PD&MS GROUP
an RSK company

OPTIMUS PLUS
Concept & Front End Specialists
a PD&MS group company

SYNERGIE ENVIRON
Decarbonisation & Energy Efficiency Specialists
a PD&MS group company

PDMS-GROUP.COM

Your Trusted Asset Lifecycle Partner

CAPABILITY & EXPERIENCE

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Established in 2002, we have built a strong reputation for the safe delivery of practical, high quality and cost-effective solutions in the energy and industrial sectors onshore and offshore.

As a strategic lifecycle delivery partner and full-scope EPCC contractor, we support operators through each stage of the asset lifecycle with seamless services that are tailored to meet the challenges of complex, asset-intensive environments.

We have an excellent track record delivering a vast range of EPCC work; from simple repair order scopes, modifications and upgrade projects, TAR's and W2W campaigns.

We deliver across all phases of the project, from initial concept development through to installation, commissioning and close out, meaning we can offer an end-to-end and seamless service to our clients.

Our embedded low carbon and renewables expertise and capabilities means we are well placed to support our oil & gas clients on their net zero journeys.

PD&MS – Key Stats

Putting our energy into safe, predictable & sustainable solutions

2002
Founded In 2002


Mid Value Capital Projects, Modification & Upgrade Specialists


Late Life Asset Management & Decommissioning Specialists


Head Office In Aberdeen, Eng. Offices In Glasgow, Baku (Azerbaijan) and Gurugram (India)

RSK
Part of RSK Group – Global Leaders in Environmental and Engineering Solutions

CERTIFIED LR ISO 9001 - ISO 14001 ISO 45001 · UKAS MANAGEMENT SYSTEMS 001
Our Management Systems are Certified By LRQA To ISO 9001:2015, ISO 14001:2015, ISO45001:2018 and ISO/TS29001:2011.

SYNERGIE ENVIRON Decarbonisation & Energy Efficiency Specialists a PD&MS group company
Environmental Consultants


Full Multi-discipline O&M and EPC Capability

650
650 Onshore Engineering and Support Personnel Globally


Sizeable Construction and Commissioning Personnel

Achilles FPAL Verified
FPAL and Sequal Verified.

OPTIMUS PLUS Concept & Front End Specialists a PD&MS group company
Front End/ FEED Specialists


Production Facilities, Drilling Facilities, Onshore Facilities.


Excellent HSE Performance


Global Reach

13m+
13 Million+ Value Adding Onshore and Offshore Exposure-hours have been Liquidated.

GREEN MØDS #lowercarbonsolutions IDENTIFY · QUANTIFY · MODIFY

PD&MS GENES ...it's in our DNA

£140m
£140 Million Turnover (PD&MS)

£2bn
£2 Billion Turnover (RSK)


Energy Industry Specialists with Sector Agnostic Skills and Capabilities

Supporting Operators With Energy Security and Net Zero Ambitions

Transforming How Modifications are Delivered Adding to Decarbonisation, Clean Tech, Low Carbon Expertise.

The Markets We Serve

Providing future-friendly engineering solutions, we are supporting both conventional energy and the energy transition.

OIL AND GAS

Our specialist engineering services support clients through every stage of the asset lifecycle, helping you:

- extend life,
- boost production and
- maximise efficiency,

all while keeping costs under control.

We understand the challenges of operating in mature basins and know how to overcome them. From increasing production capacity and improving efficiency which has saved Total Installed Costs of 20% for one operator, to partnering with clients to develop decommissioning strategies, we work as a strategic partner with clients to minimise risk and maximise value.

THE WIDER ENERGY SECTOR

The knowledge we've acquired in the oil and gas sector has provided us with a great platform to service nuclear and renewable energy clients and we are now a partner of choice for various wind energy developers and operators, in both onshore and offshore settings.

Our renewable energy credentials include work on one of the UK's first anaerobic digestion plants, a wide range of hydroelectric and pumped storage schemes, plus over 20 district energy networks.

Locations

Putting our energy into safe, predictable & sustainable solutions

Headquarters Aberdeen

- Operational Offices
- Working Locations
- RSK Locations

United Kingdom

Headquarters in Aberdeen, that represent PD&MS Group's global centre of engineering excellence. In addition, we have engineering and project delivery offices in Grangemouth and Glasgow including SEL our Clean Tech sector experts.

Azerbaijan

Regional Office in Baku delivering Engineering, Procurement Construction and Commissioning services in Azerbaijan, Georgia and Turkey (AGT), Eastern Europe and the Middle East.

About Us

Putting our energy into safe, predictable & sustainable solutions

Stronger Together: Powering Progress Through Collaboration

OPTIMUS PLUS
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Optimus Plus are our front end specialists that we acquired in 2022.

They are a well-established, highly experienced, specialist engineering and consultancy company, combining decades of proven expertise and strategic insight to deliver simple, responsive and cost-effective solutions for the energy industry from concept to decommissioning.

- Conceptual Design / pre-FEED
- FEED
- Multi-Discipline Detailed Design
- Specialist Engineering Services
- Asset Life Extension & Optimisation
- Offshore Survey including laser scanning
- Operational Support inc. troubleshooting
- Decommissioning Engineering Services
- Structural Analysis
- Pipe Stress Analysis
- Availability/ Maintainability Modelling and Reviews
- Decision & Risk Management
- HAZOP/ HAZID/ SIL/ LOPA assessments
- Safety Studies, including Safety Case Reviews
- Contracting and Supply Chain

SYNERGIE ENVIRON
Decarbonisation & Energy Efficiency Specialists
a PD&MS group company

Synergie Environ are our environmental specialists. The team of engineers are focused on cutting cost, consumption and carbon for its clients.

Synergie Environ was born out of desire to push forward the development of clean energy in Scotland and the UK and their vision is simple:

"To assist in the delivery of a zero-carbon future by providing innovative clean technology solutions to industry and businesses."

The team operates over three core business lines: Anaerobic Digestion and Bioenergy, District Energy Networks, and Energy Efficiency and Strategy.

RSK

We were acquired by RSK in 2023.

RSK is a global leader in the delivery of sustainable solutions. Our family of more than 250 environmental, engineering and technical services businesses works together to provide practical solutions to some of the greatest challenges societies have ever faced.

With our integrated offering across research and development, consultancy and on-the-ground application, we can deliver a complete solution that is unrivalled in the market.

Trusted Partner

Putting our energy into safe, predictable & sustainable solutions

WELL-SAFE SOLUTIONS
bp
px energy solutions
sse Renewables
Allseas
Harbour Energy
BAE SYSTEMS
mace
Apache
CalaChem
SPIRIT ENERGY
STANDARD
PETROLEUM EXPERTS
INEOS
MORAY EAST OFFSHORE WINDFARM
REPSOL
VATTENFALL
EL MANSOURA PETROLEUM COMPANY
Rampion Offshore Wind
TAQA
Sterling
dana PETROLEUM
ConocoPhillips

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Our Capability

Your Trusted Asset Lifecycle Partner

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Consultancy

Front-End Focus. Long-Term Value

Our team at Optimus delivers critical insight and technical decision support.

Our full range of front-end services include: project framing, risk analysis, business case development, and FEED studies, laying the foundation for efficient and well-executed projects.

We also help clients make confident, data-led decisions throughout an asset's lifecycle, all the way to decommissioning, including:

- CAPEX/OPEX optimisation
- lifecycle costing
- asset management strategy
- and digital twin integration.

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Consultancy

Low-Carbon and Environmental Leadership

Sustainability is embedded from the start.

Synergie Environ provides decarbonisation consulting, regulatory compliance support (SECR, ESOS, Scope 1 -3 emissions), and feasibility studies for low-carbon technologies including CCUS, hydrogen, and district energy systems.

We also support circular economy planning, environmental and socio-economic impact assessments and develop tailored Carbon Management Reduction Plans for clients starting with identifying an emissions baseline, then appraising and producing recommendations which reduce energy costs and carbon emissions.

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Projects & Modifications

Sound Management. Extensive Experience. Dependable Execution

We have the full capability to deliver large, medium, small and minor modification projects to facilitate efficient execution with the right level of requirements and assurance.

As a strategic partner have the capability and resources to directly manage and execute all scope of work activities and each phase of the project lifecycle including the effective execution of site work.

- Engineering and Design
- Distributed Engineering Services
- Procurement
- Fabrication
- Construction and Commissioning
- Onshore Civils Design and Execution
- Project Management

With extensive experience across the UKCS and globally, **we understand the unique challenges of executing work within operational facilities.** Our robust systems and field-proven approaches minimise disruption to ongoing production while maintaining a steadfast focus on safety, compliance, and continuity of operations.

Our agile and lean approach to project delivery is completely scalable to suit scope complexity / maturity and workload fluctuations.

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Asset IMR & Repair Orders

Smarter Execution. Safer Operations. Longer Life.

We offer a proven and pragmatic approach to asset IMR and repair orders, combining comprehensive experience with cost-effective delivery methods. The fit-for-purpose delivery applies engineering efforts only where it adds value, minimising cost while upholding compliance and safety.

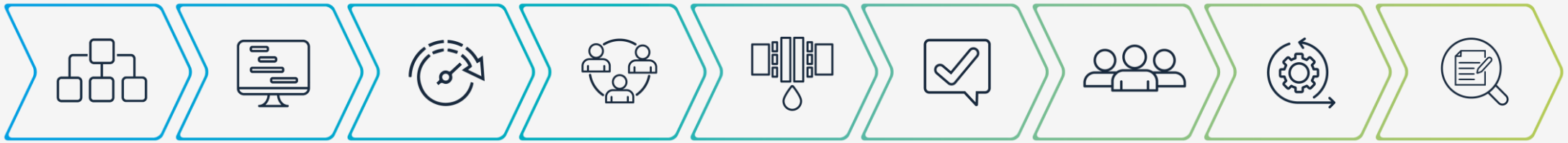
Our scalable, fit-for-purpose approach also includes:

- Risk based selection process
- Full integration with client work management systems
- Customised workflows
- Scalable processes based on scope categorisation and complexity
- Optimised planning based on criticality
- IMR campaign management
- Fixed price menu options based on standardised deliverables
- Full EPCC services

Our Capability

Putting our energy into safe, predictable & sustainable solutions

TAR & Campaign Management



Strategic Planning. Agile Delivery. Measurable Performance

We provide full end-to-end delivery of shutdowns, TARs and W2W campaigns including planning, preparation and execution. As a strategic partner, we create value for clients through integrated TAR and shutdown services in the following areas:

- We take responsibility for planning, preparation and execution of all TAR activities including vendor management and incumbent 3rd party contractors.
- Free up operator capacity to focus on high value activities.
- Early TAR and W2W planning decision and risk support to make informed decisions and minimise business impact.
- The PD&MS integrated delivery model enables greater control of priorities and managing reactive work.

Our Capability

Putting our energy into safe, predictable & sustainable solutions

TAR & Campaign Management

Our extensive capabilities include:

- Decision support and cost and schedule risk analysis
- Management of specialist vendors and 3rd party incumbent contractors
- Full bundled services offering minimising interfaces with client operations
- Full competency and performance management of all trades and supervision
- Single point accountability for the management of all project information and data including provision of Realtime status reporting
- Greater control of priorities and managing reactive work

'Single point accountability for the management of all project information and data.'

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Asset Management

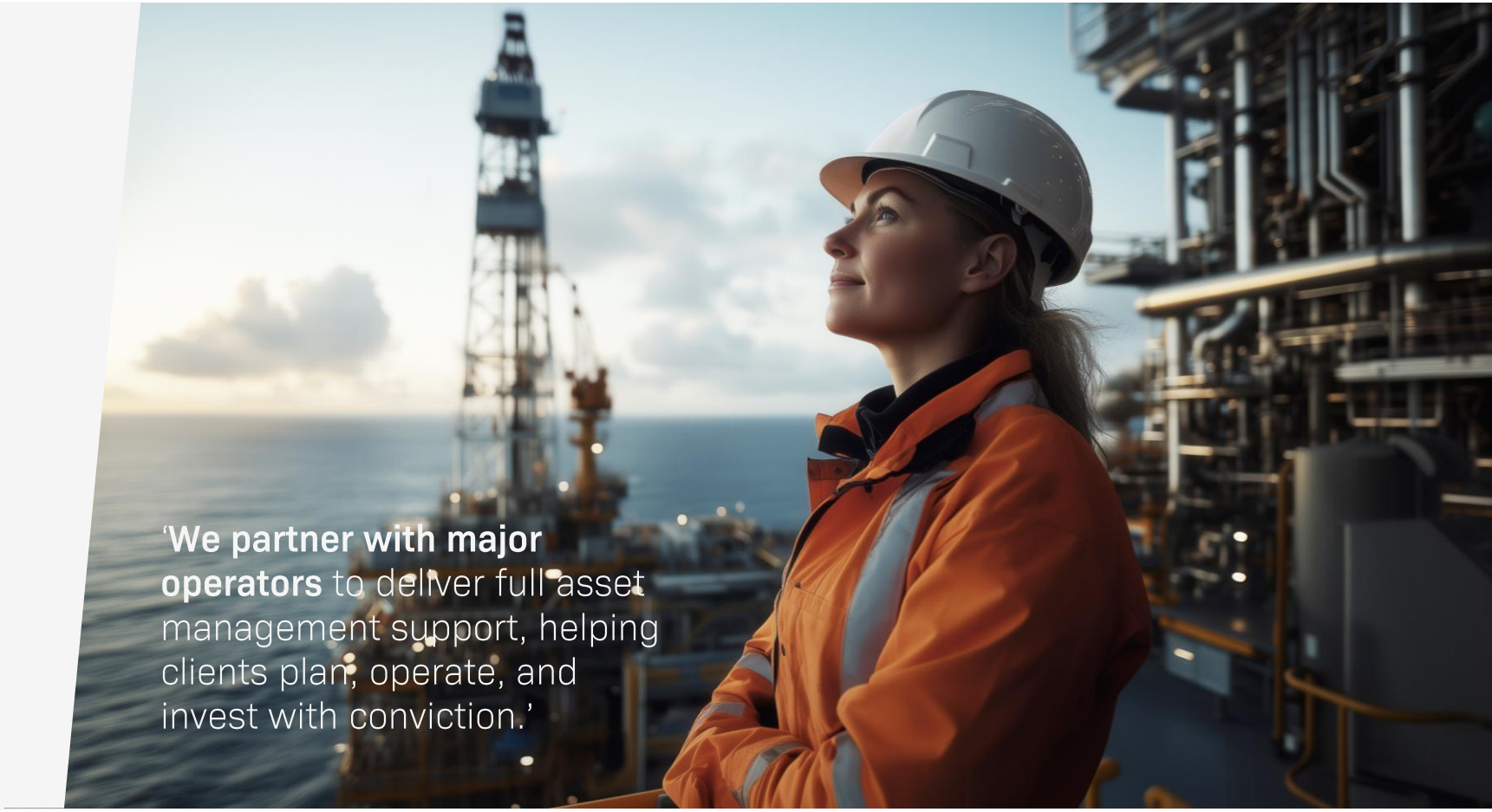
Strategy & Planning

Helping you plan, operate and invest with conviction

We partner with major operators to deliver full asset management support, helping clients plan, operate, and invest with conviction.

We also provide strategic planning, asset investment planning, and performance optimisation solutions, backed by real-time data, predictive analytics, and digital tools. Our specialist services include:

- Decision Support & Optimisation / Asset Strategy
- Lifecycle Cost Analysis
- Optimised Maintenance Strategies
- Optimised Opex and Capex Portfolios
- Select the best value options when it comes to spend, and demonstrate why they represent best value



Our Capability

Putting our energy into safe, predictable & sustainable solutions

Asset Management

Operations and Maintenance

Maximising Asset Value. Minimising Risk

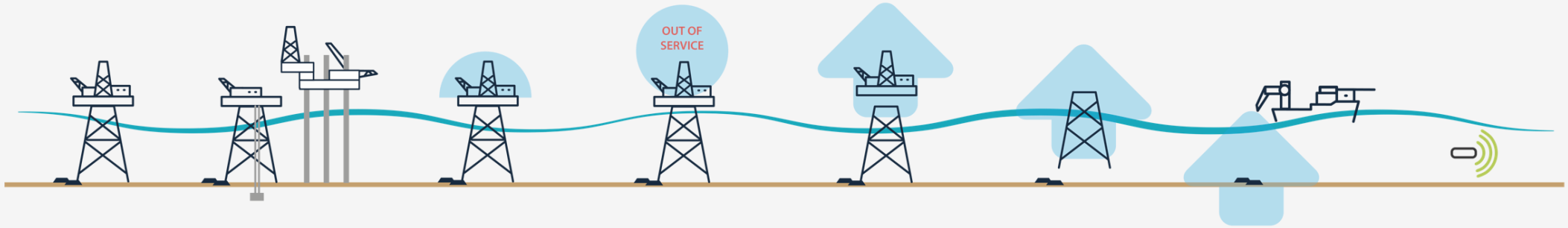
At the heart of our asset management approach is a commitment to operational excellence, safety and compliance, which also balances asset integrity with cost-effectiveness. We deploy an integrated framework that combines advanced data analytics, predictive maintenance and risk based inspection (RBI) methodologies to anticipate and mitigate failure risks.

‘At the heart of our asset management approach is a **commitment to operational excellence, safety and compliance**’

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Late life & Decommissioning



Responsible Decommissioning. Sustainable Outcomes

Our comprehensive late life & decommissioning services include but are not limited to:

- Strategy development
- Full EPC and vendor management
- Multi-discipline engineering and management services across all phases
- Specialist operations support including OIMs, production technicians and emergency response teams.
- Drilling facilities reactivation for P&A activity
- Well suspension activities, pre-decommissioning plugging
- Pigging, flushing, cleaning and pipeline project management services
- Topside preparation and removal support
- Engineering down and cleaning
- Post-decommissioning monitoring

We work closely with RSK specialists such as Axis Well Technology, to support plug and abandonment (P&A) activities, and with CessCon, to ensure material recovery and reuse (achieving recycling rates of over 99% by weight).

Our ISO 14001-certified QHSE framework ensures full compliance, traceability, and best practice environmental performance.

By integrating decommissioning into our full lifecycle model, we help clients:

- manage liability,
- reduce ABEX, &
- ensure the sustainable closure of assets

for alignment with ESG goals and future regulatory expectations.

Our Capability

Putting our energy into safe, predictable & sustainable solutions

Asset Specialist Services

Precision Support for High-Risk, High-Value Environments

Our specialist asset services provide hands-on support for safe, compliant and efficient operations.

We deliver advanced inspection and testing, rope access maintenance, joint integrity management, and asset verification across some of the most complex operating environments in the world.

Our comprehensive offering includes the following services:

- Inspection Services
- Joint Integrity
- Rope Access
- Safety and Control Systems
- HVAC Services
- Management of Asset Incumbent Vendors
- Ex Inspection and Maintenance

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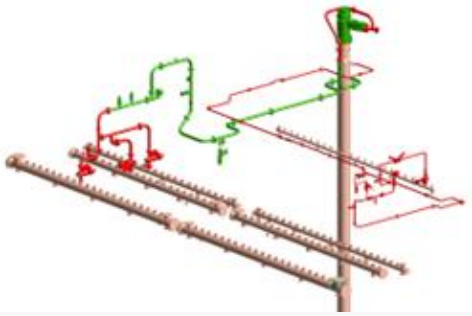
Our Experience

Your Trusted Asset Lifecycle Partner

bp AGT Flowline Contract Overview

PD&MS Optimised Approach to Flowline Delivery



DURATION

2022 – Present

OVERALL VALUE

£25m (p.a)

SCOPE OVERVIEW

Full EPC delivery covering the bp AGT portfolio of flowline projects, on average 30No projects delivered each year.

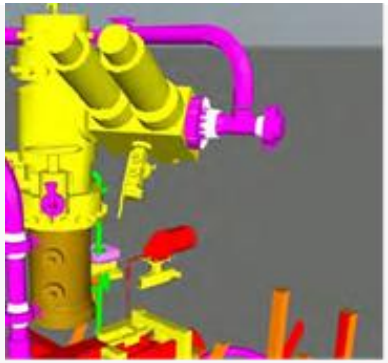
KEY ACHIEVEMENTS

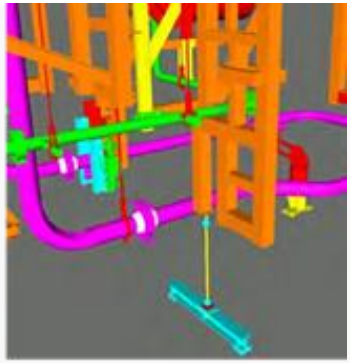
- Developed standardised engineering and project workflows with a focus on optimised delivery
- Optimised FEL process aligned with bp OMS requirements to provide cost and schedule certainty
- 25% reduction in overall project cycle times
- 40% lower engineering and project management costs as change is mitigated into execute phase
- Alternative AVL developed based on PD&MS common suppliers generated 30-40% cost reduction and 40% schedule gains
- 20% Total Installed Cost (TIC) savings achieved through optimisation initiatives

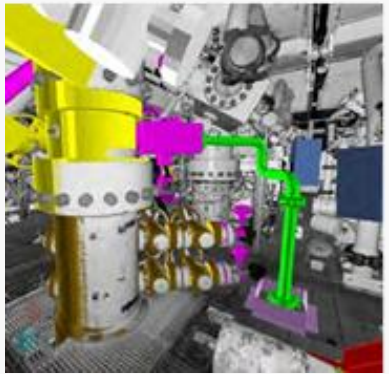
SCOPE

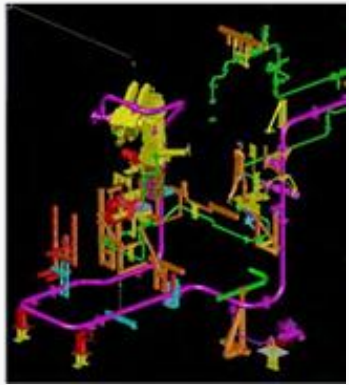
Through our right sized scalable engineering frameworks, we have demonstrated best in class flowline delivery and rapid project execution which has resulted in early project delivery, optimising overall drilling programmes and maximizing Installed Production Capacity. Our customised processes have achieved rapid project execution through;

- Standardised project workflows, CTR estimates and Planning templates reducing project administration and introducing faster approval cycles.
- Standardised design templates reducing engineering durations through simplification and improving consistency in delivery.
- Faster project cycle times achieved benchmark is 12 weeks detailed design phase for complex flowline installations from execute phase KO to C01 work pack delivery.
- Workflows aligned with lean and agile project delivery model using visual workflow management and kanban approach to manage a high volume of portfolio projects.
- Total Installed Cost and Schedule benchmarking used to identify incremental improvements through stage of the project lifecycle.



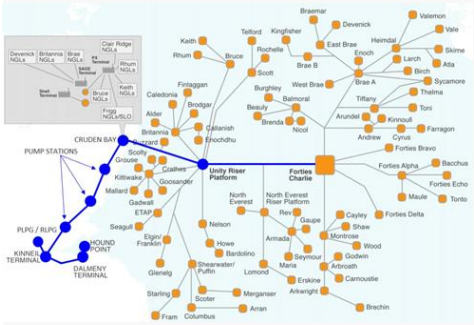






Ineos FPS

EPCm Contract, Forties Pipelines System (FPS)



DURATION

2024 - 2027

HOURS

Engineering and PM Hours Per Year: 180,000

Construction Manhours Per Year: 140,000

SCOPE OVERVIEW

PD&MS provide engineering, procurement, construction and management services for Ineos on the forties pipeline – for both onshore at Grangemouth and offshore on the Unity platform.

PD&MS deliver comprehensive EPCm services across projects, minor modifications, repair and maintenance, turnarounds and offshore walk-to-work campaigns at the Unity Platform, which the pipeline is routed through.

PROJECT DETAILS

A recent site construction project involved the removal and replacement of corroded pipeline from separator tanks.

Services deployed:

- Valve specification
- Construction isometrics
- Stress analysis/nozzle loads
- Inspection plans (ITP)
- Civils (underground services survey, drawings etc if required)
- MTO
- Procurement, fabrication and installation of pipe work, including all excavations, civil works and backfill as required
- All fabrication packs, test certificates and GoC documentation
- Project documentation relating to schedule and cost in line with the requirements governance of minor mods projects

Apache

Corona Topsides Modifications Feed

DURATION

10 months

OVERALL VALUE

£1.4 million

SCOPE OVERVIEW

FEED study for topside modifications to Beryl Alpha process facilities to enable production of Corona heavy oil based on provision of two HSP production wells and requires artificial lift technology by way of a Hydraulic Submersible Pump.

KEY ACHIEVEMENTS

- Project delivered on time and within budget, despite major changes to scope mid way through
- New monorail system developed to for transportation subsidise crane capacity
- Close liaison and integration between PD&MS and Apache teams to reach optimal decisions
- FEED for major capital project which received recognition and praise from Apache on performance

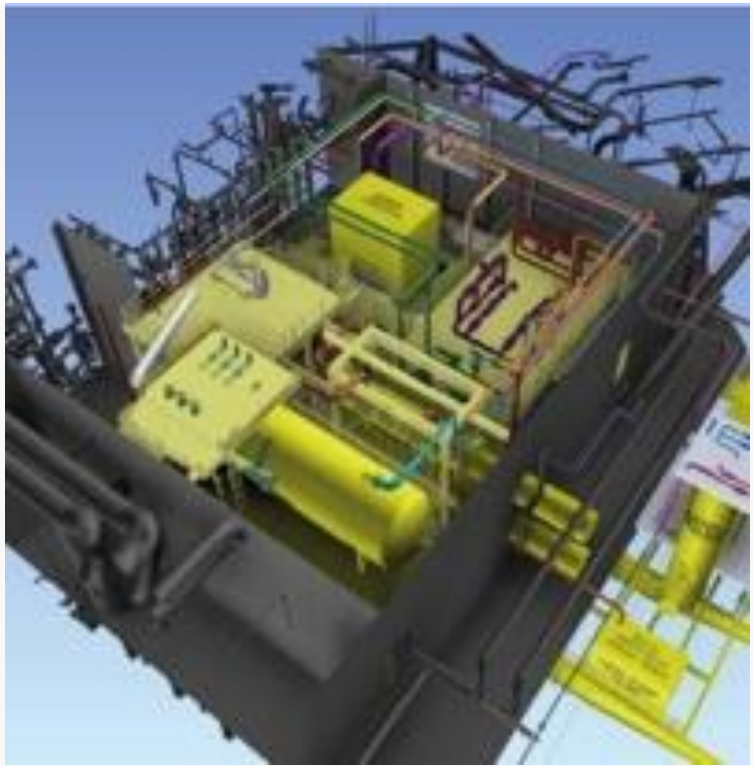
SCOPE

PD&MS delivered a FEED report which defined 26 new equipment packages, with budget quotes, weights & dimensions determined for all, including the following:

- Inlet Heaters, Inlet Separator and de-oiling & de-sanding Hydrocyclones;
- Upgrade Train Separator internals
- Produced Water Transfer pumps and degasser;
- Power Fluid Booster Pump;
- PWRI pipework for excess water disposal route;
- Ballast Water CFU and modifications to Nitrogen Generation system
- Chemical Injection Upgrades

CHALLENGES/ HOW WE MANAGED THEM

Major changes to scope mid-way through project resulted in major changes to the FEED, managed within budget and schedule.



Spirit Energy

Putting our energy into safe, predictable & sustainable solutions

DP3 and DP4 Decommissioning Services

DURATION 15 months

OVERALL VALUE £16 million

SCOPE OVERVIEW

The provision of engineering, project management & offshore services to prepare DP3 & DP4 topsides for lighthouse mode & future removal, including full decommissioning services support & the provision of intervention teams (including PD&MS OIMs, Production Leads and ERT Team members) for the purpose of operating the asset alongside Spirit Energy as the Joint Services Operator

KEY ACHIEVEMENTS

20,000 hours LTI free to date, including support of major asset shutdown scope and NUI interventions.

The offshore team have successfully performed a series of NUI intervention visits allowing the accelerated progress or completion of a number of the base project scopes

Provided SACS modelling expertise to Spirit Energy, ensuring that the global loads imparted onto the NUIs throughout the project lifecycle can be sustained.

Onshore team provided expert Safety Case services such as provision of Safety Case supporting documentation (QRA, EERA, Hazardous Area Classification etc) on behalf of Spirit Energy. The team also successfully interfaced with IVB and HSE on behalf of Spirit Energy.

SCOPE

Supporting Spirit Energy through financial investment decision gate into detailed design. Followed by detailed onshore engineering, provision of Safety Case updates and simultaneous execution of preparatory scopes on Normally Unmanned Installations. Leading into provision of all support services offshore during one-year drill rig campaign to plug and abandon platform wells and two remote subsea wells.

We provided project Engineering Authorities across key technical disciplines, approved and empowered by Spirit Energy to oversee the engineering design. The mindset of the project is ‘design for decommissioning’. Throughout the engineering phase the team were encouraged to challenge the traditional approach. Construction led solutions were produced, with the expectation that traditional engineering solutions would be challenged to ensure that the proposed methodologies were safe, yet pragmatic and cost effective.

Provided general services & personnel to support the wider project objectives:

- NUI intervention offshore team
- Project Management and Services team
- Technical safety support
- EA2 (Engineering Authority support)
- Secondment of Various Operations specialists
- Coarse SIMOPS

The DSC contract initially entailed the following core activities, taking the DP3 and DP4 assets to a safe state, ready for the removals contractor:

- Asset integrity scopes
- Wellbay clearance scopes
- Pigging and Flushing
- Global isolations scope
- Engineering down and clean of the topsides systems
- Aids to Navigation (AtoN)
- Rig interface support
- Deck strengthening
- Laser scanning survey of DP3

A number of additional scopes were added to the contracted scope of work:

Relocation and removal of NUI Crane Boom(s) –Support to Spirit Energy and their contractor in relocating the NUI cranes during intervention visits. Subsequent removal of the Crane Booms was also requested of PD&MS.

Global Structural Analysis – Review of the Staad global integrity model for the primary structure and analysis of the load conditions that could be seen by the structure during the Execute phase. These developed into the review and analysis of the DP3&4 finite element models under load cases throughout the lifecycle of the project, including the P&A campaign by others.

Support to Bains subsea flushing – The flushing of the pipeline between the Bains subsea well and Central complex was executed from a DSV as part of the wider field decommissioning programme. PD&MS were requested to support with onshore discipline engineering and Technical Safety support, followed up by offshore support during the flushing campaign.

The restricted access to the NUI worksites, restricted by Civil Aviation Authority permission to land, combined with unpredictable weather and the necessity to perform mandatory asset maintenance routines has proven challenging. However, the project teams’ willingness to interact with the asset team has allowed for an integrated approach and work scopes are now well progressed.

Spirit Energy

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Morecambe Hub Repurposing and Decommissioning Study

DURATION	4 months
VALUE	£63,000

KEY ACHIEVEMENTS

- Fulfilled NSTA requirements under Stewardship Expectation 11.
- Examined potential for onshore green hydrogen generation
- Examined potential to utilise land or repurposed rigs for wind farm infrastructure, and for using the onshore terminal area for wind or solar PV installations following a planned upgrade to the local electrical substation.
- Strong ESG policy recommended, and to ensure that scope aggregation was made a high priority.
- Various ports evaluated for logistical and environmental merits, and various technologies for energy-efficient decommissioning operations were explored.

SCOPE

As part of the Spirit Energy ambition to be a net zero organisation and satisfy the NSTA Net Zero Stewardship Expectation, Synergie Environ was appointed to provide a report analysing potential repurposing options and methods of decarbonising the decommissioning process of the SE assets at Morecambe Bay hub. These assets included offshore platforms and onshore terminals.

Synergie Environ conducted a comprehensive two-part study which looked to firstly identify reuse and repurposing options for the Morecambe Bay assets and their various components, and then secondly to review the decommissioning process and identify options to decarbonise the process through different techniques or new technologies.

ENVIRONMENTAL IMPACT:

The carbon reduction options proposed by Synergie Environ has allowed SE to plan and prioritise their wider environmental, social and governance (ESG) strategy implementation with regards to the decommissioning of these assets. Moreover, it equips SE with the necessary insights to explore potential avenues for minimizing emissions across all their owned assets and start to seek collaboration opportunities with other sectors.

PD&MS GROUP an RSK company

BP

BP Clair Carbon Management and Reduction Plan (CMRP)

LOCATION

United Kingdom

POTENTIAL SAVINGS

68% of CO2 emissions over 5 years, and 90% of NOx emissions.

SCOPE OVERVIEW

As part of BP's ambition to be a net zero organisation by 2050 or sooner, we carried out a Carbon Management and Reduction Plan (CMRP) on a BP owned asset located in the Clair Oilfield, 75km West of Shetland, named Clair Phase 1.

KEY ACHIEVEMENTS

- Carbon intensity reduced from 16.42 kgCO2e / boe to 11.51 following SCR / VRU and to 2.71 following electrification.
- Identified a potential 120,681 tonnes of CO2e savings, and a 90% reduction in NOx emissions.
- Has allowed BP to plan and prioritise their wider environmental, social and governance strategy implementation as part of their road map to net zero by 2050.
- Identified potential saving of 60% of overall emissions through use of offshore wind to power the asset.
- Equipped BP with the necessary insights to explore potential avenues for minimizing emissions across all their owned assets.

SCOPE

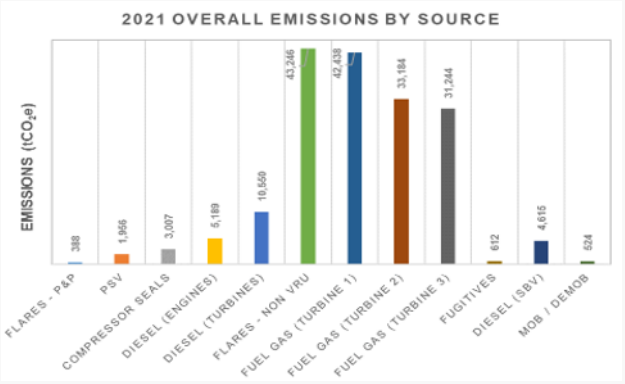
We conducted a comprehensive study to assess the emission baseline for a BP owned asset in the Clair oilfield, Clair Phase 1. This included mandatory scope 1 and 2 emissions, plus scope 3 emissions associated with personnel transfer and support vessels.

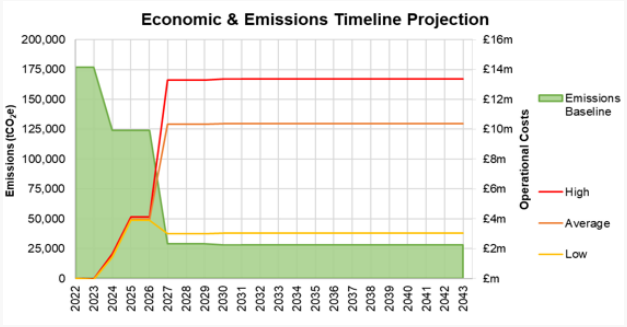
From this study, we identified and carefully evaluated opportunities to reduce the carbon footprint, and to improve the energy efficiency of the Clair Phase 1 asset. These potential improvements could lead to significant environmental and operational benefits.

We targeted scope 1 emissions through identifying ways to reduce energy generation systems on board the asset. One of the most attractive options for this was the implementation of using offshore wind power to power the asset, this option accounted for a potential saving of 60% of overall emissions for the asset. Other options which involved a direct reduction in scope 1 emissions were a Load reductions opportunity study, water source heat pump and a lighting replacement scheme. We also assessed the viability of an SCR (Selective Catalytic Reduction) unit, which could potentially cut down NOx emissions from the asset by as much as 90%.

To provide a fully comprehensive study tackling all emission sources scope 3 emission reduction opportunities were also provided to align BP with their goals to achieve net-zero by 2050.

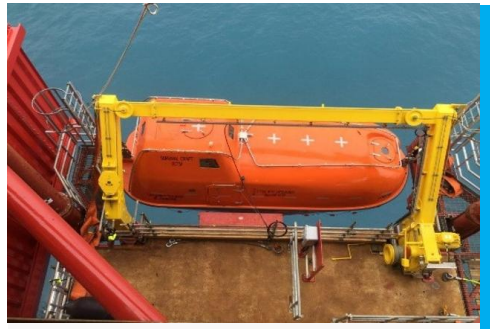
These opportunities included suggested improvement to their supplier selection process with more sustainable fuel options and engine types.





Harbour Energy

EPCC Contract – Projects and Modifications



DURATION

2016 – Present

OVERALL VALUE

Contract includes the delivery of all modifications and anomalies work scopes including studies, engineering, procurement, materials management, onshore construction, offshore construction and close out. Contract includes the provision of all labour, supervision, professional and technical services, equipment, materials, consumables and inspection and testing required to deliver the complete scope of works.

HOURS

- Engineering and PM Hours Per Year: 110,000
- Construction Manhours Per Year: 65,000

LOMOND LIFEBOAT INSTALLATION

Structural modifications on the Lomond Bridge Landing Platform to necessitate the installation of a new 50-man lifeboat. PD&MS were requested by Chrysaor to install a new 50-man lifeboat on the Southwest Corner of the Lomond Platform; which already had 2 lifeboats installed. The proposed location of the new lifeboat was the cantilever platform that was constructed for the Bridge Landing (BLP) used when Lomond had an accommodation vessel alongside.

HAWKINS OVER ARMADA TIE BACK

The Hawkins over Armada Process Scope entailed the Engineering Design, Procurement, Construction and Commissioning of a variety of packages, over the existing Chrysaor Armada Production Platform.

The scope consists of the below main elements:

- TAR Valve installation (Production, Test and Flare Tie-Ins)
- 8” Production Flowline
- 2” Methanol Injection to Well
- 2” Flare Connection
- Electrical and Instrumentation Tie-In to existing infrastructure
- HPU package modifications.

Moray East Offshore

Offshore Met Mast Decommissioning Project - Firth North Sea

DURATION

6 months (Aug 2020-Jan 2021)

OVERALL VALUE

£450k

SCOPE OVERVIEW

PD&MS' team of GWO multi-skilled rope access personnel conducted a DROPS sweep before boarding the mast. They then performed Visual and NDT inspections on designated areas, including the mast, lattice structure, and monopile. The team assisted in safely removing items identified in previous inspections and initiated decommissioning activities following a defined destruct methodology and partial reverse engineering.

CLIENT VALUE

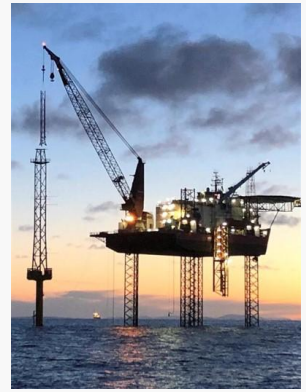
Carl Galfskiy Project Manager Moray East Offshore Windfarm said

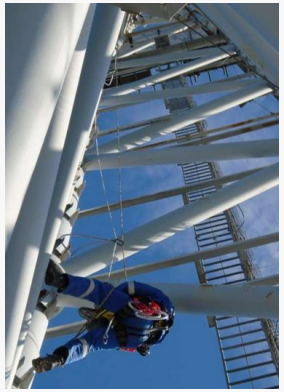
"The PDMS support for the offshore met mast was first class, as was the onshore mast decom project. With the guys on the mast working in Sub-zero conditions and tight time schedules they gave 110 %.

Most importantly, the effective planning and documentation development from PDMS and the PDMS professionalism (both on and offshore) culminated in the safe execution of what was a very difficult WAH project. Congratulations to all and well done"

SCOPE

- Delivered a variety of GWO multi-skilled rope access personnel.
- GWO qualified rope access inspection team carried out a DROPS sweep prior to boarding the mast.
- Once onboard, the team successfully undertook Visual and NDT inspections at designated areas of the mast, lattice structure, and monopile (confined space).
- Asset decluttering; assisted in the safe removal of items located at height identified from the previous inspection campaign.
- Decommissioning; commenced decommissioning activities in line with the defined destruct methodology and in part reverse engineering.





Spirit Energy

Putting our energy into safe, predictable & sustainable solutions

European Gas Turbine Decommissioning – North Morecambe Terminal

DURATION	12 months
OVERALL VALUE	£1.5 Million

SCOPE OVERVIEW

PD&MS undertook the Engineering Down and Cleaning (EDC) of the European Gas Turbines EGT Z-8430A & Z-8430B units previously used to power North Morecambe Terminal, isolating and air gapping the units and bringing them to a suitable and safe condition for demolition

KEY ACHIEVEMENTS

Successful isolation, separation and removal from live plant within a working Gas Terminal.

One Team approach– Spirit Energy / PD&MS / Thomsons of Prudhoe

Project delivered on time and within budget

100% Safety Record, Incident free project

86% recycling rate achieved (large amount of concrete/gravel to dispose of)

SCOPE

The EGT Decommissioning Project encompassed all phases from front-end engineering and detailed design through to procurement, construction, demolition, and the removal of the European Gas Turbines (EGT) units Z-8430A and Z-8430B. This work was undertaken to support Spirit Energy's safety culture and to eliminate ongoing maintenance requirements associated with the redundant units.

The scope of work successfully delivered included:

- Engineering Down & Cleaning activities
- Air-gapping of utility pipework systems
- Identification and Abandonment of redundant cables
- Complete software modifications:
  - Emergency Shut Down (ESD)
  - Fire & Gas (F&G)
  - Distributed Control System (DCS)
- Coordination of handover procedures from Spirit Operations to the Demolition Contractor, in full compliance with CDM (Construction Design and Management) regulations.
- Complete demolition of the EGT units down to slab level, with the site finished in accordance with client specifications.

The successful delivery of the scope has enabled PD&MS to continue to support Spirit Energy with the decommissioning of larger plant within North Morecambe Terminal.

Moray East Offshore

Putting our energy into safe, predictable & sustainable solutions

Offshore Met Mast Decommissioning Project - Firth North Sea

DURATION	6 months (Aug 2020-Jan 2021)
OVERALL VALUE	£450k

SCOPE OVERVIEW

PD&MS' team of GWO multi-skilled rope access personnel conducted a DROPS sweep before boarding the mast. They then performed Visual and NDT inspections on designated areas, including the mast, lattice structure, and monopile. The team assisted in safely removing items identified in previous inspections and initiated decommissioning activities following a defined destruct methodology and partial reverse engineering.

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SCOPE

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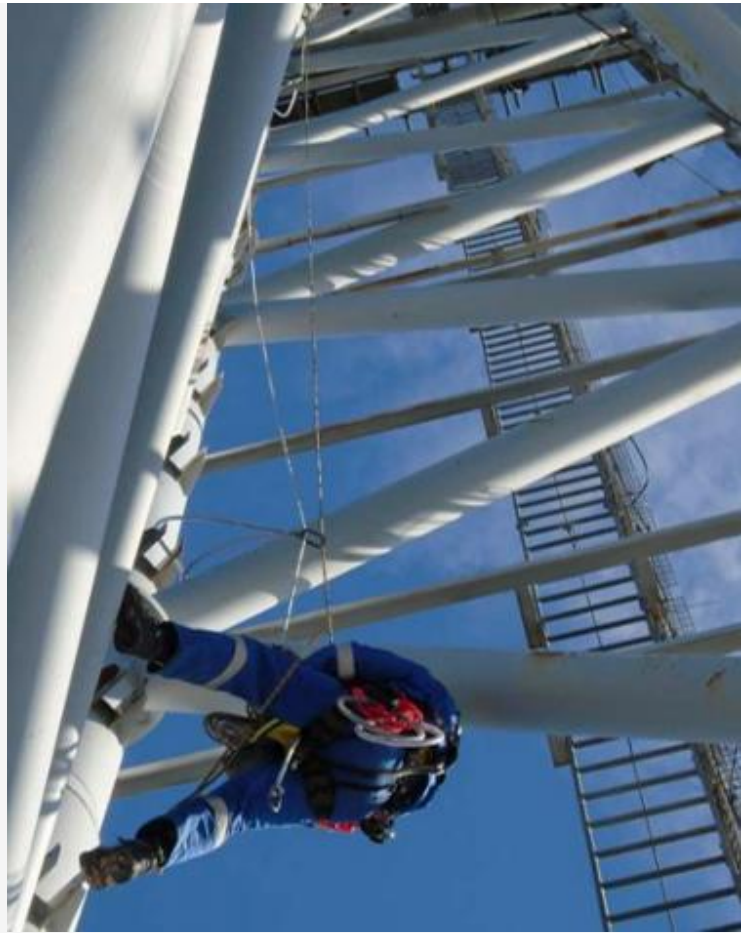


Allseas

Putting our energy into safe, predictable & sustainable solutions

Ninian North Topsides for Decommissioning

DURATION	26 Weeks
OVERALL VALUE	£1.7 Million

KEY ACHIEVEMENTS

Overall project saving of 40%

Project delivered against an aggressive fast-track schedule

Engineering and construction delivered in parallel

Over 15,000 direct person-hours liquidated with no LTIs

The Operator and client provided positive feedback in recognition of PD&MS and how the team's work resulted in an overall project saving of 40%.

SCOPE

The Ninian North Platform formed part of a three-platform facility in conjunction with Ninian Central and Ninian South located in the East Shetland Basin. It was a combined drilling, production and accommodation platform.

The Ninian North Topsides Removal Preparation Project consisted of completing all necessary modifications to facilitate the topsides removal by Allseas' Pioneering Spirit Heavy Lift Vessel. This fast-tracked project commenced in November 2017, with engineering and implementation completed by April 2018.

KEY CHALLENGES:

- As a fast-tracked project, time was particularly tight on the Ninian North Topsides Removal Preparation Project
- The delivery of fabrications was required in a short time frame and offshore implementation was unfortunately severely restricted by adverse weather from November 2017 to January 2018. Additionally, the work scope also grew as the project unfolded, with the client continuing to mature their design
- However, remaining agile and with onshore and offshore personnel closely collaborating throughout, the PD&MS team was able to work around these challenges and ensure the work scope and its additions were completed on schedule.

Shell

Putting our energy into safe, predictable & sustainable solutions

Brent Alpha Decommissioning

DURATION	12 months
OVERALL VALUE	£10 million

KEY ACHIEVEMENTS

Extensive below-deck rope access work scope

Installation and welding of twelve number bearing blocks with zero defects

Scope of work completed on schedule

PD&MS received excellent feedback from Shell representatives regarding its safety record, QHSE performance and offshore supervision throughout the project.

SCOPE

Management and delivery of full appraise, define, execute, implementation, commissioning and close out of the MLXP Project.

THE SCOPES INCLUDED:

- Conductor cutting and removal
- Riser cutting and removal
- Installation of a temporary generator
- Modular Drilling Unit (MDU) installation
- Seawater and firewater caisson guide installation
- BA-BB power cable and umbilical removal
- BAR riser removal
- 20” gas riser removal
- 16” western leg riser removal
- 18” service water line removal
- NavAids installation

KEY ACHIEVEMENTS:

- Extensive below-deck rope access work scope
- Installation and welding of twelve number bearing blocks with zero defects
- Scope of work completed on schedule

Well Safe Solutions

Putting our energy into safe, predictable & sustainable solutions

Carbon Management and Reduction Plan

DURATION	6 months
VALUE	£56,000

KEY ACHIEVEMENTS

Identified 4,000 tonnes of CO2e savings, and a 20% reduction in NOx emissions Carbon tax savings worth £200k-£300k per year.

Provided business case for load reduction assessment, battery storage systems, electrical motor improvements and various heat recovery opportunities.

A range of recommendations for Well-Safe to better control and reduce scope 3 emissions, such as internal data gathering advances, and improvements to their supplier selection process.

Technical optioneering of items such as sustainable fuels and support vessel engine upgrades

Energy efficiency and onsite generation by photovoltaics assessed for onshore head office

SCOPE

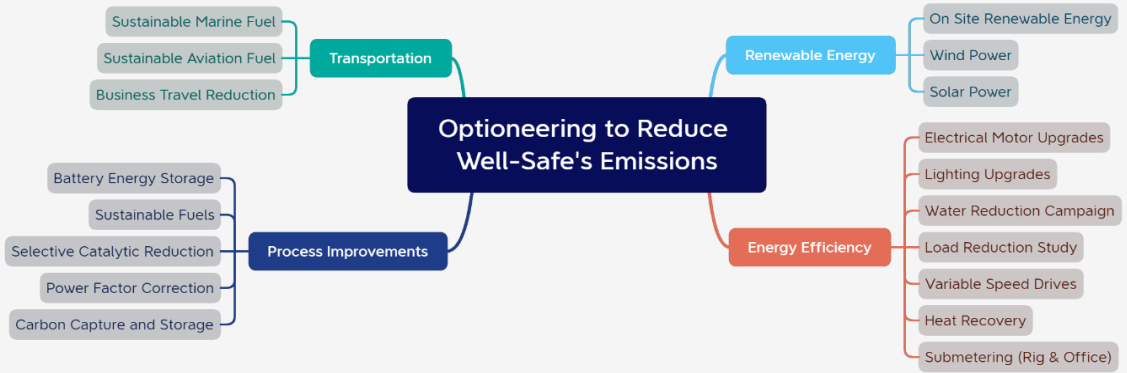
Synergie Environ conducted a comprehensive study to assess Well Safe's emission baseline, against which potential improvements could be compared. This included mandatory scope 1 and 2 emissions, plus scope 3 emissions associated with business travel, personnel transfer, and support vessels.

Potential opportunities were identified and evaluated to reduce the overall carbon footprint and optimise energy efficiency of all Well Safe assets, including the *Well Safe Guardian*, *Well Safe Protector*, and *Well Safe Defender* plugging and abandonment assets, as well as the company's Aberdeen headquarters.

A full site survey of the *Well Safe Defender* was conducted in port. A range of options for future improvements were then assessed and the most beneficial opportunities were presented as an action plan, with recommendations tailored for each asset.

ENVIRONMENTAL IMPACT:

The CMRP developed by Synergie Environ has allowed Well Safe Solutions to plan and prioritise their wider environmental, social and governance (ESG) strategy implementation, as part of their road map to enabling enhanced delivery of well plugging and abandonment for its clients.



Sterling Pharma Solutions (SPS)

Bio Plant Enhancement Project

LOCATION

Cramlington, UK

OVERALL VALUE

£8.5 million

SCOPE OVERVIEW

To build an AD plant for processing high-strength solvents, glycols and alcohol by-products from pharmacological manufacturing to produce biomethane.

KEY ACHIEVEMENTS

- >40GWh of biomethane per annum
- >6,600 tonnes of CO2e removed from emissions
- c.£400k saved per annum in disposal costs
- The first AD plant in Europe to process the high strength solvents, glycols and alcohols produced by SPS from their processes, converting the effluent into very low carbon biomethane.
- Biomethane generated is injected to the national gas grid, displacing higher carbon conventional gas.
- The plant will also give the site energy security against future fluctuations in energy costs and buffering against any shortages or interruptions that would force production to stop.

SCOPE

SPS was looking to expand their treatment capacity for onsite and offsite pharmaceutical waste, and to utilise anaerobic digestion (AD) to produce biomethane for grid injection, both of which would create substantial additional revenue streams while also improving resilience and energy security at the site. The first of its kind in the UK, the anaerobic plant uniquely uses liquid waste feedstocks with high organic content and converts them into clean, green energy, cutting carbon emissions substantially and providing green gas sufficient for hundreds of homes across Northumberland.

A major aspect of the project was the integration of the plant with the aerobic plant to ensure they work symbiotically and without interruption to the existing plant.

For delivery of the project, Synergie Environ took on principal designer and principal contractor roles, and acted as a “quasi-EPC” contractor, working essentially as the clients’ contractor, resulting in close collaboration between Synergie Environ and SPS staff. Synergie Environ successfully managed all subcontractors for civils, mechanical and balance of plant scopes, conducting procurement, design verification and site management.

SYNERGIE ENVIRON
Decarbonisation & Energy Efficiency Specialists
a PD&MS group company

Standard Gas

Energy-From-Waste

LOCATION
England

OVERALL VALUE
£5.5 million

KEY ACHIEVEMENTS

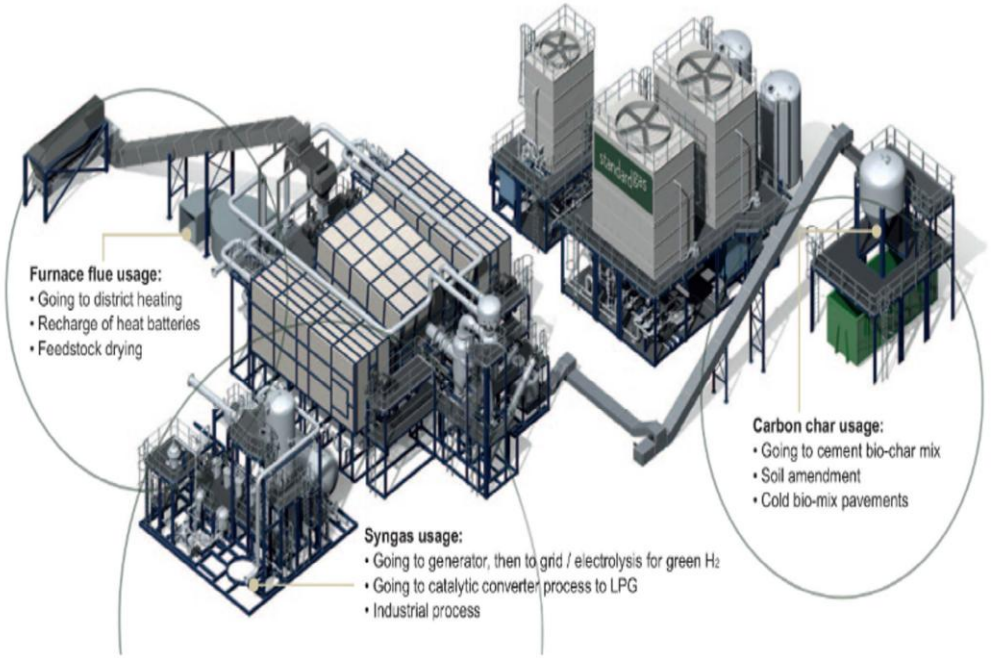
- Low-carbon alternative to landfill disposal for non-recyclable wastes
- Syngas can be utilised for electricity generation, H2 production via electrolysis or conversion to LPG
- Heat directed to district heating networks or heat batteries
- Residual char used in low-carbon construction materials

SCOPE

Pyrolysis system designed to produce syngas from biogenic and residual wastes. The syngas is then utilised for the generation of electricity, electrolysed to produce hydrogen fuel or sent to a catalytic conversion process to synthesise LPG.

Responsibilities included:

- Principal designer (CDM)
- Principal contractor (CDM)
- Detailed design review (inc. HAZOP)
- Procurement & installation of BOP items



Thank you for your time

We welcome any questions

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