THINKING DIFFERENTLY ABOUT LATE LIFE ASSET MANAGEMENT AND DECOMMISSIONING
Petrofac is an international service provider to the oil and gas production and processing industry. More than 18,000 Petrofac people support our operations in over 29 countries worldwide.

We provide a complete spectrum of services across the life cycle of oil and gas assets that help our clients unlock value: from project start-up to late life asset management (LLAM), abandonment, decommissioning and everything in between. Whether projects are onshore or offshore, greenfield or brownfield, we have the skills, capabilities and experience to drive efficient and value-focused outcomes.

Our Engineering & Production Services business has two decades’ of experience supporting our worldwide service operations and a track record for safe delivery.

As the innovator of the outsourced Duty Holder model, we hold a significant portfolio of contracts in the UKCS and internationally. Our Service Operator model extends this capability further, combining Duty Holder (including Installation Operator) with wells and pipeline operator responsibilities.

Through this capability we can help our clients to maximise economic recovery and execute effective decommissioning.
Our approach

We offer an ‘operations’ mindset and a proven reputation for creating tailored asset-specific strategies that are fit-for-purpose and aligned with our clients’ strategic aims.

Our project-led approach to delivery, culture and appetite for challenging the norm, means we can achieve safe and efficient outcomes that encompass the requisite priorities of cost, schedule, safety, reputation and integration.

As Duty Holder and Service Operator from operations into decommissioning, we maintain full capability for health, safety and environmental protection. Our competence spans occupational, industrial and process safety relevant to O&M and E&C through to regulatory compliance and we maintain positive relationships with regulatory bodies.

Our technical safety specialists will prepare safety cases and undertake risk assessments and studies across the life of an asset, including decommissioning. Our environmental specialists are responsible for Oil Pollution Emergency Plans and we can also manage specialist scopes such as decommissioning programmes, comparative assessment, environmental impact assessment, risk analysis, and waste management duty of care.

Mature basins require new service sets and approaches; as the project phases evolve, so too do the business drivers. We strive to maximise economic recovery, extend asset life and set in place the enablers for effective decommissioning. We believe this is a two-step process, from LLAM into eventual decommissioning.

SERVICE PACKAGES

DECOMMISSIONING
Duty Holder, plug and abandonment (P&A) completion, engineering, preparation and removal works.

LATE LIFE ASSET MANAGEMENT
Duty Holder, OPEX optimisation, CAPEX reduction, engineering, asset integrity and preparatory works for decommissioning.

TRANSITION
Contract award, scope split, transition activity leading into late life implementation.
Late Life Asset Management services

Fit-for-purpose operations and maintenance and engineering and construction solutions are key during the LLAM phase. Our solutions are designed to reduce cost, enhance production, optimise OPEX and CAPEX and maintain safe operations whilst preparing for decommissioning.

We have a significant track record in delivering LLAM services for our clients; extending asset life improves economic return, whilst ensuring asset integrity enables the operator to achieve more cost effective decommissioning outcomes. Our LLAM model can include Duty Holder services, or other combinations of services, designed to align with our clients’ budgetary requirements. We can also manage early decommissioning and well plugging and abandonment during this phase.

Decommissioning services

Early engagement allows clients to optimise the planning and execution of decommissioning services and the transition of risk between operator and contractor. It also offers the opportunity for open dialogue around roles and responsibilities. Once an asset moves to the decommissioning phase, there must also be a shift in mindset towards a ‘project-led’ culture.

We are flexible in our approach and offer engineering and construction, operations and management, procurement and project management services to support full or partial decommissioning. This can be provided with, or without, our Duty Holder in decommissioning service.

Early intervention is key to optimising the planning and execution of decommissioning services and we have in-house software that can drive effective concept selection workshops.
Our range of asset-specific solutions are designed to be flexible so that we can align them with our clients' objectives. Our capability extends across on and offshore operations and assets (fixed, floating and subsea). Our team of decommissioning specialists can provide solutions to specific problems by delivering discrete services or a package of services, such as an integrated delivery model.

**Flexible solutions**

- **Discrete examples:**
  - Well Engineering (P&A)
  - Decommissioning studies and estimates

- **Bundled example:**
  - P&A and cleaning/flushing

- **Integrated examples:**
  - Duty Holder in decommissioning
  - Integrated P&A and decommissioning projects

**Total decommissioning solutions** provided by Petrofac and selected partners

Our range of asset-specific solutions are designed to be flexible so that we can align them with our clients' objectives. Our capability extends across on and offshore operations and assets (fixed, floating and subsea). Our team of decommissioning specialists can provide solutions to specific problems by delivering discrete services or a package of services, such as an integrated delivery model.

**Discrete examples:**
- Well Engineering (P&A)
- Decommissioning studies and estimates

**Bundled example:**
- P&A and cleaning/flushing

**Integrated examples:**
- Duty Holder in decommissioning
- Integrated P&A and decommissioning projects

**Total decommissioning solutions** provided by Petrofac and selected partners

**Our range of asset-specific solutions are designed to be flexible so that we can align them with our clients’ objectives. Our capability extends across on and offshore operations and assets (fixed, floating and subsea). Our team of decommissioning specialists can provide solutions to specific problems by delivering discrete services or a package of services, such as an integrated delivery model.**

**Discrete examples:**
- Well Engineering (P&A)
- Decommissioning studies and estimates

**Bundled example:**
- P&A and cleaning/flushing

**Integrated examples:**
- Duty Holder in decommissioning
- Integrated P&A and decommissioning projects

**Total decommissioning solutions** provided by Petrofac and selected partners
Our services

We have an appetite for innovation and developing new ways of working and we are looking to bring new solutions to the decommissioning market with selected partners. We are developing ways to challenge traditional methodologies, improve schedule and reduce cost. Our strength lies in our asset-specific capabilities, operations-led approach and combined Group capabilities.

DUTY HOLDER IN DECOMMISSIONING
Designed for non-producing assets, we can tailor our Duty Holder model to help clients reduce OPEX and ABEX through manpower optimisation, maintenance simplification and the use of bespoke shared services and control and management systems.

LLAM DUTY HOLDER
This model is focused on helping our clients to push out the cessation of production date and extend field life. We work with operators to eliminate waste and inefficiencies in order to safely increase production and uptime. By engaging with us at the earliest stage, we can also use our asset knowledge to extend the life of the facilities and provide a range of early-interventions and cost-effective measures to reduce the eventual cost of removal.

We can take a ‘park and defer’ approach, applying cost-effective de-manning and remote intervention services as well as safety case management for late life assets, where a decommissioning strategy has still to be determined.

ENGINEERING
From concept and feasibility studies to enhanced production methodologies, cost estimating and options analysis, our capability is extensive. It includes operations, engineering, (de)construction and removal considerations, structural and marine assurance, lifting analysis, and technical safety spanning topsides, jackets, pipelines, subsea pipelines and terminals. Our solutions are fully scalable, enhanced by our offshore construction experience. Decommissioning cost estimates are prepared using an in-house software tool that allows for easy comparison of competing asset retirement technologies.

OPTIMISED MAINTENANCE
Using a structured methodology for the assessment of maintenance and inspection activities we can help operators optimise an asset’s workload and workforce during late life. The process engages stakeholders whilst optimising resources. Using our asset management software, BuildME™, we can ensure that safety, environmental and business risks are addressed throughout the asset life cycle by managing maintenance and inspection activities as required. BuildME™ allows for a number of different decommissioning scenarios to be assessed simultaneously.

WELL ENGINEERING
Our well engineering capability comprises a full suite of project management services supporting the life cycle of a well, from feasibility through well construction to plug and abandonment. This capability covers decommissioning cost estimation, studies, detailed design, (de)construction, asset removal and project management.

SUPPLY CHAIN MANAGEMENT
We have strong supply chain management capabilities and an extensive vendor and subcontractor network, this includes heavy lift vessel selection and management, waste and logistical management.

EMERGENCY RESPONSE AND CRISIS MANAGEMENT
We have been supporting clients in the development, implementation and maintenance of best-in-class training and crisis management systems for more than 20 years. Our training services team works closely with clients to determine their requirements, integrating with project teams where necessary. Our services include the preparation of emergency response plans and procedures for dealing with major accident hazards on high-risk sites.
Duty Holder in decommissioning

Duty Holder in decommissioning is the provision of a fit-for-purpose on and offshore organisation and service that can assist and support decommissioning activities.

BP
MILLER, UKCS
Start date: Q3 2016
End date: Ongoing

Scope: Petrofac supports BP on the Miller decommissioning project with the provision of Duty Holder services. This approach enables the client to remain focused on removal activities, whilst Petrofac focuses on safe operations, asset maintenance and integrity throughout preparatory and removal works.

Key Achievements:
• Project specific on and offshore management and delivery teams
• Implementation of fit-for-purpose control of work and management systems
• Optimised maintenance programme, supported by a multi-skilled workforce
• Management and reassessment of the safety case on behalf of operator in line with project stages
• Decommissioning support services which include modifications and assurance activities
• Shared performance measures and project culture

TULLOW
HORNE AND WREN, UKCS
Start date: 2015
End date: 2017

Scope: Petrofac is the long-standing Duty Holder on the Horne and Wren platform. Petrofac’s well engineering and platform Duty Holder teams on contract to Tullow delivered a successful well abandonment and pre-decommissioning project outcome.

Key Achievements:
• Cessation of production and move into decommissioning
• Safety Case Management, Control of Works, offshore supervision, subcontractor and regulator liaison
• Plug and abandonment delivered Summer 2016

ITHACA/PETROFAC
AH001, UKCS
Start date: 2011
End date: 2012

Scope: Quayside decommissioning of the AH001 floating production unit.

Key Achievements:
• Project managed site activities and offshore vendors
• Removal of 3,400 tonnes of topsides and 150 tonnes of asbestos, Naturally Occurring Radioactive Material (NORM) and general waste
• Equipment repair for retention/refurbishment/re-use and/or sale
• No LTIs and no spills to the environment
• On budget and on time
• Having refitted AH001 as floating production facility FPF-1, we are now Duty Holder. It is now stationed in the UKCS to be used as a floating production unit for Ithaca on the Greater Stella Development
We believe it’s not just what we do, it’s what we can do that makes us different. We are committed to working with our clients to think differently about decommissioning solutions:

- Early intervention is key and we have in-house software that can drive interactive concept selection workshops.
- Our breadth of capability means we can support our clients throughout their decommissioning journey: from concept to removal.
- Our conceptual and engineering design capabilities are supported by a range of technical specialists including wells, structural and environment.
- We take an operations and project mind-set to decommissioning.
- We are experts in outsourced asset management services covering LLAM and Duty Holder and are already delivering for a number of clients.
- A proven innovator, we have an appetite for creating new delivery and commercial models in response to market drivers.
- We have a regulatory capability – as a UKCS Service Operator we are already working with the OGA to identify new ways forward in decommissioning.
- Our in-house well engineering capability can support across the life cycle of a well, including plug and abandonment execution.
- As part of the Petrofac Group we have access to valuable data from our offshore construction activities as well as knowledge of heavy lift vessel selection, receiving yards, waste and logistical management.

**THE FUTURE**

We are excited about the opportunity we have to make a difference in the late life and decommissioning phases of the asset life cycle. By building upon our existing skills and track record, leveraging our project management capabilities and commercial flexibility we aim to support our clients effectively across their decommissioning journey. We will continue to develop new partnerships and approaches in this respect as we evolve our integrated services in line with the needs of our clients and the industry.