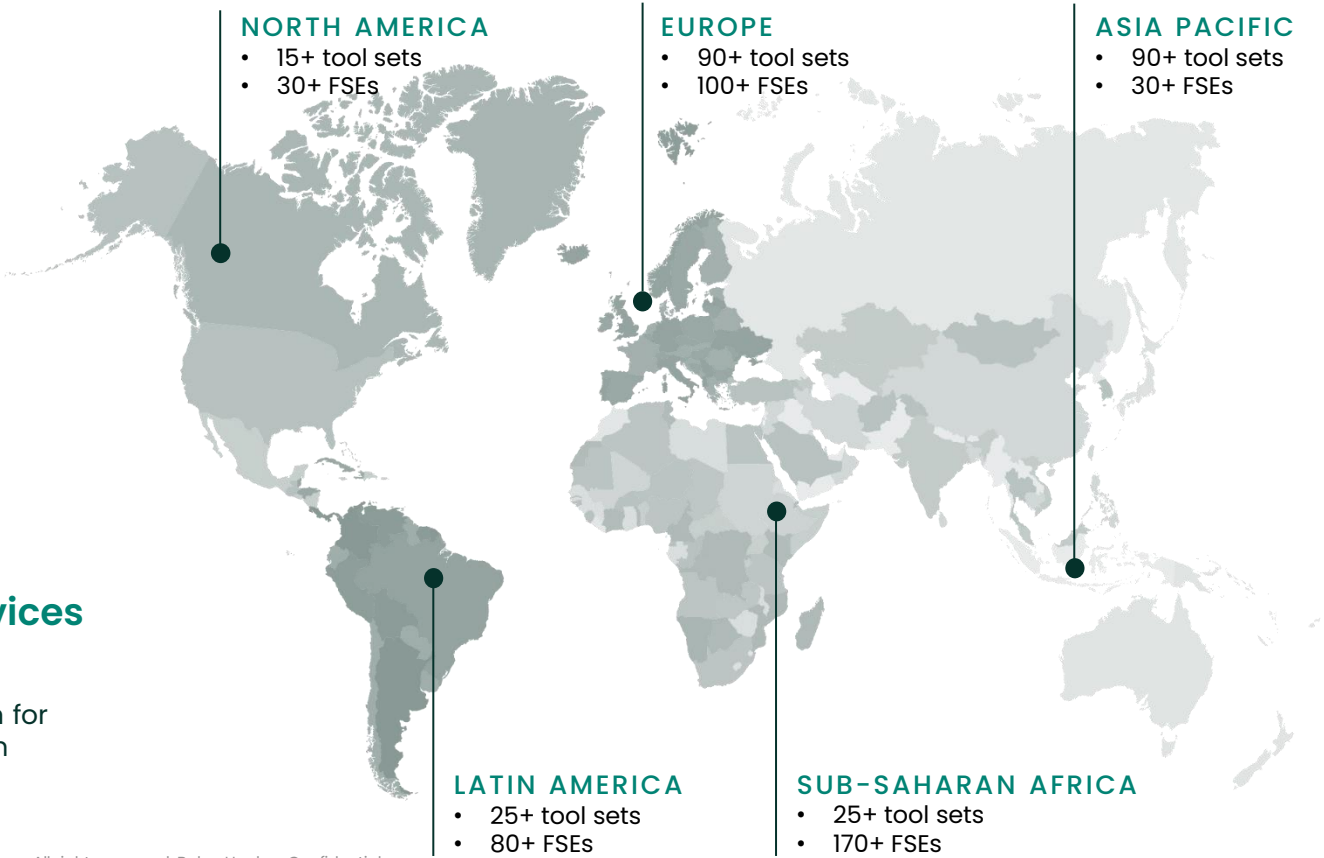
Our global wellhead and casing track record

Our team 458+ Field Services Engineers	Our tooling fleet 7.5k+ Subsea individual assets	Services sites 12+ Across the globe
--	--	---

Industry-leading
7,000
Subsea wellhead installations

Delivering on productivity
1 m
Premium connector and casing installations

Best-in-class services
33 days
Saved in well construction for HP/HT offshore exploration



ENGINEERING ANALYSIS
Our engineering capability also includes fatigue and riser analysis in the equipment as a unique capability in the industry



FIELD SERVICES
Highly trained, certified, and experienced Field Service engineers (FSEs) with 24/7 technical support where and when you need it.

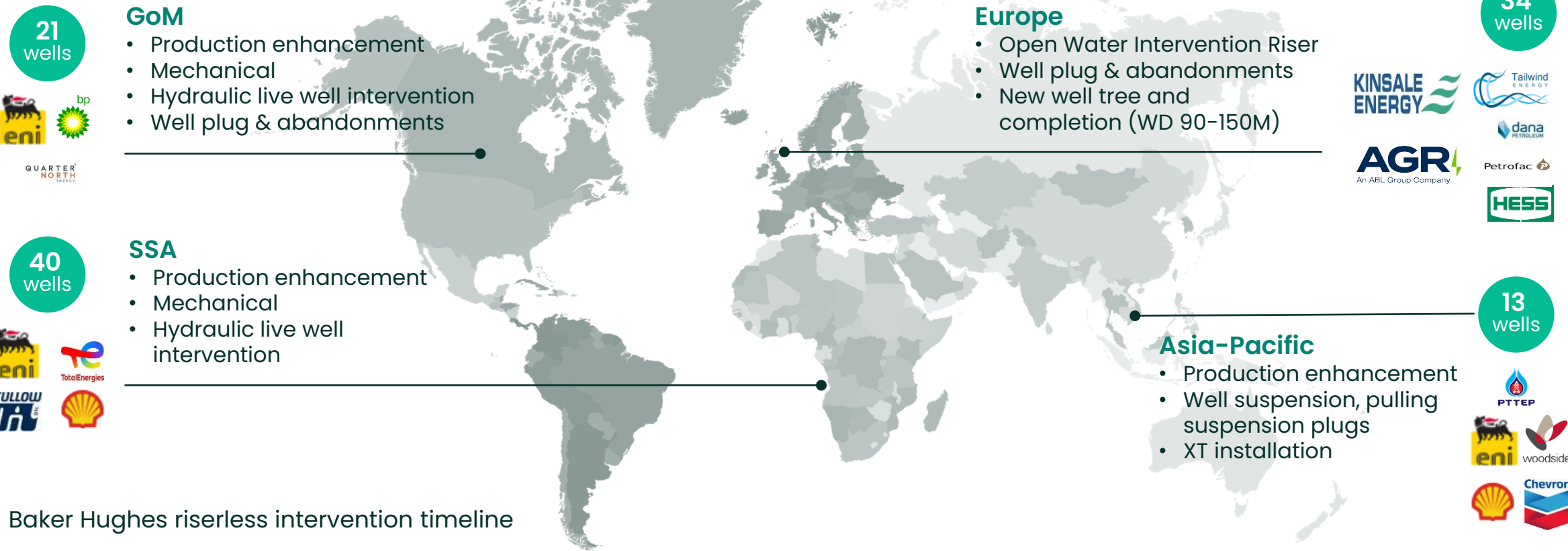


RENTAL TOOLING
Our rental fleet includes 200+ sets of wellhead and tree installation, work over and commissioning tooling, ROV, shallow, medium and deep water IWOCs systems, and Light well intervention stacks.

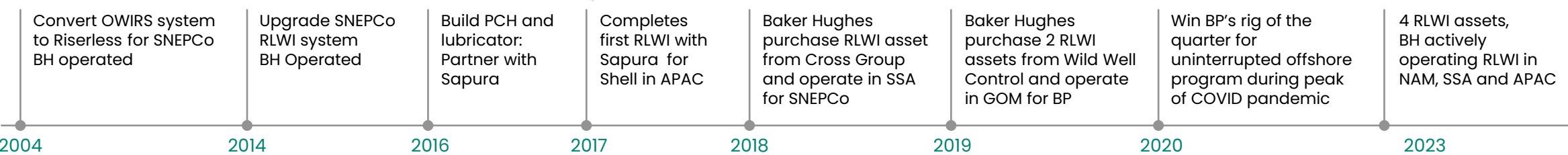


TRAINING
We have a long history of manufacturing and supplying equipment and supporting operations throughout the project life cycle. The OEM experience ensures training programs are technically accurate, comprehensive and a key driver in the delivery of EHS, financial, and operational performance to you.

Our global LWI and rig well intervention track-record



Baker Hughes riserless intervention timeline



Subsea services portfolio

Baker Hughes services offerings

Subsea installation and commissioning



We have world-class subsea life-of-field equipment and services to get your projects online efficiently by leveraging decades of know-how, unrivalled tooling packages and flexible partnerships.

Asset integrity management



We share our field performance with customers from start to finish, ensuring that your field stays relevant, online, and safe all while reducing TOTEX and risk.

Services linked to Baker Hughes installed base

Subsea Connect intervention solutions



We improve our customer's recovery with the highest certainty at the lowest economic lift cost.

Decommissioning



Well plug and abandonment. Exploration WHD removal.

Services agnostic to XT OEM



Innovative solutions to maximize your field's potential



Global consistency at all levels of customer engagement



Specific product bios, case studies, benefits, differentiators, data sheets, and value props



Interlinkage at all levels of structure: Product > Service > Solution > Value



Centralized repository and clear navigation



Targeted comms to specific decision makers

Clear structure. Clear message.

Light well intervention

Enabling slickline, e-line, and coiled tubing operations

7.0 LWI system



7.1 LWI system



7.2 LWI system



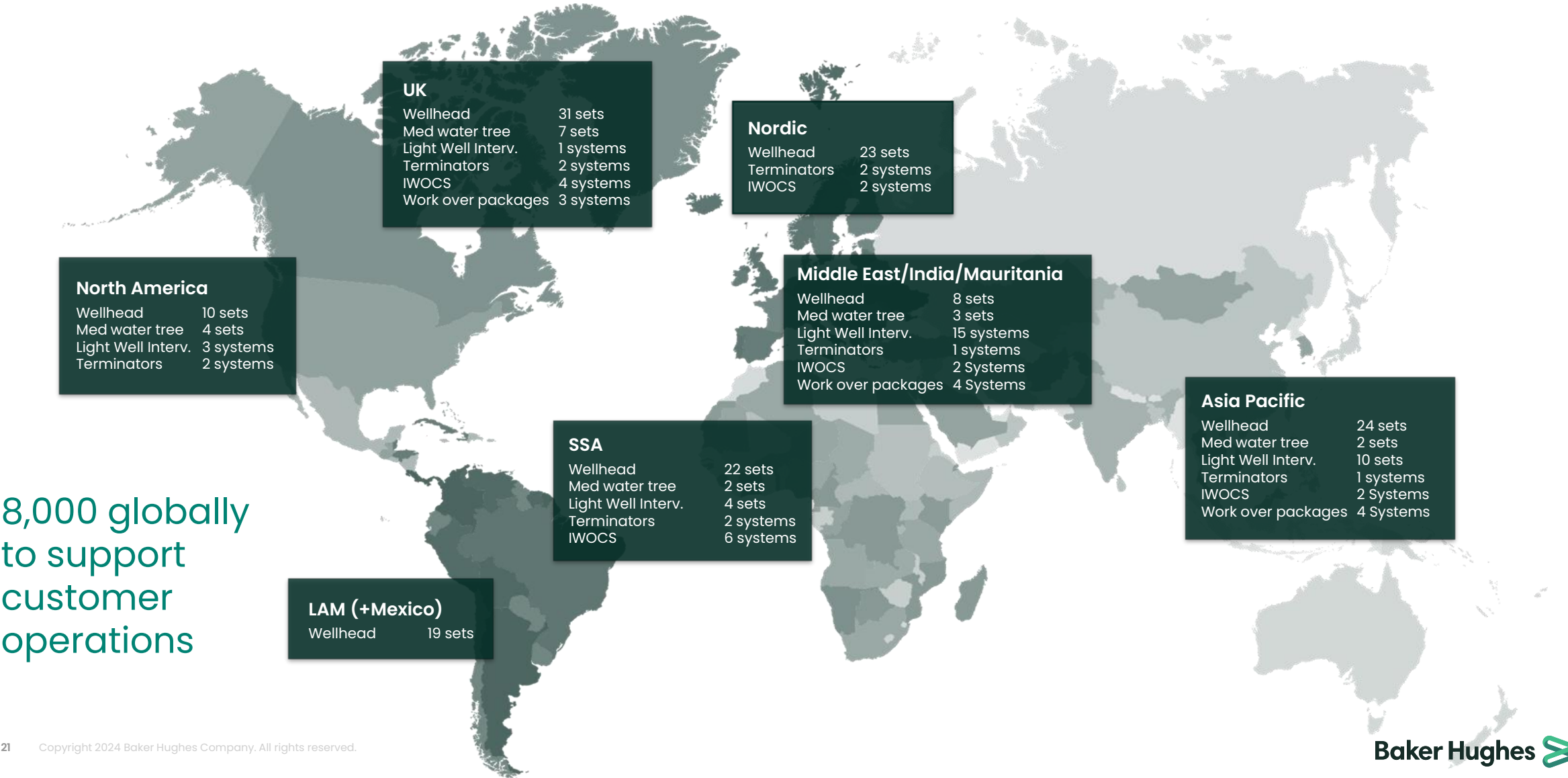
4.1 LWI system



30% of the global large bore fleet

Our global rental assets

Our global rental team monitors customer requirements and mobilizes tools between business sectors. Approximately 800 assets are redistributed each year to where the client needs them.

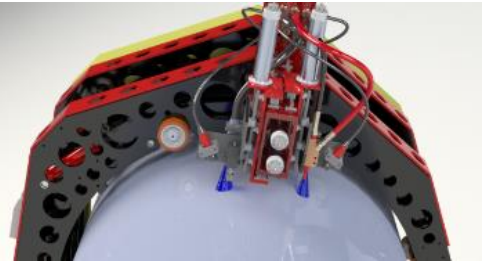


8,000 globally
to support
customer
operations

Technology spotlight



Global technology growth hub



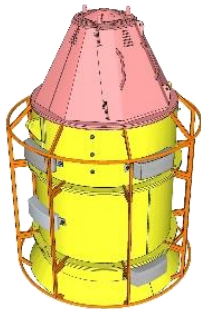
Robotic inspection and cleaning

- Partnership
- Overview of technology
- Benefits
- Offshore case studies



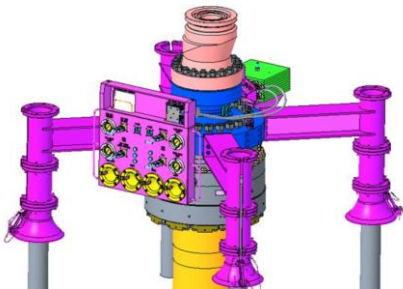
Renewable subsea power

- Commercial structure
- Overview of technology
- Benefits and applications



Remote well monitoring

- Commercial structure
- Overview of technology
- Benefits and applications
- Case studies



Agnostic tooling

- Commercial structure
- Overview of technology
- Benefits and applications
- Case studies

An innovative incubator
accelerating next generation
disruptive solutions & technologies
towards decarbonization and
energy to an infinite level



LORNA YUILL
Growth Hub Leader
Nailsea, UK



JOEL FERREIRA
Growth Hub
Innovation Lead
Nailsea, UK



MARCIN NAROZANSKI
Engineering Manager
Warsaw, Poland



KARIN BOL
Growth Hub Strategic
Operations Leader
The Hague, Netherlands



LUIZ FELIPE ROZA
Portfolio
Development
Manager
Rio de Janeiro, Brazil



ANA SILVA
Portfolio
Development
Manager
Luanda, Angola

Universal controls—a foundation for subsea digitization

The next generation subsea control system with features to harness the power of data and enable increased autonomous control



Unrivalled reliability and availability

- Extensively HALT-tested hardware
- Greater use of commercial off-the-shelf hardware
- Open network topologies and MDIS integration
- Self-healing networks
- API17F Rev 5 compliant



Automation enablement

- Technology to bridge the 'leap of faith' from topside control to subsea-based automation & optimization
- Optimized automation to meet 'current' and 'desired' subsea states with greater interaction between SEMs allowing detection and reporting of abnormalities



Analytics

- Edge computing at the SEM to enable greater subsea analytics
- Diagnostics, prognostics, and health and integrity monitoring moved to the subsea assets
- A platform for machine-learning process control and production optimization



Safety and cybersecurity

- Subsea capability to perform SIL rated shutdown sequences from topside commands or subsea event
- Cyber assurance that underpins supportable, safe and secure system operation
- IEC 62443 / ISASecure

Electrification and all-electric systems

Impactful integrated electric power-supply and control systems, enabling a more resilient, efficient, sustainable future

All-electric subsea production systems

Smaller, lighter, lower cost and cleaner hydrocarbon production and CCUS injection technologies.

Umbilical-free control systems

Low-power, local low carbon electrical power systems, enabling remote electric tie back power, and remote communications.

High-power electrification connections

HVAC Marine Electrical Connectors (MECON). Dry and wet mate, facilitating connection of Mid-Point reactors, subsea substations and transformers for off-shore hydrocarbon product asset electrification, and floating wind power export to shore.

New energy and low carbon

Increasing energy access, decreasing emissions, clean electrification power, distributed subsea emissions via electrification.

Committed to decarbonizing offshore

We take energy forward.

Making it safer, cleaner, and more efficient for people and the planet.

SUBSEA CONNECT

Digitalizing subsea operations to create the oilfield of tomorrow

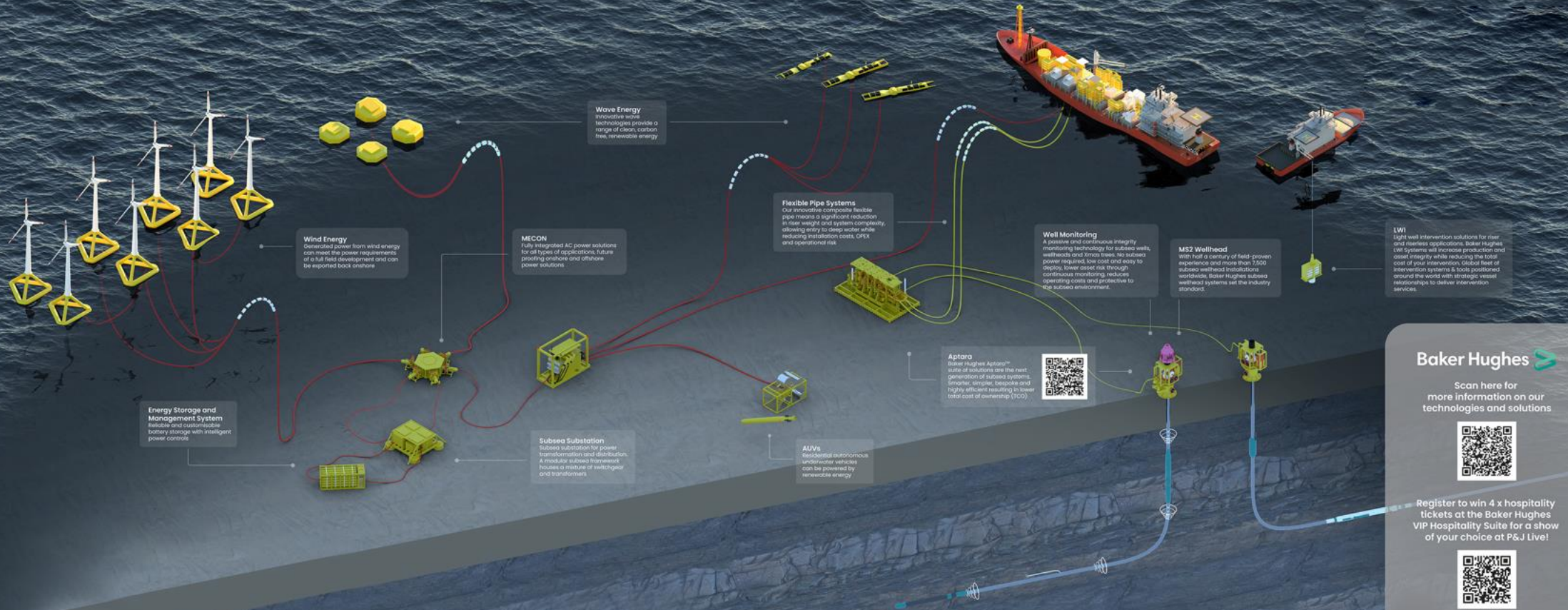
Subsea Connect is the integrated digital solution operators need to address life-of-field challenges and reduce the cost of an entire project – not just the subsea scope – by an average of up to 30%.



Only Baker Hughes can connect your entire subsea development process



bakerhughes.com/subsea/subsea-connect



Baker Hughes

Scan here for more information on our technologies and solutions



Register to win 4 x hospitality tickets at the Baker Hughes VIP Hospitality Suite for a show of your choice at P&J Live!



Baker Hughes 