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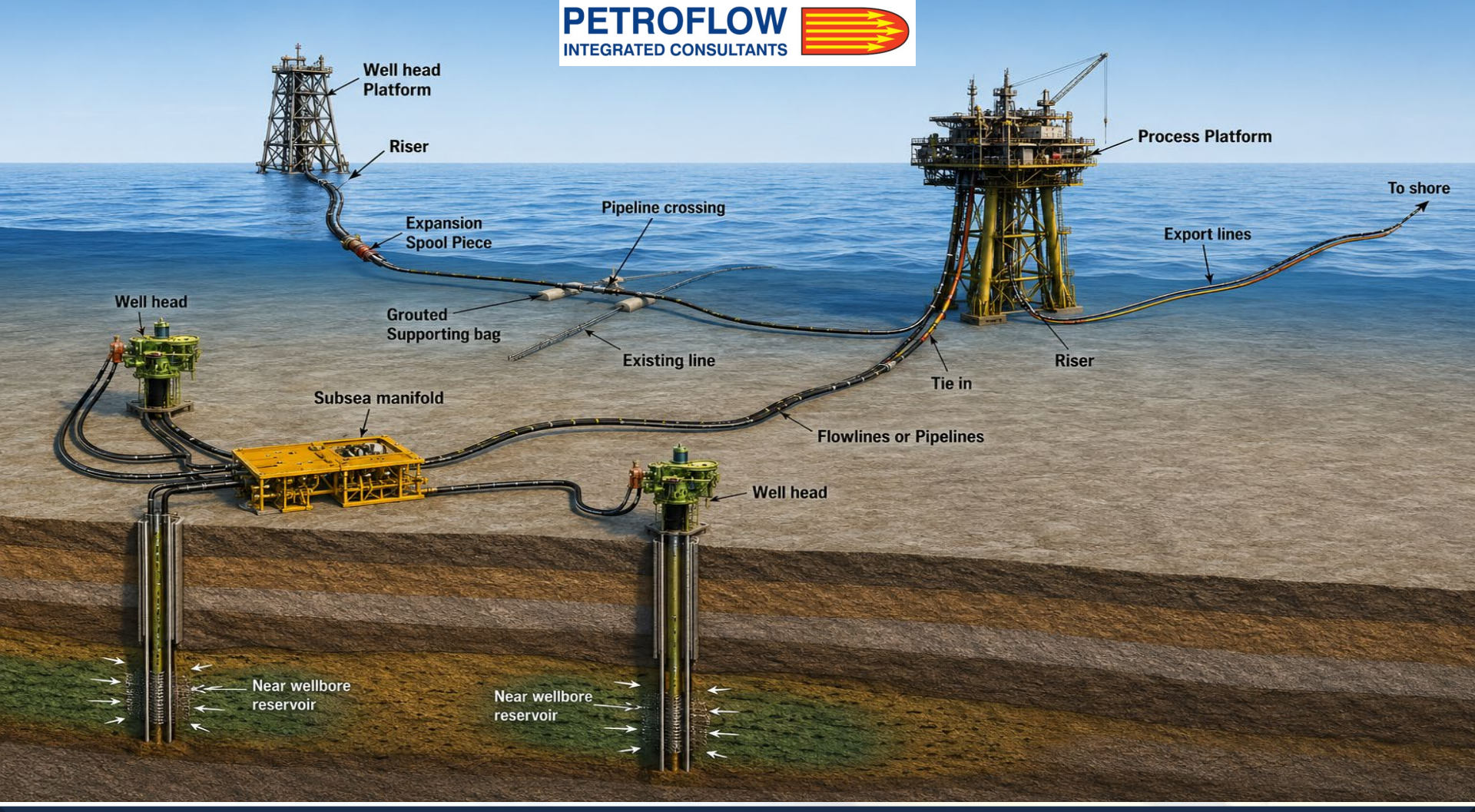

Integrated Engineering Consultancy: Sub-surface, Integrated Wells, Pipeline & Process Facilities Modelling & Environmental Services

Field Development, Pipeline & Process Engineering for Design, Operations and Production Optimisation

www.petroflowconsultants.com

ABERDEEN	DOHA	LAGOS
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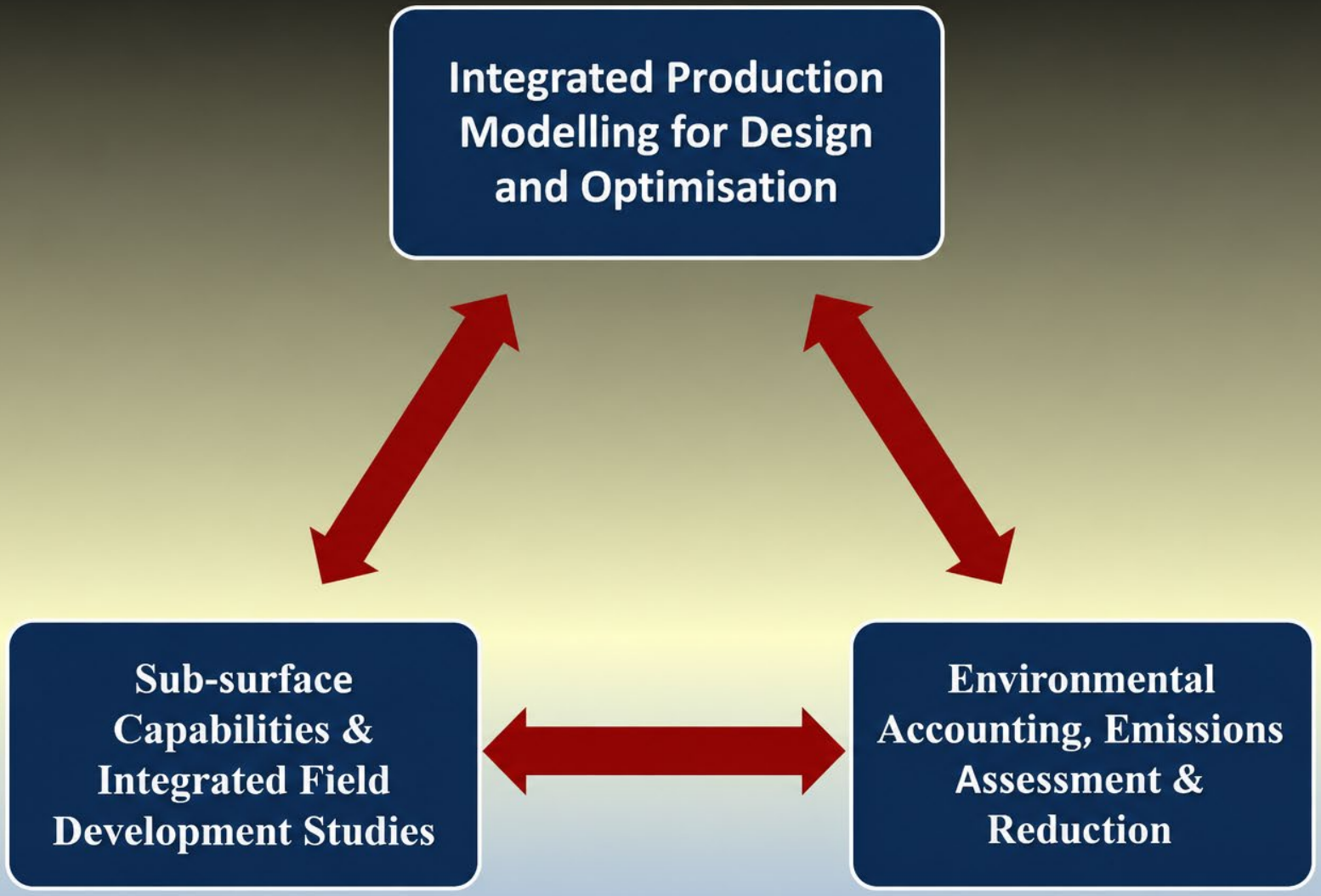
OUR CORE PILLARS



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WHY PETROFLOW

- Very competitive manhour & software rates
- Consultants with over 500+ years combined experience
- Short study execution times by leveraging on our technical experience
- Performed over 500+ integrated modelling, facilities process & flow assurance studies

EXPERIENCED
Proven expertise you can trust

EFFICIENT
Delivering quality faster

INTEGRATED
End-to-end solutions that add value

RESULTS DRIVEN
Focused on performance and reliability

Integrated Production Modelling for Design and Optimisation

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Input for Operations Support and Asset Optimisation

- Design Model
- Benchmark Against Operational Data
- Utilise for Operational Production-Impacting Decision-Making
  e.g. Integrated wells-to-process dynamic model for slugging investigation & mitigation, virtual metering, brownfield asset expansion

Input to Subsea Equipment & Process Design & Field Development

- CAPEX, OPEX – Economics & Risk
- Technical Safety Assessment
- Sub-surface & Reservoir Engineering
- Integrate Flow Modelling
- Subsea Routing/Layout, etc
- Mechanical Design
- Corrosion & Material Selection
- Process Facilities & Engineering
- Subsea Equipment Design
- Operations Strategy

- Waxy Crude
- Carbon Capture & Storage
- Training Courses
- High-Pressure/ High-Temperature
- Export Pipelines
- Hydrogen Gathering
- Deepwater
- Network Analysis
- Gas Storage

Delivering integrated solutions that optimise performance, reduce risk and create long-term value. | INTEGRITY | INNOVATION | IMPACT

SUB-SURFACE CAPABILITIES & INTEGRATED FIELD DEVELOPMENT STUDIES

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Reserves & Resources Estimation

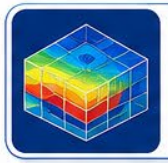
Quantitative evaluation of hydrocarbon volumes and resource potential.

Integrated Reservoir Studies & Field Development Planning

Integrated subsurface assessment to develop robust field development plans.

Geophysics & Geological Studies

Seismic acquisition and interpretation integrated with geological analysis.



Static Reservoir Modelling & Petrophysics

Construction of static models and petrophysical analysis to characterise reservoirs.

Reservoir Engineering & Dynamic Modelling

Dynamic simulation and history matching to understand reservoir performance.

Production Engineering & Optimisation

Optimisation of production systems to enhance efficiency and maximise value.

Geomechanics & Well Integrity

Assessment of rock mechanics and well integrity to ensure safe and reliable operations.

Drilling, Wells & Abandonment Engineering

Engineering support for drilling operations, well construction and safe abandonment.

Economics, Risk & Investment Decision Support

Economic evaluation, risk analysis and decision support for optimal investment outcomes.

Asset Valuation, M&A & Subsurface Due Diligence

Independent subsurface evaluation and valuation to support transactions and investments.

Enhanced Oil Recovery (IOR/EOR)

Screening, design and monitoring of EOR strategies to maximise recovery.

Carbon Capture & Storage (CCS)

Subsurface assessment and development of CCS opportunities and storage solutions.

Supporting operators, investors and governments across the full asset lifecycle. | INTEGRITY | INNOVATION | IMPACT

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Reserves & Resources Estimation

PRMS-Compliant (ARPR)

Objective

Independent, PRMS-compliant estimation of Reserves and Resources to support regulatory reporting, asset valuation, and investment decisions.

Methodology

Integrated static and dynamic reservoir evaluation
Deterministic and probabilistic estimation (P90 / P50 / P10)
Recovery factors linked to development concept and performance history
Forecasting using simulation, material balance, and decline analysis

Classification

Reserves: Proved, Probable, Possible (1P / 2P / 3P)
Resources: Contingent and Prospective
Clear linkage between uncertainty, maturity, and PRMS categories

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Integrated Reservoir Studies & Field Development Planning

Objective

To deliver robust Field Development Plans grounded in sound subsurface understanding and uncertainty management & provide end-to-end subsurface expertise supporting exploration, development, optimisation, and late-life asset management.

Approach

- Cross-disciplinary integration of geology, geophysics, reservoir engineering, geomechanics, production, and economics
- Fit-for-purpose models aligned with decision needs
- Continuous validation against production and surveillance data

Capabilities

- Integrated static and dynamic reservoir studies
- Deterministic and probabilistic modelling
- Development scenario design and optimisation
- Recovery maximisation and long-term performance forecasting

What Differentiates Us

- Fully integrated G&G, reservoir, geomechanics, production, and economics
- Field-proven workflows from concept to execution
- Strong focus on uncertainty, risk, and decision quality
- Experience across conventional, fractured, and unconventional reservoirs

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Geophysics & Geological Studies

Geophysics

- 3D seismic survey design and acquisition supervision
- Seismic processing, conditioning, inversion, and attribute analysis
- Rock physics and seismic petrophysics
- Quantitative interpretation and prospect de-risking
- Anisotropy, fracture characterisation, and 4D feasibility studies

Geology

- Structural geology and 2D/3D restoration
- Sedimentology and sequence stratigraphy
- Biostratigraphy and depositional framework analysis
- Volumetric estimation and uncertainty analysis

Static Reservoir Modelling & Petrophysics

Static Modelling

- Structural, facies, and petrophysical modelling
- Fracture characterisation and DFN modelling
- Integration of cores, image logs, seismic, and dynamic data

Petrophysical Interpretation

- Deterministic and probabilistic log interpretation
- Carbonates, clastics, tight and fractured reservoirs
- Saturation height functions and permeability prediction
- Electrofacies and rock typing
- FMI/FMS interpretation and fracture analysis

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Reservoir Engineering & Dynamic Modelling

Core Strengths

- Black-oil and compositional simulation
- History matching and predictive forecasting
- Well test, PTA, RTA, and DCA
- Material balance and reserves estimation
- Integrated Asset Modelling (IAM)

Applications

- Development planning and optimisation
- Field appraisal and reserves maturation
- Gas storage and gas condensate studies
- Performance monitoring and surveillance strategies

Production Engineering & Optimisation

Scope

From single-well optimisation to full field redevelopment

Capabilities

- Production logging and cased-hole diagnostics
- Water, sand, asphaltene, and formation damage analysis
- Stimulation design (acidising, fracturing)
- Integrated production and network modelling
- Intelligent field concepts and digital optimisation

Outcome

Improved uptime, recovery efficiency, and asset value.

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Geomechanics & Well Integrity

Why it matters

Critical for safe drilling, effective completions, EOR implementation, and long-term field integrity.

Capabilities

- 1D, 3D, and 4D calibrated geomechanical models
- Pore pressure and fracture gradient prediction
- Wellbore stability and mud weight window definition
- Fault seal and caprock integrity analysis
- Compaction, subsidence, and reservoir geomechanics
- Coupled reservoir-geomechanics modelling

Applications

- Well placement and trajectory optimisation
- Depleted and fractured reservoirs
- EOR and injection-induced stress management

Drilling, Wells & Abandonment Engineering

Drilling & Well Engineering

- Well design, casing, completions, and fluids
- Torque & drag, stress analysis, and integrity management
- Drilling guidelines and project management

Well Abandonment

- Rigless, subsea, and platform abandonment
- Full field abandonment planning
- Cost estimation and regulatory compliance
- Well integrity and long-term risk assessment

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Economics, Risk & Investment Decision Support

Purpose

Support investment decisions with technically defensible, transparent economics.

Economic Evaluation

- Field and prospect valuation
- CAPEX, OPEX, and abandonment cost modelling
- Fiscal systems and taxation analysis
- SEC and SPE-PRMS compliant reporting

Risk & Uncertainty

- Probabilistic economics and EMV analysis
- Portfolio ranking and optimisation
- Audit of client models and assumptions

Asset Valuation, M&A & Subsurface Due Diligence

Subsurface-Led Valuation Approach

- Integrated geological, reservoir, production, and facilities understanding
- Alignment of subsurface risks with economic outcomes
- Independent, audit-ready technical assurance

Key Capabilities

- Static and dynamic subsurface due diligence
- Review and challenge of STOIIP/GIIP, recovery factors, and development concepts
- Probabilistic reserves and resources assessment (PRMS compliant)
- Production forecasting under development and optimisation scenarios
- Identification of upside, downside, and value erosion risks

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Enhanced Oil Recovery (IOR/EOR)

Integrated EOR Workflow

- Screening and feasibility assessment
- Laboratory studies and rock-fluid interaction
- Reservoir modelling and pilot design
- Surveillance, optimisation, and performance monitoring

IOR/EOR Expertise

- Water flood, gas injection optimisation
- Chemical EOR (polymer, surfactant)
- Gas injection (miscible and immiscible)
- Fractured carbonate EOR
- Incremental recovery and risk quantification

Carbon Capture & Storage (CCS)

Objective

Deliver safe, efficient, and scalable CCS solutions through robust subsurface evaluation and integrated engineering workflows

Core CCS Subsurface Elements

- Storage site screening and ranking
- Capacity estimation and uncertainty analysis
- Injectivity and pressure management assessment
- Containment and long-term integrity evaluation

Reservoir & Geological Focus

- Structural and stratigraphic trap analysis
- Reservoir quality and heterogeneity assessment
- Fault and fracture behaviour under injection
- Caprock integrity and seal risk evaluation

Selection of Projects

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CLIENT	PROJECT	DESCRIPTION
SERICAENERGY	Kyle via Bittern pre-FEED Study	Steady state flow assurance analysis to support the pre-FEED review process for this project
OQ (formerly Oman Oil Company)	Crude Oil Storage Project for Oman Tank Terminal Company at the Ras Markaz Terminal	Integrated pipeline network dynamic study to determine surge pressure and relief valve response during a number of valve closure scenarios that occur during crude loading and offloading operations.
FIRST E&P FIRST EXPLORATION & PETROLEUM DEVELOPMENT COMPANY LIMITED	First Integrated Gas Supply System (FIGSS) Export Pipeline Detailed Design Study	Perform the flow assurance scope, including steady-state, transient analysis and input to operating philosophy, for the FIGSS gas export pipeline
النفط والغاز PETROGAS E&P	Abbey and Baker Flow Assurance and Process Studies	Performed pre-FEED Flow Assurance study to determine operating conditions and methanol requirements for the Abbey + Baker development; Developed an integrated field model of the multi-well development from bottomhole to terminal, including pipeline network; Performed start-up analysis; Methanol system deliverability assessment and field methanol requirements.
ओएनजीसी ONGC	Chandrika & GS49 Fields: pre-FEED and FEED Flow Assurance	Pre-FEED and FEED Subsea Design support (SURF & SPS); Flow Assurance study included Fluid modelling, Steady State Hydraulic Assessment, Hydrate management strategy, slugging assessment, transient assessment (well shutdown/cooldown, depressurisation and start-up). Development of operating and commissioning philosophies and procedures; Chemical injection system design / hydraulic assessments; Corrosion assessment; Scale assessment.
النفط والغاز PETROGAS E&P	Birgitta Field Development	Integrated Flow Assurance Studies for Birgitta development pre-FEED and FEED studies
PERENCO	30inch INDE Export Pipeline (PL22): Flow Assurance Study – Input to Stress Analysis during	Assess the flow parameters in the surface piping, including flow regime, fluid velocities, gas-liquid fraction, and slug volume fluctuations, during steady-state and ramp-up production operations.

Selection of Projects

PETROFLOW INTEGRATED CONSULTANTS

CLIENT	PROJECT	DESCRIPTION
	Steady State & Ramp-Up Operation	
PETRONAS	PROVISION OF PRE-FEED STUDY FOR PETRONAS CARBON, CAPTURE AND STORAGE (CCS) - SOUTHERN	All flow assurance studies for the Southern Cluster CCS Development, which is envisioned to be the first regional and cross-border CCS solution within the Asian province. Study included line sizing, steady state and transient operations.
petroineos REFINING AND TRADING	Finnart to Grangemouth Diesel Transport System Surge Pressure Study	Surge pressure assessments for the re-configured Finnart tanker unloading system and Finnart to Grangemouth pipeline transportation system for importing finished grade diesel (and potentially bio feed stock) through its Finnart terminal.
dana PETROLEUM	EARN Start-up Analysis, Tolmount (Main and East) start-up review & hub methanol partitioning	Cold start-up analysis of the EARN wells to inform the methanol demand. Integrated assessment of the EARN and Tolmount hub methanol system capacity, injection requirements and partitioning. Technical assurance/review of Tolmount East and Main methanol demand and partitioning during steady state operation and start-up.
dana PETROLEUM	Bittern Water Injection Pipeline Replacement: Flow Assurance FEED Study	FEED scope of work to replace the main water injection pipeline between the Triton riser base and the Bittern area. Simulation of steady state cases based on new flow rates and required pressures to help determine the appropriate pipeline size
bp	BP NZT OSBL FEED MOC – Provision of Gas Supply & CO_2 Gathering Pipelines: CO_2 Flow Assurance	Continuation of the previous two study phases reflecting different system design data and third party emitters tied into the system.
bp	BP NZT OSBL FEED Optimisation – Provision of Gas Supply & CO_2 Gathering Pipelines: CO_2 Flow Assurance	Sizing for CO2 pipelines connecting proposed BP H2 Teesside plant to the Net Zero Teeside Power, Capture and Compression site; Sizing for the main Trunkline North of the Tees; Sizing of spur lines; Pipeline size optimisation and Transient Assessment of upset operating scenario cases.
bp	BP NZT OSBL FEED – Provision of Gas Supply and CO2 Gathering Pipelines FEED – Steady State & Transient Flow Assurance: Natural Gas Pipeline	FEED design for the onshore Transportation and Storage component of the Teesside infrastructure to support decarbonisation of industrial stakeholders in Teesside including a new medium pressure CO2 gathering network along with HP compression facilities to transport the collected emissions to the offshore storage site. Steady State and Transient Flow assurance was performed.

Selection of Projects

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CLIENT	PROJECT	DESCRIPTION
Dragon Oil	DRAGON OIL (TURKMENISTAN) LTD: OFFSHORE PIPELINES PIGGING MODELLING FOR NEW PIG DESIGN: Flow Assurance Study	Perform a flow modelling study for the fourteen (14) infield flowlines. Developed an OLGA wax deposition and pigging model and tuned the model based on pigging field data and flow conditions; Utilise the benchmarked model to simulate expected pigging operations and determine the impact of pigging on liquid slug volume arrival at the reception platform; Utilise the pigging model to determine the optimal pigging velocity / sweep efficiency and the flowrate required to achieve this (within the liquid and gas capacity of the facilities), to inform the current bypass solutions such that back-pressure and production loss is minimised, and to inform / support Dragon Oil in developing new pig bypass solutions and design
elecnor enagas	ELECNOR & ENAGAS Flow Assurance Study Phase I and II: Tendrara Gas Field	Flow Assurance study for input to the process facilities FEED. The study comprises the assessment of the steady state, slugging performance and transient operation of the flowlines that interconnect 13 well clusters to the Tendrara Gas Plant Central Process Facilities (CPF) where the gas is treated. Analysis included determination of the MEG requirements for hydrate inhibition, confirmation of flowline sizes, determining operating envelope, turndown, pigging, start-up, ramp and depressurizing assessments.
NPDC	Okono Field Development Plan: (Part 1 of OML 119 Integrated Asset Development)	Production Facilities Adequacy Assessments, Integrated Flow Modelling & Flow Assurance Study and Water Injection Pipeline Design
centrica storage	Rough Field Model Benchmarking and Update for Revised MP Operations Guidance	Performed liquid management/handling requirements for the Rough pipeline operating stages. Study included model development, model benchmarking against observed operating data during normal and sphering operation; Utilisation of the benchmarked model to provide additional operational by reporting the phase residence times, sealine liquid holdup, and sphering frequency, liquid accumulation rate and time to reach the critical/maximum liquid volume in the sealine, the pressure-drop across the defined system as liquids accumulate, slug loadings on slug-catcher inlet pipework, Sealine water phase residence times for comparison against the LDHI expiration time and any potential means of optimising the sphering to make better use of available slug-catcher liquid capacity and reduce sphering frequency.
Mobil Producing Nigeria Unlimited Operator of NNPC/MPN Joint Venture	ASASA B GAS LIFT WITH PIPELINE PROJECT: Flow Assurance Analysis	Fow assurance study performed to confirm the new gas lift pipeline size by performing a hydraulic analysis and transient analyses to inform key gas lift pipeline design parameters

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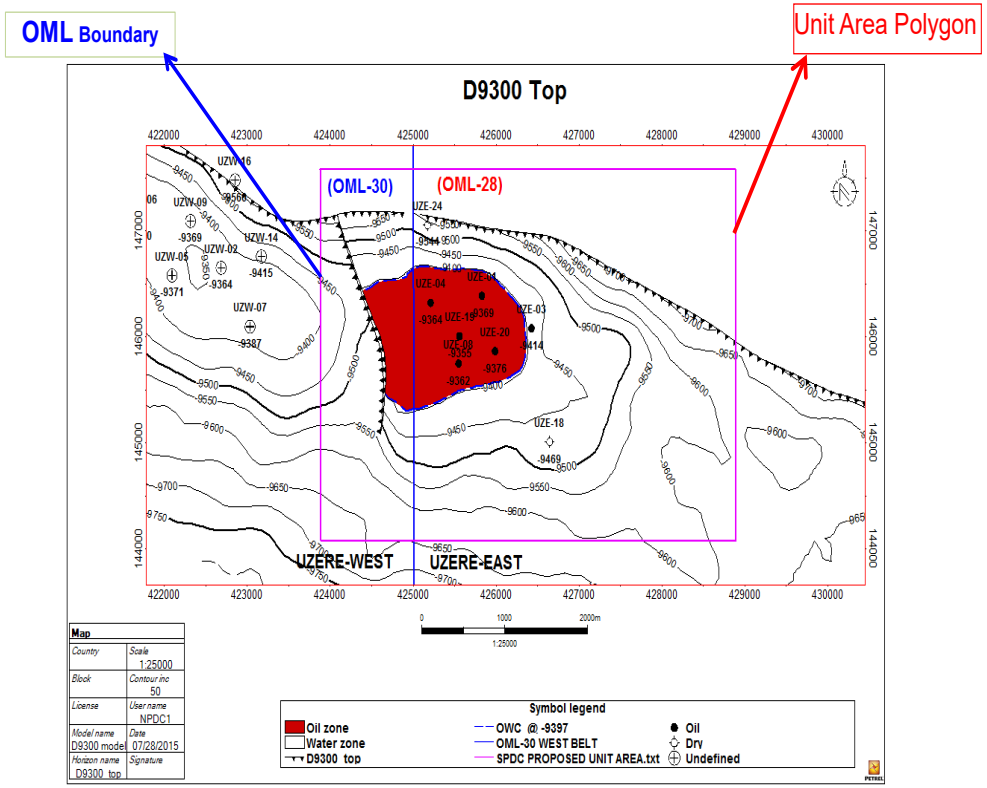
Selection of Projects

- **OMLs 28/30 Uzere-East Unitized FDP Studie Ongoing**
- Sub-Surface (Static and Dynamic)
- Identify Uncertainties
- Identify Potential Short-term gains
- Concept Studies for Uzere-East Full FDP.
- Geomechanics and Well Engineering
- Identify Exploration and Appraisal Opportunities within Uzere East/Uzere West unitized area
- Surface facilities options
- Project Economics
- FDP for Uzere-East reservoirs



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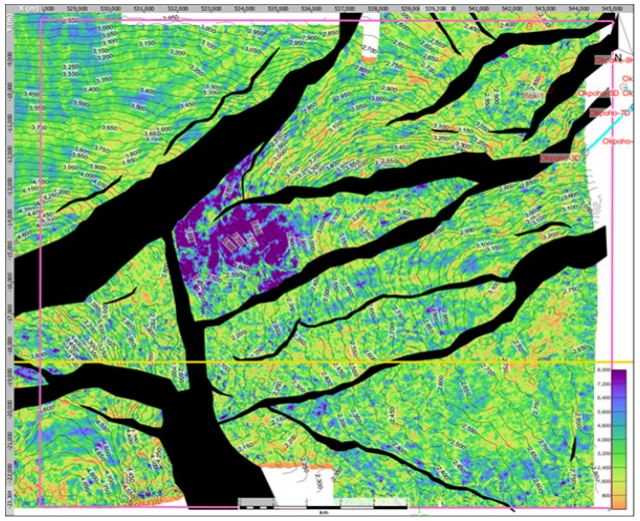
Selection of Projects

OML119 – "A" CLUSTER PROSPECTS – Completed in 2017: Prospect Evaluation & De-Risking Studies



- Re-validate existing prospects and further identify exploratory opportunities with a view to mature prospects for drilling.
- Determined Oil and gas case volumes for all A cluster prospective horizon and estimation of most likely fluid type using inversion results, seismic amplitudes and petrophysical interpretation results from the nearby Okono and Okpoho fields.
- Considered different development cases for low, mid and high case oil volumes for the different prospects; Dynamic models built for the different cases and used in the determination of risked and un-risked resources.
- Results from the technical risk analysis were incorporated into the economic analysis for the individual prospects and entire A-Cluster. The NPV and EMV for OML 119 A cluster prospects were thus generated.

OML119 – Flexible Pipeline FEED and ITT Package Preparation/Support – Completed 2016

- Flexible vs. Rigid pipeline review and assessment
- Pipeline FEED review for flexible pipeline option
- Preparation of Subsea ITT package for Installation Phase

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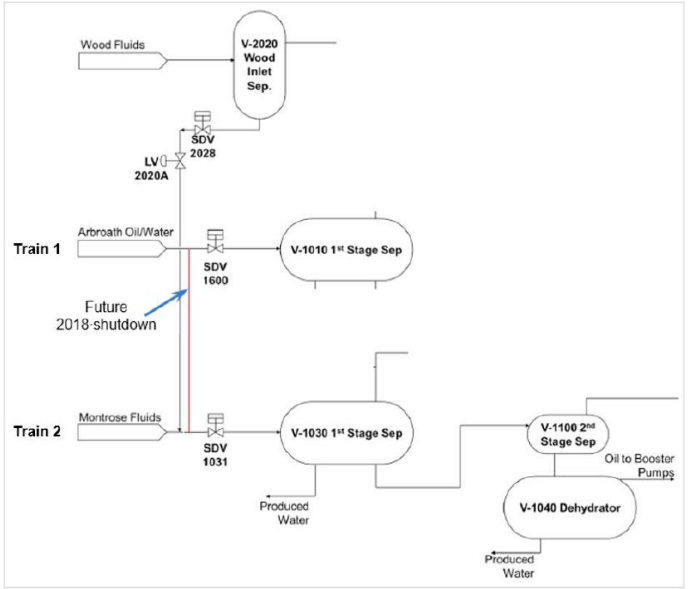
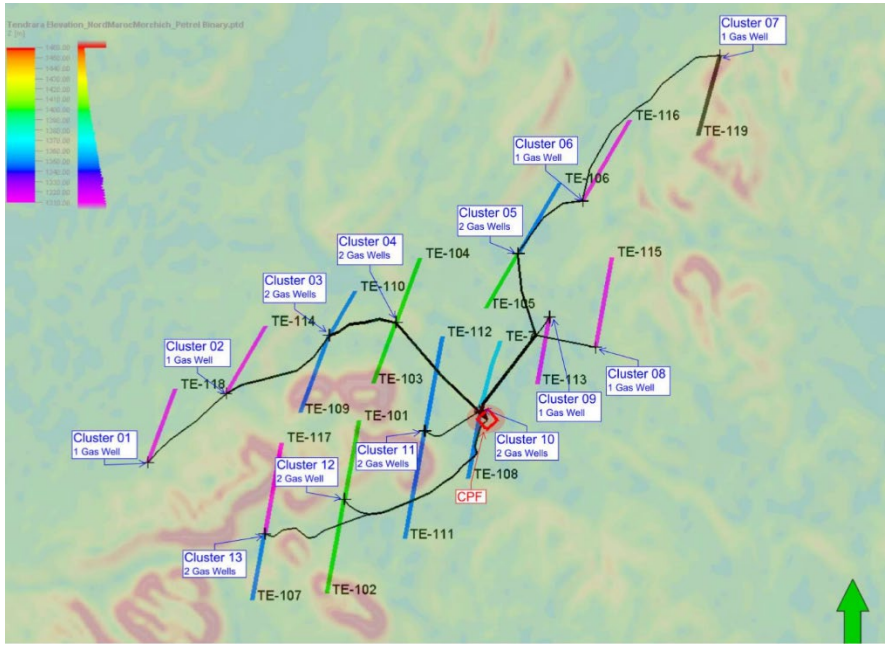
Selection of Projects

Tendrara Gas Development FEED (Sound Energy & Partners; INEGAS / IDOM) – Flow Assurance for 13 flowlines to CPF

- ❑ Full field flowline network design, sizing, thermal performance
- ❑ Pigging philosophy development
- ❑ CPF Slug Catcher Sizing
- ❑ Start-up and shutdown philosophy
- ❑ Flowline Operation Strategy





Montrose Wood Field Design and Operations (Repsol Sinopec UK)

- ❑ Integrated Pipeline and Process System Assessment, Reconfiguration Wood pipeline performance assessment
- ❑ OPPS dynamic Studies and reconfiguration
- ❑ Pipeline Slugging Assessment and management
- ❑ Well Start-up procedure development
- ❑ Methanol partitioning assessment

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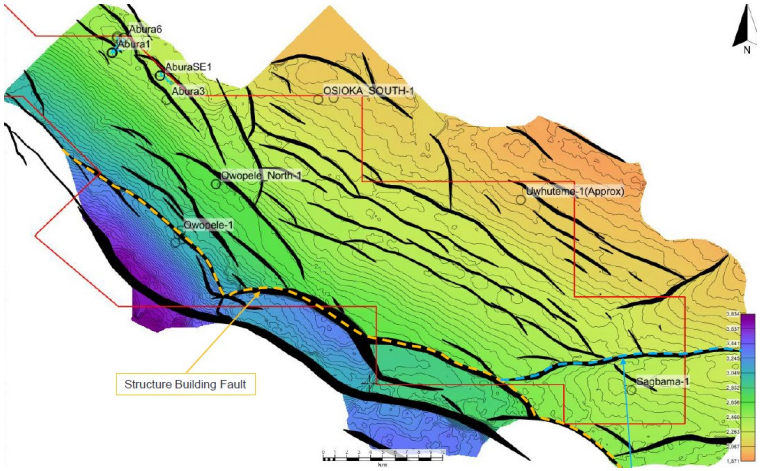
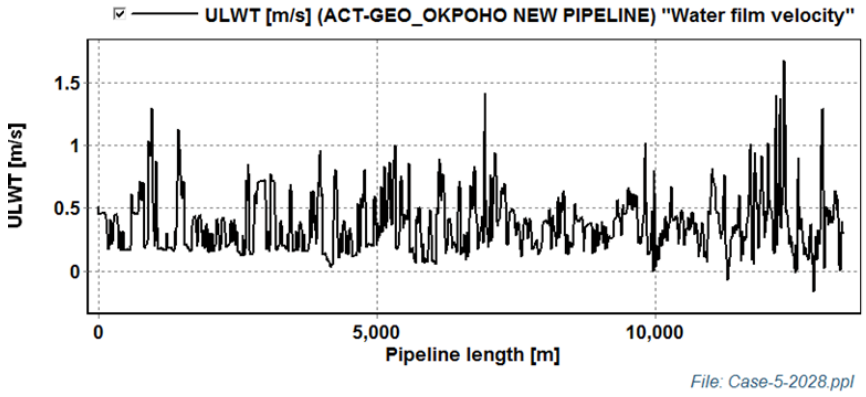
Selection of Projects

OML 65 – PROSPECT EVALUATION – Completed

Technical & economic evaluation of OML65 prospective resources:

- ❑ Field offset data analysis & integration
- ❑ Petrophysical Analysis & Well Correlation; Rock Physics / Seismic Petrophysics
- ❑ Seismic Data Conditioning; Inversion feasibility study and Seismic Inversion; Seismic Interpretation
- ❑ Attribute Analysis (Edge detection, Complex Attributes)
- ❑ Volumetric & Resource Evaluation & Uncertainty Analysis
- ❑ Fault seal Analysis; Pre-drill pore pressure prediction
- ❑ Static Modelling, Dynamic Modelling, Economic Modelling & Valuation; Prospects de-risking and ranking





OML119 – Production & Gas-Lift Pipeline Extended FEED – Completed

- ❑ Determine production and gas-lift pipeline sizes
- ❑ Performed investigation into pipeline corrosion incident
- ❑ Determine the pipeline operating philosophy - pigging requirements, hydrate management, corrosion prevention, slugging management

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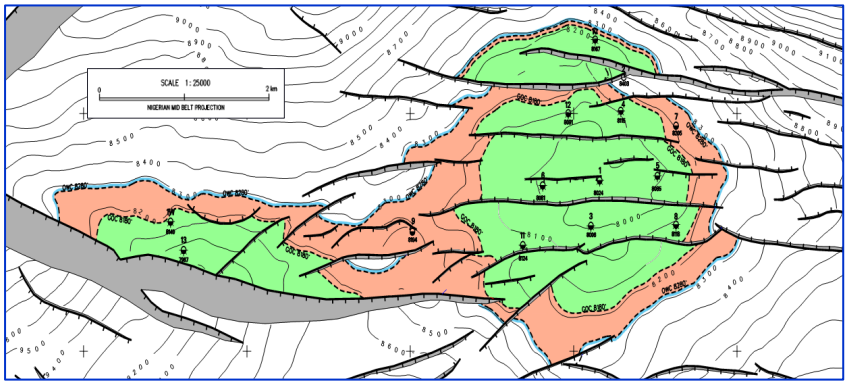
Selection of Projects

- **OML111 – OGPOOC Gas Plant Technical Audit – Completed**

- To carry out a pre-commissioning technical audit of the entire plant
- Review all engineering documentations and confirm adequacy of those elements
- Ascertain the conformity of the generated documents in-line with design basis to the actual plant
- Liaise with DPR and NPDC project management Team to secure License to Operate Approval to regularize the OGPOOC Plant.



OML 13 – Utapate South Project: Opportunity Maturation and Concept Selection Development Study – FDP Completed.

The key objectives are :.

- Sub-Surface (Static and Dynamic)
- Production Technology & Well Engineering
- Surface Facilities options for identified Oil and Gas development scenarios:
- Carry out project Economics evaluation for various scenarios: CAPEX and OPEX
- Produce Oil and Gas Development Plan

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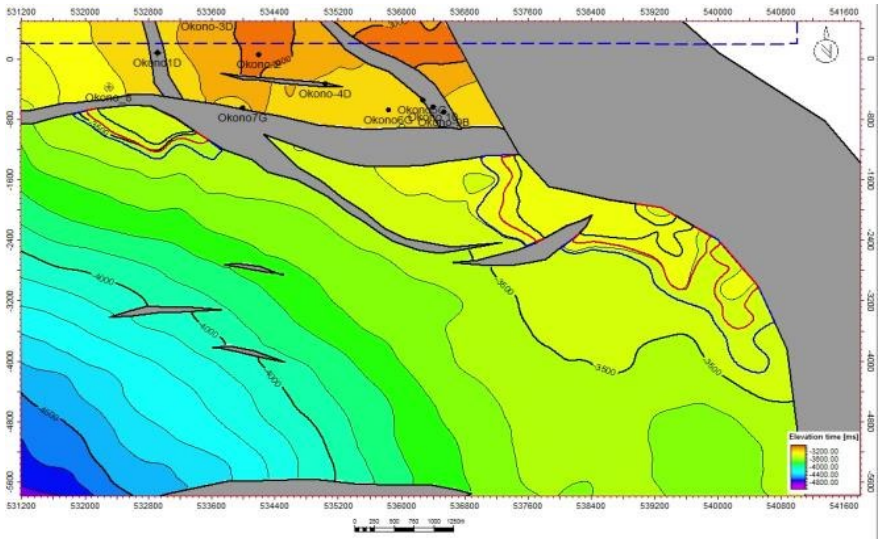
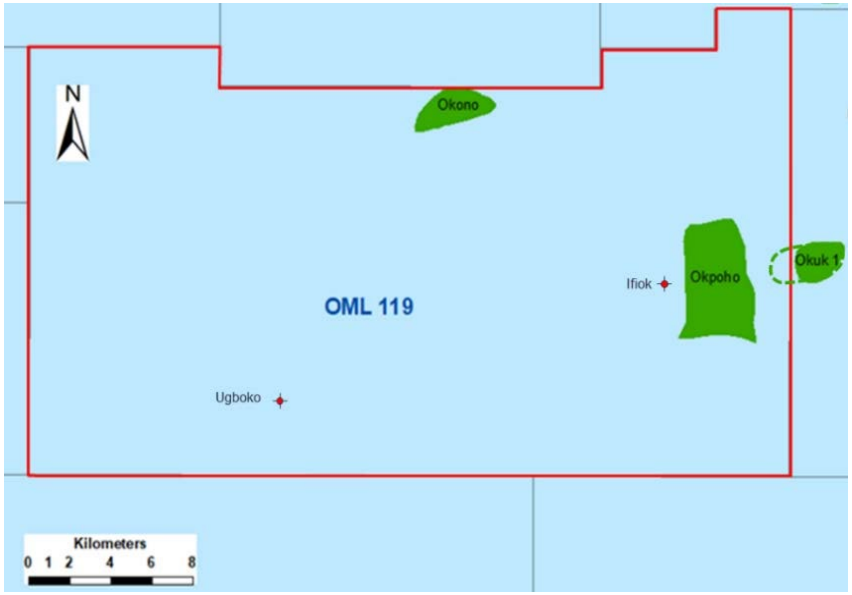
Selection of Projects

- **OML119 – Prospect Evaluation Studies in Okono and Okpoho Area – Completed**
- Field offset data analysis and integration
- Seismic Interpretation
- Velocity & Structural Analysis
- Rock Physics, AVO & Seismic inversion.
- Fault and Pore Pressure Prediction
- Geo-Mechanic uncertainty analysis
- Surface facilities options
- Project Economics





OML119 –Okono/Okpoho Field Development Plan Studies – Completed

The key objectives are :.

- Sub-Surface (Static and Dynamic)
- Production Technology & Well Engineering
- Surface Facilities options for identified Oil and Gas development scenarios:
- Carry out project Economics evaluation for various scenarios: CAPEX and OPEX
- Produce Oil and Gas Development Plan

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Selection of Projects

Carbonate Field FDP & EOR Development – Iraq

Integrated field development planning and EOR optimisation for a complex carbonate oil field in Iraq.
The project focused on subsurface integration, dynamic modelling and development scenario evaluation to support long-term field development and recovery optimisation decisions.

Reserves & Resources Report Update – Gas Assets, Egypt

Independent update of reserves, contingent resources and prospective resources for a portfolio of onshore gas and gas-condensate assets in Egypt.
The work supported regulatory reporting, portfolio assessment and long-term development planning under updated contractual and concession arrangements.

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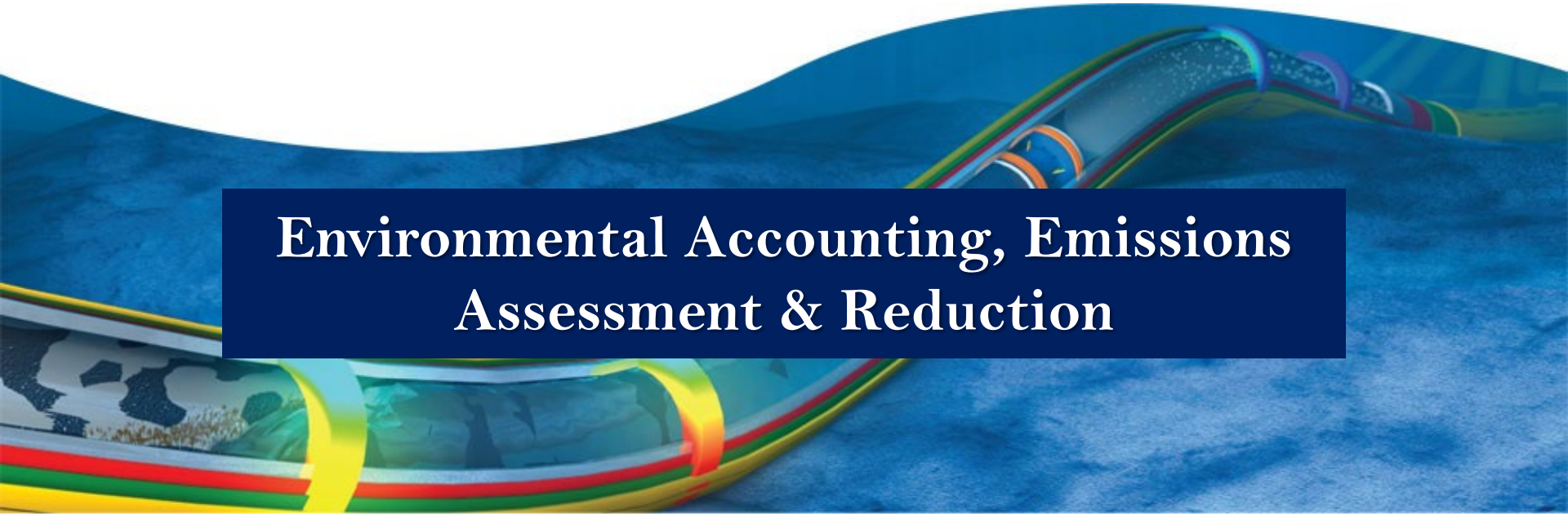

Environmental Accounting, Emissions Assessment & Reduction

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ESG Mission

Our Mission

To support our clients in their emissions reduction journey	**AIM**
Performing environmental footprint & emissions assessment	**Assess**
Leverage our engineering and technology expertise to reduce emission	**Reduce**
Support participation in carbon markets and high-integrity carbon credits	**Offset**
Engineer carbon development projects including CO_2 capture for credits	**More...**

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Service Details

Environmental Accounting / Emissions Assessment

- Scope 1, 2, and 3 emissions assessments
- GHG accounting aligned to the GHG Protocol
- Corporate carbon foot printing and inventory creation
- Compliance reporting for mandatory schemes
- Custom dashboards and disclosures
- Integration with decarbonization and offset strategies

Emissions Reduction Engineering

- Develop an emission reduction plan
- Perform emissions reduction options screening
- Perform an extensive review of emission reduction technologies
- Engineering design of selected emission reduction option
- Implement emissions monitoring strategy

Decarbonisation Advisory Services

- Voluntary market positioning & Carbon market entry strategies
- Offsetting guidance & Access to verified carbon credits from leading registries &
- Regulatory compliance
- Matchmaking between buyers and sellers
- Trade execution & retirement handling

Carbon Project Development Support

- Project origination and feasibility screening
- Design aligned to leading methodologies
- Support for validation, verification & registration
- Partnership building (developers, verifiers, funders)
- Go-to-market planning for credit issuance

Environmental Accounting

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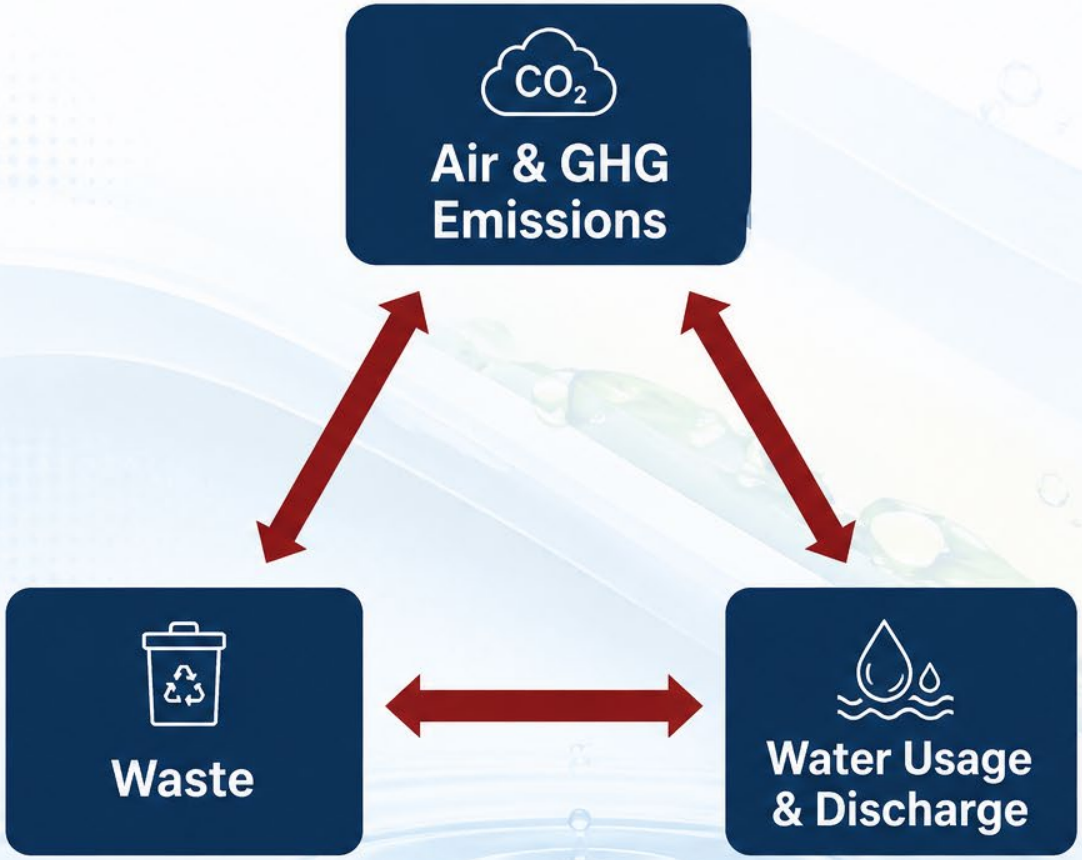

Measure
Quantify environmental impacts accurately.

Manage
Identify hotspots and improve performance.

Report
Ensure transparency and regulatory compliance.

Reduce
Minimise environmental footprint.

Sustain
Support a cleaner, more sustainable future.

Comprehensive accounting. Smarter decisions. Sustainable impact. | INTEGRITY | INNOVATION | IMPACT

Environmental Accounting

Air Emissions

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Scope 1

Scope 2

Scope 2

Services Overview

Emissions Scope

- Scope 1: Source emissions accounting for heavy industries (oil & gas, refining, manufacture, utility, distribution)
- Scope 2: Indirect emission accounting of energy usage (electricity & gas). Renewables zero emissions tracking
- Scope 3: End user emissions tracking and estimates

Emissions & Reporting Models:

- Emissions calculations by local, source or fuel specific emissions factor calculations
- GHGs and over 16 pollutants tracked
- Source types: flares, combustion engines, fugitives and losses, vents, tanks, HFCs, processes
- Uncertainty of emissions determination
- OGMP (Oil and Gas Methane Partnership) CH4 tracking
- Emissions Intensity calculations
- Emissions by shares (financial, equity and operational emission liability calculations
- Global and Regional report presentations and dashboards

Water Usage & Discharge

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Water Usage

Water Discharge

Services Overview

- Water Usage: Fresh water drawn (drilling, production, cooling and other high water usage industrial activities)
- Water Discharge: Water returned and water discharged tracking (cleanout outflows, water-based drilling discharge tracking, produce water tracking

Emissions & Reporting Models:

- Industrial process water used and returned to water bodies: water and contaminant tracking
- Daily data LIMs systems processing
- Discharge near threshold monitoring and standardized reporting
- Emissions intensity tracking
- Emissions and utilization tracking/reporting by consolidated shares

Waste Generation a & Discharge Accounting

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Non- Hazardous

Hazardous Waste

Services Overview

- Accounting for Hazardous/Non-Hazardous Waste Generation
- Accounting for discharge quantities, discharge methods

Emissions & Reporting Models:

- Industrial process waste: upstream, refining, manufacture, renewables and chemical processes waste stream accounting
- Waste material and stream-specific accounting, e.g., oil-based drilling fluid cuttings disposal, water-based cuttings discharge to sea
- Tracking reuse ratios and reduction trends (historical data review)
- Tracking improved life cycle impact (historical data review and trend reporting)

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OUR TEAM

Senior Management Team

Zulkifil Abba Chief Executive Office

B.Sc. Economics, M.Sc. (Dundee; Energy Studies)

Zulkifil Abba is CEO and co-founder of PetroFlow Integrated Consultants. He has 20+ years experience working in the upstream oil and gas sector. Zulkifil's experience includes client interface management, deal initiation, service delivery management, corporate governance & compliance and business development. In the oil and gas sector Zulkifil's knowledge extends from subsurface through to surface and facilities and he has managed the delivery of these services for PetroFlow for over 10 years. In addition to his management skills Zulkifil has a very good understanding of logistics and oil and gas equipment procurement and supplies. Skilled in Petroleum, Gas, Oilfield, Pipelines, and Inspection. Zulkifil holds an MSc in Energy studies with specialization in oil and gas management from The University of Dundee. Zulkifil sits on the board of many other companies in the energy and power sectors and is a keen golfer.

Dr Bishop Falope; Chief Technical Officer

B.Sc. (Ife), M.Sc., PhD (University College London; Chemical Engineering)

Dr Bishop Falope has 22 years oil & gas experience built on a strong academic background and extensive upstream oil and gas experience. Bishop's career started as a post-doctoral research assistant in the area of mathematical modelling of thermodynamics of hydrocarbon systems after his PhD from University College London. Bishop then worked as senior engineer with Schlumberger in their technology centre in Abingdon UK before starting his consultancy career with Genesis Oil and Gas Consultants in Aberdeen where was senior consultant. After founding PetroFlow Bishop has provided technical services to over 30 clients including (Shell, Total, Petronas, Repsol, etc.) in over 10 countries – these include several field development studies in Nigeria. He has also been responsible for technical management and delivery of over 120 projects ranging from small fields to $billion-dollar developments including deepwater, HPHT, long tie-back and gas developments. Experience extends across an oil and gas project development cycle from concept selection, design, subsea equipment construction, start-up, operations support and production optimisation. Other professional activities include technical peer-reviews, energy research, expert witness and provision of flow modelling training courses.

Senior Management Team

Joseph Friday Ekpuk; Chief Operating Officer & Executive Director Business Solutions

B.Eng. (Electrical & Electronics Engineering), MBA (International Business Management Institute, Germany)J

Joseph Friday Ekpuk is COO and Executive Director Business Solutions. He has 20+ years of experience working in the oil and gas sector across Sub-Saharan Africa, Europe and USA. Joseph's expertise includes business development & solutions, strategic leadership, client management, sales management, operations management, and QHSE. He spearheads the implementation of growth strategies, capitalizes on new business opportunities, and establishes robust partnership management frameworks across multiple product lines including Drilling Services, Completions, Well Intervention, Production Optimization, Downhole Tools, and Automation. Joseph strategically leads cross-functional teams of sales professionals and business developers, collaborating with segment business leaders to drive growth and achieve revenue objectives while maintaining exceptional service delivery standards. He oversees the complete tender lifecycle—from preparation through negotiations, contract extensions, and strategic upselling. Joseph has a proven track record of securing over $350 million worth of contracts over 15 years across Sub-Saharan Africa markets and has received multiple service quality awards including Weatherford's Europe & Africa Geozone Top Sales Performer Award. Notably, Joseph made history by securing Angola's first major wireline services contract awarded to a local company—a landmark achievement advancing local content development. His technical oil field services knowledge, combined with hands-on field experience and client management, provides unique insights into both operational realities and business dynamics. Joseph is a member of the Society of Petroleum Engineers (SPE).

Senior Consultants

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Jamie Ross Burnett; BEng (Hons) (1st Class) CEng MIChemE

20 years of experience in the upstream oil and gas industry, covering all stages of design, from concept through to detailed design phases including operational support, in both the UK and overseas.

Worked for large multi-national engineering, procurement and installation contractor as well as some of the industry's leading oil and gas consultancies.

Executed work scopes for a large variety of national and international clients in both process engineering, project management and flow assurance roles.

His technical experience includes leading multi / mono-discipline teams executing brownfield and greenfield projects for both onshore and offshore processing facilities.

Dr Babak Moradi; B.Sc., M.Sc., PhD (Petroleum Engineering)

Subsurface expert with nearly two decades of experience delivering reservoir management, surveillance, reservoir studies, production forecasting, and field development planning (FDP), including IOR/EOR planning and integrated subsurface workflows. Proven track record working with operators in Africa including Sonangol, TotalEnergies, Azule Energy, Addax Petroleum, Dana Gas, Cheiron, Bapetco, and Crescent Petroleum, providing reservoir performance analysis, pressure and contact evaluation, reserves estimation, dynamic simulation, uncertainty and risk assessment, and recovery optimisation to support robust development decisions, maximise recovery, and optimise asset value.

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Dr Ebrahim Heydari; B.Sc. (Geology), M.Sc. (Sedimentology), PhD (Petroleum Geology & Geophysics)

Petrophysicist with 22+ years of experience and worked on a diverse range of exploration and development projects in conventional (clastic and carbonates) and unconventional reservoirs. Contributed to many successful exploration and development projects of world-class oil and gas blocks/fields for international investors and operators in the Middle East, Europe, Africa and Latin America.

Specialist in data integration (log, core, geophysical, geological and reservoir data, etc.) and carbonate reservoirs with a proven track record of successful achievements. With a strong background of geology, sedimentology and geophysics and has delivered astonishing results by data integration which were resulted in adding value to my employers.

Bahram Abolghassemi, M.Sc. Reservoir/Production Geoscientist

Bahram has more than 16 years' experience in the upstream oil and gas industry, He has considerable expertise in all aspects of Reservoir/production Geoscience ranging from 3D modelling, exploration, play assessment, to well planning, completion strategy and workover activities. He is a specialist in carbonate oil and gas fields and 3D fracture evaluation and modelling with experience in North Sea, Iran, Africa, Kurdistan, Kuwait Kazakhstan and other sites. He has modelled many challenging fields including reserve and resource assessments, well positioning and production strategy. Bahram has been Principal Geologist on many CPR (Competent Persons Report) projects.

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Graeme Walker; B.Eng. (Hons.) Herriot Watt, Edinburgh

Process and Facilities engineer with over 16 years oil & gas experience including concept design, FEED and detailed design, operations support, facility optimisation and economic screening and option selection. Experience includes both client roles, reviewing work and steering projects, and contractor / consultant roles, undertaking the design activities. Making recommendations and supporting the client in their aims. Graeme is a Chartered Chemical Engineer and member of the IChemE and proficient in the use of Olga, Pipesim and Hysys and familiar with the Petex modelling suite

Colin McCrae; B.Eng. (Hons.)

Experienced Process & Facilities Engineer with 13 years of varied oil and gas process engineering experience on projects in the UK North Sea and worldwide; Expert in Dynamic Simulation and Operator Training Simulators (OTS). Conducted full life cycle dynamic process simulations from initial model build, to design verification, engineering studies, and conversion to OTS. Fully proficient in Aspen HYSYS and Honeywell Unisim simulation software packages.

Significant Operations Support and Flow Assurance experience working alongside onshore and offshore management, providing process support to production operations and conducting and managing flow assurance studies

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SELECTED CLIENTS

Selection of Clients

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Client Locations
UK*Norway*Russia*Angola*Rwanda*Nigeria*Morocco*Malaysia*India*UAE

COSTAIN

REPSOL

dana PETROLEUM

NETCO
NATIONAL ENGINEERING & TECHNICAL COMPANY

PERENCO

Dragon Oil

CAIRN
WE FUEL AMAZING

Chevron

enagas

bp

Sonangol Pesquisa & Produção

RINA

elecnor

GASMETH

ONGC

REPSOL SINOPEC
Resources UK

TOTAL

centrica storage

Sonangol Pesquisa & Produção

Canadian Natural

Nigerian Petroleum Development Company Ltd
A SUBSIDIARY OF THE NIGERIAN NATIONAL PETROLEUM CORPORATION (NNPC)

OSL Consulting Engineers

Fluid Analysis: Performed to ensure fluid basis is representative * **Steady State Analysis:** For pipe sizing, capacity assessment and thermal performance * **Thermal Analysis:** Determine optimal thermal strategy * **Transient Analysis:** Perform shutdown, depressurisation, ramp-up, start-up, pigging * **Slugging Analysis:** Slugging prediction and management * **Hydrate Management** * Hydrate prediction, prevention and remediation * **Wax Management:** Wax prediction, deposition, removal

Selected Publications

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1. Falope G.B.O. and H. Mahgerefteh, "Modelling transient stresses in spherical vessels during blowdown under fire attack". AIChE J., 49(5), (2003), 1307-1316)
2. Falope G.B.O. and H. Mahgerefteh, 'Modelling ductile failure propagation during blowdown under localised jet fire attack', Journal of Process Mech Engng., Part E, 217, (2003) 93 – 101
3. Mahgerefteh H., G.B.O. Falope and A.O. Oke, “Modeling Blowdown of Cylindrical Vessels under Fire attack”. AIChE J., 48 (2), (2002), 401-410.
4. Falope G.O., A.G. Jones and R. Zauner. "On modelling continuous agglomerative Crystal precipitation via Monte Carlo simulation". Chem. Eng. Sci. 56 (2001), 2567-2574.
5. Falope G.O. and H. Mahgerefteh. “Consequence risk analysis for blowdown of vessels containing two-phase hydrocarbons exposed to thermal radiation”. Proceedings, 3rd Int. Conf on Loss Prevention (Oil, Chemical and Process Industries), Society of Loss Prevention, Singapore, 2000.
6. Falope G.O., A.G. Jones, R. Zauner. “Monte Carlo modelling of agglomerative crystal precipitation”. In Industrial Crystallisation 1999. (IChemE). Cambridge, 13-15 September 1999. Paper 18, p. 19.
7. Modelling Transient Stresses in High Pressure Pipelines Exposed to Extreme Thermal Boundaries. Schlumberger ECA (Europe and Central Africa) Forum (Reservoir and Production Engineering community), Cambridge, 8 – 11 June 2004.
8. Modelling transient heat transfer in pipelines during shut-in – prevention of hydrate formation. Presented at the Schlumberger Mechanical Workshop, Houston, 12 – 14 April 2005.
9. Falope G. B. O and Aluko O. A., “Long-Tiebacks in Deep-Water Environments”, Presented at the Offshore West-Africa Conference, Abuja, Nigeria, Jan 29th – 31st, 2008
10. Falope G. B., Aluko O. A. “Modeling, Simulation Mitigate Flow Assurance Risk”, Offshore Magazine, Volume 68, Issue 4, April 2008.
11. Modelling and Optimisation of Gas Storage and Production Systems, Bishop Falope; Schlumberger Global Forum, Barcelona, Spain, April 2014
12. Operational Flow Assurance – Effective use of OLGA for Replicating and Managing Slugging Systems in Late Field Life Assets, Bishop Falope; Schlumberger Information Solutions Monaco – September 2019

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