EXPRO

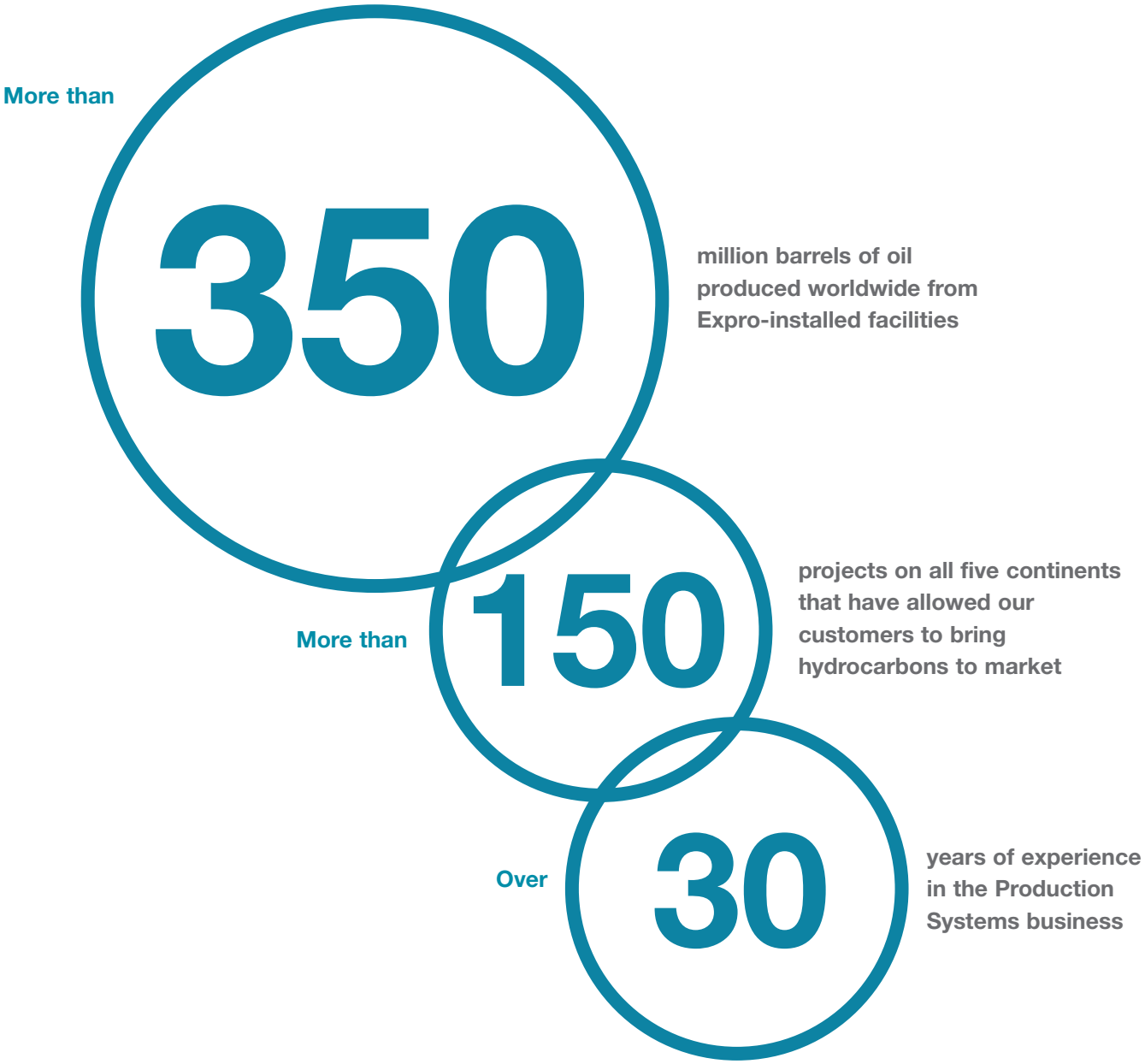
WELL FLOW MANAGEMENT™

Production Systems

www.exprogroup.com

A global leader in fast-track, **cost-effective** and enhanced production solutions.

The production solutions we provide allow our customers to plan the optimal exploitation of their reservoirs.



Production Systems

Expro has been providing Production Systems since 1983, and is recognised as a global leader in the provision of fast-track modular production facilities, delivered on a lease, operate and maintain basis for either short-term or long-term projects.

Our experience in providing Early Production Facilities and Production Enhancement packages allows us to assist our customers across the exploration, development and production phases of their wells.

We can design, install, commission and operate Early Production Facilities and Production Enhancement systems across a range of oilfield developments. Our inventory of equipment facilitates rapid Early Production Facility response and fast-track delivery times.

Our 30-year track record has seen us deliver more than 350 million barrels of oil on behalf of our customers around the world.

We are pleased to offer customers market-leading Early Production and Production Enhancement solutions through the Expro PTI business, which has provided services to the upstream oil and gas industry on an international basis for almost 30 years. A strong local focus has helped establish Expro PTI as a market leader across Asia.

We offer a key range of production solutions, including:

- **Early Production Facilities**
- **Permanent Production Systems**
- **Mobile Offshore Production Units**
- **Production Enhancement packages**
- **Water handling and treatment plants**
- **Seawater injection packages**
- **Production testing, including in-line and extended well testing**

What we offer

Early Production Facilities

Expro is a global market leader in the supply of fast track, modular production facilities; on either a sale or lease, operate and maintain basis.

Early production facilities and fast-track production systems enable Expro's customers to create early cash flow with minimum cash outlay. They also provide real-time production data that enables our customers to appraise reservoir performance before installing permanent facilities.

Our solutions provide our customers with the ability to bring new developments on stream quickly, ahead of permanent facilities being installed, thus offering compelling financial and operational benefits. In addition, our early production facility solutions can be used for small reserves that would otherwise not meet acceptable risk criteria or would be uneconomic to produce with a permanent facility, thereby the EPF in effect becomes the permanent 'life of field' solution.

Other benefits include:

- Through the experience of Expro PTI's combined team, we have an established track record for delivery of EPF projects in timescales that are unrivalled
- Our engineering excellence and operational reliability optimises operator productivity, sustaining us as a provider of choice
- Our EPF solutions are built around modular, prefabricated equipment with reconfiguration flexibility for production optimisation
- They are operated by experienced personnel, with state-of-the-art control and safety systems, including real-time monitoring and data acquisition services

Mobile Offshore Production Units (MOPU)

Expro, in conjunction with marine partners, offers two types of MOPUs. A static MOPU, utilising a converted jack-up drilling rig, or a floating solution (FPSO), utilising a converted oil tanker. Expro typically provides the top-side process package with the marine partner providing the hull for conversion, including the mooring and export umbilical. Expro has considerable experience in integrating the topsides facility as well as providing operation and maintenance for the life of the contract, thereby providing time and cost benefits for our customers.

Production Enhancement packages

Across the world, production has gone past peak oil. With increasing demand and depleting reserves, every oil company is seeking to maximise production.

In mature oil fields, many wells are no longer producing, ie they are idle or producing little oil, not necessarily due to depleting reserves, but due to declining reservoir pressure. Continuous efforts are, therefore, needed to ensure the production from these fields is maximised and the optimum amount of recoverable oil is extracted from these reservoirs.

Production enhancement is an innovative solution that utilises the well unloading concept, using standard well testing equipment. It is unique as it uses existing equipment repackaged as a new solution.

The well unloading packages handle low pressure production, boosting the oil and gas flow rates and processing them for reintroduction into the operator's process plant facilities. Our well unloading packages are flexible and mobile, allowing easy re/deployment. A single unloading package can tie in multiple wells, giving enhanced productivity.

There are distinct advantages of utilising well unloading units. These are:

- Continued production from a well which would not be able to deliver naturally, increased production equals increased revenues
- Ability to tie multiple wells into one well unloading unit, no need for multiple downhole electrical submersible pumps
- Flexibility - can be moved from well to well and platform to platform
- Cost effective - no need to supply a rig or cranebarge for any installations

Water handling and treatment plants

Expro water handling and treatment plants meet all global environmental legislation.

We provide for the safe discharge of produced water overboard with oil-in-water levels below regulatory limits or, alternatively, our water handling and treatment plants can allow for the efficient re-injection of produced water back into the reservoir, subject to an injection well being available.

Seawater injection packages

We offer seawater treatment and injection packages for reservoir water flooding purposes that meet all required global environmental standards.

Gas compression and injection packages

As alternatives to gas flaring, Expro can re-compress gas for export, or inject it back in to the reservoir via a gas injection well.

Production testing, including in-line and extended well testing

Typically, EPFs are installed ahead of permanent production facilities. This early production process provides customers with the opportunity to gather data to better understand the reservoir behaviour and flow regime. This allows for appropriate equipment selection for the final design of the permanent facility, thereby avoiding costly mistakes.

Project execution

Project Management

Each project is managed by an experienced Project Manager. The Project Manager is the customer's principal point of contact during project execution. The Project Manager assembles the project execution team with suitably qualified and experienced personnel to:

- Provide the necessary skills to effectively undertake the work
- Set out clear levels of authority and lines of communication
- Ensure continuity throughout the project

The Project Team prepares and works to the Project Execution Plan. As work progresses, regular co-ordination meetings are held with the customer, the other major contractors and the Certifying Authorities. Effective communication between all parties involved in the Project is a key requirement.

This ensures that:

- All aspects of the work are safely and properly addressed
- Risks are identified, assessed and management plans implemented through the life of the project
- The work is then carried out in a safe and proper manner
- All parties are aware of the objectives and of the work taking place at any point in time

All work is carried out to international codes and standards, making extensive use of existing available process packages, including, where appropriate, modified well testing components. This enables us to provide facilities at low customer CAPEX, adding value to their oilfield assets. Innovative risk and reward terms can also be used to help realise and align customer, contractor and subcontractor goals.

Production Management, Operation & Maintenance

Expro is committed to providing the best quality production management and operations services to our customers.

Expro's personnel are managed, trained and developed to the standards required by the company and the industry. Equipment is operated and maintained by a highly trained competent site crew of engineers, operators and technicians supported by local and regional bases, and by the company's resources.

Management of production, operations and maintenance activities is carried out in accordance with a plan agreed and developed jointly by the Customer and the Project Team. This plan incorporates detailed procedures and regular inspections, performed in accordance with the latest standards, to maximise facility performance, uptime and minimise LTI's.

Engineering & Design

The Engineering team comprises of experienced Engineers, Project staff and Operations personnel. Utilising a range of engineering software, including HYSYS, AutoCAD, FlareSim and MathCAD, they model, simulate and develop the system design for the project, including:

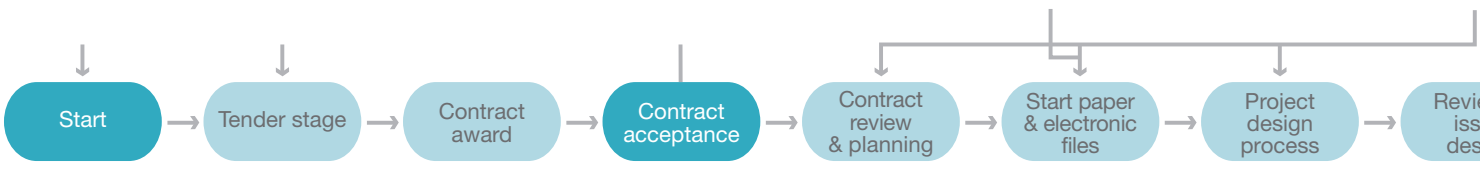
- Front End Engineering Design
- Detailed engineering:
  - Process Design
  - Mechanical Design
  - HazOp/HazID
- Equipment specification and design to the latest international standards and applicable local
- Procurement:
  - New process packages
  - Refurbished process packages
- Optimisation including continuous critical review in an attempt to exceed customer expectation

Installation & Commissioning

Operations personnel are utilised during the pre-commissioning phases to gain familiarity of the process equipment. The knowledge gained can then be used to full effect in order to accelerate the commissioning schedule.

For the installation phase Expro bases a team of trained engineers and operational staff at the site. In order to avoid common delays due to lack of site services, clashes with the site contractors, structural obstructions, craneage problems, etc, this phase is planned in detail, involving both the customer and the Expro Commissioning Team. A full inspection of the site is also completed prior to mobilisation of the equipment.

With our experienced team of in-house operators and engineers, and management and systems to support them, Expro is able to provide our customers with turnkey marine or shore-based systems and services from completion of the well to the point of sale.



Track record

Expro's first major production system was in 1983 when we provided an Early Production Facility (EPF) to Thai Shell for their onshore Sirikit field. Based mainly on modified well testing components, the production system designed, supplied, installed, supervised and operated by Expro had two 10,000 bbl/day separation trains with indirect fired heaters, storage tanks and tanker loading gantries for oil export. Expro delivered the facilities, which included a camp for the field crew, achieving first oil within 10 months of contract award.

Our first offshore production facility was in 1988 when we provided an Extended Well Test (EWT) facility for Occidental's Birch Field in the UKCS. This utilised modified well testing equipment to enable export of stabilised crude oil to a shuttle tanker moored one kilometre away. The facilities produced at rates of up to 12,500 bbl/day over a nine-month evaluation period.

Furthermore, strong strategic acquisitions have added to Expro's global capabilities and track record.

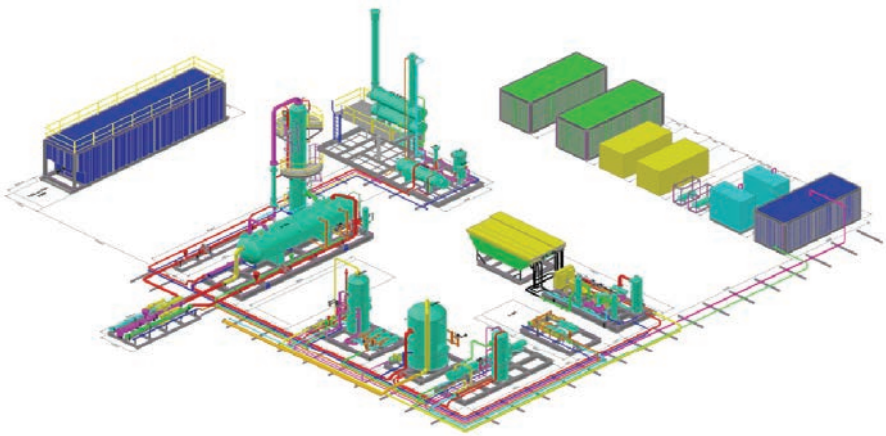
We can now reference projects going back as far as the EWT carried out on Chevron's Casablanca Field, offshore Spain, from 1976 to 1978. More recent projects include the Interim Production Facility for Exxon Neftegas' Chayvo project, designed to export 50,000 bbl/day of oil and 150 MMscfd of gas; the swamp barge mounted facility to receive 50,000 bbl/day of oil and 55 MMscfd of gas at Chevron Nigeria's Dibi Field; Salamander Energy's Kambuna gas EPF, Sumatra, Indonesia, at 4,000 bbl/day condensate and 40 MMscfd; and the MOPU/EPFs on NuCoastal Songkhla Field, Thailand, at 30,000 BOPD and 20,000 BOPD.

Over the last 30 years, operating in some of the world's most remote and hazardous environments, our facilities have delivered over 350 million bbls of oil for our customers worldwide.

Customer benefits

Our premier service portfolio combined with the expertise and experience of Production Systems enables Expro to provide an unrivalled overall service to customers in all parts of the world, with further benefits realised via:

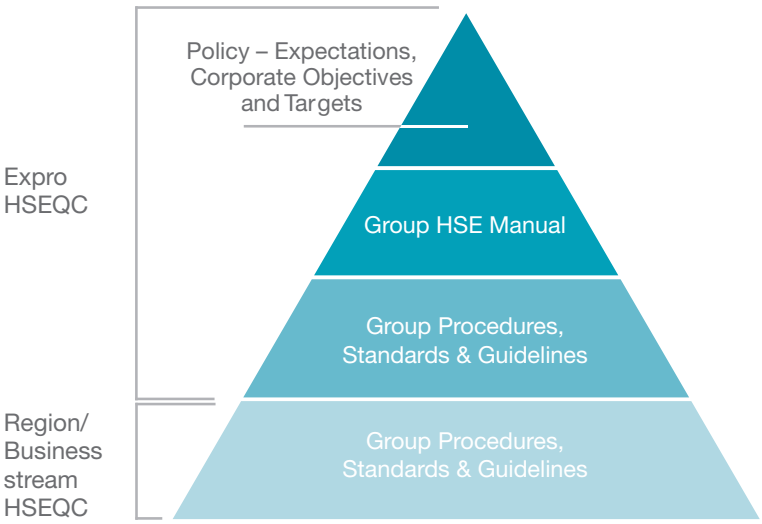
- Credible global industry name and reputation capable of maintaining your licence to operate
- Excellent HSE-QA/QC record and broad understanding of technical and commercial issues
- National and international purchasing with logistical support from our offices around the world
- Highly experienced production team available immediately for site specific projects
- Ability to source or swiftly train to provide the required skilled operations personnel within the project operations schedule
- Continued technical support services to address operational changes and continuous field development
- HSE expertise and knowledge in the creation of site specific Safety Management Systems
- Fleet of Existing Equipment



ew & ue ign → Procurement process → Construction, inspection, assembly → Mobilisation → Installation & commissioning → Handover to operations → Project close out & sign-off → End

Health, safety & environment

Expro's Health, Safety & Environment policies form part of our Corporate Social Responsibility (CSR) strategy. This aims to prevent harm to people or the environment as a result of our operations, whilst interacting favourably with local communities.



In order to ensure this goal is achieved, Expro's Chief Executive has defined Health, Safety and Environmental (HSE) requirements for the company. These policies are reviewed annually by the Board, and a CSR Report prepared to present details of the group's performance worldwide. As part of the Policy and Expectations, the group's HSE Management System ensures that a planned and systematic approach is taken to drive continuous improvement.

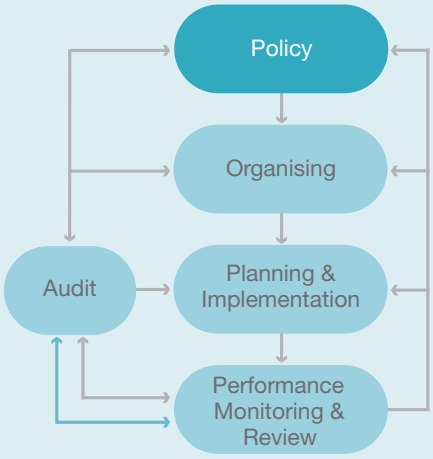
Quality Assurance

Our primary objective is to ensure that all services provided for, or on behalf of, Expro safely fulfil their stated contractual requirements and are provided at the agreed time, every time.

Quality is fundamental to our business success and we are all committed to ensuring that we each play our part in ensuring this objective is achieved. In order to achieve this objective we operate to a Quality Management System (QMS), maintained by Production Systems. All personnel have responsibilities under the QMS and are actively encouraged to contribute to the development and improvement of the system.

HSE policy

- Provide a safe and healthy workplace
- Proactively identify, eliminate or minimise any potential sources of harm to people or the environment arising from our activities
- Ensure our staff and contractors are provided with the necessary information, instruction, training and supervision to enable them to work without causing or sustaining harm
- Define objectives and targets for HSE performance for the group
- Manage and maintain effective management controls to achieve our HSE objectives
- Measure and monitor performance against HSE objectives
- Work towards the continuous improvement of our HSE performance



Early Production – Case studies

Salamander Energy Ltd - Kambuna EPF, Sumatra Indonesia

Project Overview

Expro PTI undertook early in 2009, the complete turnkey supply of an onshore EPF facility, located at Pakalan Brandan, North Sumatra Indonesia. The facility was designed as a complete “stand alone” onshore oil and gas processing facility including Oil and gas Separation, Gas Compression, Gas Dehydration and metering, Condensate stabilization and pumped export via a 20km pipeline, power utilities, firewater system.

The design production rates for the plant are 40 Mmscf/d and 4000 BCPD respectively.

The project was mobilized within 16 weeks from our Batam Yard facility, and was installed, ready for production within 20 weeks overall from Contract award.

Expro PTI ongoing services include the complete operational manning for the facility, design and logistic support, utilities, maintenance etc.

All elements of the project were completed wholly by Expro PTI staff, other than pressure vessel fabricators for vessel refurbishment work. No other major contractors were employed on the project.

NuCoastal (Thailand) Ltd - Songkhla “A” and Songkhla “B” MOPU developments

Project Overview

Expro PTI undertook earlier this year, the complete turnkey supply, including the supply of the Jack-up Rig 'Soraya' for an offshore MOPU development on the Songkhla A oilfield located in the southern end of the Gulf of Thailand.

The initial project requirements were for a very rapid mobilization of the MOPU with installed process facilities within a six week period. The equipment was mobilized out of our Batam facility and installed on the MOPU within 4 weeks. The MOPU was then dry towed to location. The initial design requirements were for 15,000 BOPD and approximately 3mmscf/d associated gas. Associated gas is flared and stabilized crude being pumped to an adjacent moored FSO Tanker. Production commenced from the MOPU 8 weeks after instructions were received to mobilize the MOPU. Expro PTI provided full operations crew for the MOPU and production operations.

The first phase of the Songkhla A

project did not include water treatment equipment as only small quantities of produced water were anticipated which were planned to be stripped out at the FSO tanker.

Expro PTI has since received a major contract scope expansion which includes for an offshore replacement of the current facilities with a 30,000 BOPD process

package including water treatment for well injection, gas treatment for fuel gas usage, Test Separator package and other system enhancements including upgrades and changes to the MOPU facilities. This has come with a contract extension and the concept to use the Songkhla A MOPU as a Central Processing Platform (CPP) for the entire field development.

In addition to the work on Songkhla A, Expro PTI has completed mobilization and installation of a second 20,000 BOPD process package which has been installed on a second MOPU (Workships Seafox 6).

Expro PTI has worked closely with the candidate MOPU supplier and the Classification Society to address all Class issues associated with integration of the process facilities on the Vessel. Expro PTI provided installation and hook-up supervision of the process facilities onto the MOPU whilst in a Singapore conversion Shipyard.

This facility includes oil, gas and water separation, flaring, fuel gas treatment, oil, water and gas metering and two phase pumping of well fluids back to the Songkhla A MOPU.

Expro PTI ongoing services will include the complete production facilities operational manning for the facility, design and manpower logistic support, maintenance.

Case studies

Bourbon Opale FPSO Topsides – Pemex, Mexico

In December 2003, Expro was selected by Bourbon Offshore to supply the topsides process facility for their FPSO, the Bourbon Opale. The vessel, being provided for a Pemex contract in the Gulf of Mexico, was designed to produce the well fluids on Pemex's well testing and well clean-up operations on multiple fields.

The process equipment was manufactured in Great Yarmouth, UK and then transported to the Aker Langsten yard in Norway. The topsides process facility was then installed at the shipyard location.

For this fast-track project, the schedule required the process topsides to be engineered and fabricated by 20 April 2004 with an anticipated sail out date in early May 2004 – a total period of less than 24 calendar weeks from the contract award.

Location	*Offshore Mexico*
Type	*Oil Production Facility on FPSO*
Contract Awarded	*December 2003*
Equipment Mock Hook-up	*April 2004 dockside UK*
Equipment Installation	*April/May 2004 at yard in Norway*
Equipment Commissioned	*June 2004*
First Production	*July 2004*
Duration of Contract	*Equipment sale*
Design Overall Flowrate	*10,000 bpd*
Design Oil Flowrate	*10,000 bpd*
Crude Oil Properties	*14 to 43° API*
Design Water Flowrate	*5,000 bpd*
Design Gas Flowrate	*26 MMscfd to flare*
Number of Wells	*Multiple fields*
Export System	*Via hull storage tanks*

Logbada EPF - Cameroon

- Fast-track delivery of EPF for Victoria Oil & Gas, Cameroon
- 20 MMscfd gas / day
- 600 bcpd
- Awarded 2011
- Equipment delivered, installed & commissioned within six months.
- 24 months operations & maintenance contract

Case studies

IPF – Exxon Neftegas, Chayvo Field, Sakhalin Island

In March 2004, Expro was selected by Exxon Neftegas Limited (ENL) to supply, build, install, commission and operate a 50,000 bbl/day, 150 MMscfd Interim Production Facility (IPF) for the Chayvo Field in far eastern Russia. The IPF was provided on a lease, operate and maintain basis.

The contract was based on a 14-month period of operation and would run until completion of the permanent Onshore Production Facility (OPF) on Sakhalin I, due in September 2006.

Expro's track record in delivering such projects on schedule was the key in this award. Even so, the project was particularly challenging due to the combination of remote location and harsh environmental conditions at site. This required detailed logistics management involving shipment by road, rail and sea.

Project management, engineering and procurement for the project were co-ordinated out of Expro's Houston office. This was convenient for ENL's project team and cold weather equipment vendors in the USA and Canada.

Certification, licensing and permitting for the production facility were critical for this project, and were a joint effort between Expro, ENL and the Russian certification authorities.

The IPF was mechanically complete and first oil delivered by the end of July 2005. Operation and maintenance was carried out by Expro using locally recruited personnel and expatriate supervisors. All personnel were trained and certified according to Russian regulatory requirements.

Expro subsequently received a letter of commendation from ENL in recognition of the excellent job performed on this project.

Location	*Onshore Sakhalin Island, Russia*
Type	*Oil & Gas Production Facility*
Contract Awarded	*April 2004*
Equipment Mock Hook-up	*September to December 2004*
Equipment Installation	*January to July 2005*
Equipment Commissioned	*May to September 2005*
First Production	*October 2005 (oil), September 2005 (gas)*
Duration of Contract	*14 months LOM*
Design Overall Flowrate	*50,000 bpd*
Design Oil Flowrate	*50,000 bpd*
Crude Oil Properties	*39° API*
Design Water Flowrate	*5,000 bpd*
Design Gas Flowrate	*150 MMscfd to export*
Design Water Injection	*5,000 bpd produced water disposal*
Number of Wells	*2 (interim production)*
Export System	*Pipeline*

Swamp Queen FPF/EPF – Chevron, Dibi Field, Nigeria

In 2005, Chevron selected Expro to supply a fast-track, fit-for-purpose Early Production Facility (EPF) for its Dibi concession in Nigeria. The EPF is mounted on the Swamp Queen barge, operating in block OML 49, northwest of Chevron's Escravos terminal in Nigeria. Processing capacity is 60,000 bbl/day.

The project was executed on a staged basis, starting with a FEED study to develop the EPF requirements. This resulted in a contract award for supply of the EPF, including conversion of the barge into a full Floating Production Facility (FPF), with design, procurement & fabrication of the equipment modules, installation on the barge, commissioning at site, and operation & maintenance for two years. Associated offsite activities were also carried out including design, procurement & fabrication work for pipework and pipe supports, installation of this equipment, commissioning, and sand pad dredging and installation.

The FPF is a complete self-contained unit with 36-man accommodation module and helideck. Processed crude is exported via flowlines to the Escravos terminal, with the gas utilised as fuel or being flared. Produced water is disposed of by re-injection.

First oil was achieved in mid-2007.

Location	*Niger Delta, Nigeria*
Type	*Floating Production Facility for Early Production*
Contract Awarded	*2 May 2005*
Equipment Mock Hook–Up	*Installed on barge*
Equipment Mobilisation to Site	*December 2006*
Equipment Commissioned	*Mid-2007*
First Production	*Mid-2007*
Duration of Contract	*2 years LOM*
Design Overall Flowrate	*60,000 bpd*
Design Oil Flowrate	*50,000 bpd*
Crude Oil Properties	*20 to 40° API*
Design Water Flowrate	*10,000 bpd*
Design Gas Flowrate	*55 MMscfd to flare*
Design Water Injection	*100,000 bpd*
Number of Wells	*2 feed lines from approx. 30 wells*
Export System	*Pipeline*

Case studies

Rowan Gorilla VII MOPU Topsides – Tuscan Energy, Ardmore Field, UK

The project was awarded in September 2002 to supply the topsides process facility for redevelopment of the Ardmore field, UKCS, on a lease, operate and maintain basis. The contract was based on a two-year period of operation. The topside facility was placed on the Rowan Gorilla VII jack-up as a mobile offshore production and drilling unit.

Completed in early June 2003, the facility was shipped to McNulty Offshore's yard for installation on the Rowan jack-up before the rig departed for the field.

First oil was achieved ahead of schedule on 27 September 2003, with well fluid production rates of up to 22,000 bbls/d. Expro's process facility then stabilised and conditioned this produced crude on the jack-up MOPU. By using two mooring buoys Tuscan was able to maintain production throughout the shuttling operations.

Tuscan Energy's CEO recognised Expro's and the other contractors' efforts on the project by saying: "We've given them a lot of responsibility, access to (financial) upside in the project and, to a man, they have performed."

"Achieving production again from this field is a tremendous boost for the North Sea and is an indication of what is still possible in this area through innovative thinking and utilisation of the latest available technologies."

Location	*Offshore UK*
Type	*Oil Production Facility on MOPU*
Contract Awarded	*September 2002*
Equipment Mock Hook-up	*May to June 2003*
Equipment Installation	*June to September 2003*
Equipment Commissioned	*September 2003*
First Production	*27 September 2003*
Duration of Contract	*2 years*
Design Overall Flowrate	*60,000 bpd*
Design Oil Flowrate	*40,000 bpd*
Crude Oil Properties	*39° API*
Design Water Flowrate	*50,000 bpd*
Design Gas Flowrate	*10 MMscfd to flare*
Number of Wells	*4 (phase 1)*
Export System	*Shuttle tankers*

ESP 1 MOPU EPF – Shell, Soroosh Field, Iran

Shell Exploration BV was selected by the National Iranian Oil Company (NIOC) to develop the Soroosh and Nowrooz oil fields, lying in around 30-40 m water depth, located 120 km offshore Iran.

In June 2000, Expro Swire Production Limited was contracted to supply and operate an early production facility which was required ahead of permanent facilities on the field. Scope included the supply, installation and operation of a Mobile Offshore Production Unit (MOPU) alongside the field's new production jacket at Soroosh. The facility was required for a period of 20 months before installation of the permanent field infrastructure, and had the capacity to produce up to a maximum of 100,000 bbl/day.

The ex-Mansal 'Muna' MOPU was acquired, renamed 'ESP 1' and mobilised to Dubai for conversion. The vessel was recertified and machinery zero houred.

Modifications included a water injection facility capable of 50,000 bbl/day, as well as process upgrades to handle the Soroosh well fluids. This work was complete in under 32 weeks.

Flexibility in Expro's approach meant a number of important design and engineering changes could be made without affecting the schedule. Additional workscope included addition of a 500 tonne power generation module, complete with eight 1MW Aggreko diesel generators and 11 kV high voltage switchgear, to meet the requirements of a revised ESP design. A temporary wellhead deck was also procured, fabricated and installed at location to allow the wellheads to be supported from the ESP 1 until installation of the permanent deck four months later.

As a result, Expro's fast-track, marine-based, turnkey ESP 1 production MOPU allowed Shell to achieve production earlier than would otherwise have been possible. Uptimes in excess of 98% were maintained throughout the life of the project, whilst the crew also achieved two years operations without a Lost Time Injury.

Location	*Offshore Iran*
Type	*MOPU*
Contract Awarded	*June 2000*
Equipment Mock Hook-up	*August to September 2001*
Equipment Installation	*July to September 2001 on ESP-1 MOPU*
Equipment Commissioned	*Commenced 13 October 2001*
First Production	*14 November 2001*
Duration of Contract	*2 years*
Design Overall Flowrate	*100,000 bpd*
Design Oil Flowrate	*100,000 bpd*
Crude Oil Properties	*15 to 20° API*
Design Water Flowrate	*N/A*
Design Gas Flowrate	*10 MMscfd to flare*
Design Water Injection	*60,000 bpd*
Number of Wells	*4 (early production phase)*
Export System	*FSU*

Case studies

Kodeco Energy Ltd. - Poleng Field MOPU, Offshore Indonesia

Expro PTI provided a 30,000 BOPD Oil Production Facility, which was installed on the jack-up platform, 'Taurus'. We were contracted on a 'life-of-field' basis. The facilities were contracted for a period of 12 years.

This project was undertaken on a turnkey basis, and we were responsible for conceptual design, equipment preparation, equipment installation, commissioning and start-up. Process Design - 30,000 BOPD, 3,000 BWPD, 10 MMSCFD Gas.

Process System

- *Production Separator; 3-phase horizontal, 42” OD x 10' S/S, 1,440 psi WP*
- *Test Separator; 3-phase horizontal”, 36” OD x 9' S/S, 285 psi WP*
- *HP Knockout Drum; 75” OD x 12' 6” S/S, 100 psi WP*
- *LP Knockout Drum; 75” OD x 12' 6” S/S, 100 psi WP*
- *Fuel Gas Scrubber; 30” OD x 7'6”, S/S, 100 psi WP*
- *Settling Vessel; 36', 100 psi WP*
- *Second Stage Separator; 66” OD x 12'6”, 100 psi WP*
- *Stabilizing Vessel; 66” OD x 12'6”, 100 psi WP*
- *Stabilizing Reboiler; 15.032 mmbtu/hr*
- *Reboiler / Exchanger; 7.42 mmbtu/hr*
- *Heat Exchanger / Production Cooler; 11.384 mmbtu/hr*
- *Cool Water Pump; 2,500 GPM*
- *Flare Boom; 60ft long, HP and LP Flare tips*
- *Production Pump; 10,000 bpd capacity @ 150 psig WP*
- *Sump Pump*

Thai Shell - Nang Nuan Offshore Early Production System

In association with Swire Pacific Offshore, Expro PTI were contracted for the turnkey supply of a Floating Production Unit (FPU), including all operations (marine, process and wellhead) and including maintenance of the field facilities and shuttle tanker management for cyclic production from the Thai Shell Nang Nuan Offshore field.

The project which was commissioned in 1993 completed in August 1997.

Supply Boat

- *5 point spread mooring x 3” chain legs with embedment anchors Moored*
- *Equipped with full Fi-Fi systems and auxiliaries to support the process plant including:*
  - *200'x 6” ID Coflexip Production Hose*
  - *6” ANSI 600 Gall Thompson marine breakaway coupling*

Process Design

- *Wellhead Platform, 12,000 BOPD, 250 BWPD, 5 MMSCFD Gas. Wellstream cooler package*
- *Extreme flowing conditions (400 ppm H2S, 40% CO2 and 130 degC FWHT).*
- *Flowline; 7” flowline assembly c/w adjustable choke and instrumentation*
- *QCDC; Quick disconnect at flowline riser MSL*
- *Wellhead control system*

Process System

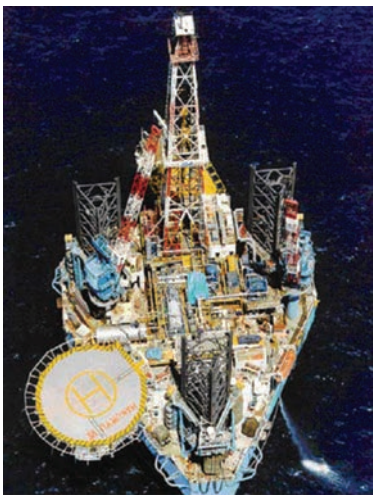
- *Inlet Manifold; 4”, 600# RF*
- *Production Separator; 3-phase horizontal, 54” ID x 10' T/F, 275 psi WP*
- *Flare KO Drum; 3-phase horizontal”, 36” OD x 12' 6” S/S, 600 psi WP*
- *Heat Exchanger; 8.0mm btu/hr, 1,440 psi WP c/w twin fan assisted air cooler*
- *Crude Oil transfer Pump; Twin 8,000 bpd @120 psig WP*
- *Flare KO Drum; 42” OD x 10' T/T, 1,440 psi WP*
- *Flare Booms; 2 x 6” gas flare line, 55 ft long*

Export System

- *Shuttle Tanker; 40,000 DWT shuttle tanker with full IG blanketing and cargo heating*
- *Export Manifold; 6”*
- *Marine Hose; 150m x 6” Dunlop Selflote Hose*
- *Breakaway Coupling; 6” ANSI 150# Gall Thompson Marine Breakaway Coupling*

Case studies

Ampolex Australia - Wandoo 'A' Development



A comprehensive 16,000 BPD Early Production Process System installed onto the Ampolex jack-up rig 'Hakuryu VII' in Dampier, Western Australia, in late 1993. This system was later modified to process up to 28,000 BFPD. The facilities were initially installed to complete a 120 day EWT phase followed by EPF operations if proved commercial.

Production Testers Australia managed all third party contractors involved in the design of the completely new process facilities, built under strict quality control to the Clients fully detailed specification requirements.

This system was based on 3 stage separation train and included, separators, electrostatic coalescer, steam generation plant, plate heat exchanger and shell and tube exchangers in a complex and efficient heating system for the problematic 19 deg API crude.

Water processing was based on use of corrugated plate interceptor and a gas flotation units in series. The water disposal system was designed to handle 5,000 BPD. This was later upgraded to 12,000 BPD. Water was disposed directly to the ocean at less than 15 mg/l specification.

Strict environmental quality specifications were met and exceeded.

Project Overview

- *The facilities included an advanced automated control system that used state of the art R.F. frequency, level and point transmitters integrated into an Allen Bradley programmable controller (P.L.C.) for process measurement and control. User friendly access to the control system was achieved via a graphic user interface (GUI) DMAC.. Major process items were displayed on HMI units with real time display of pressure, temperature and flows, both oil and gas, given in both graphical and analogue display.*
- *The system was commissioned in October 1993 and remained onsite until the end of December 1996.*

Maersk Oil Qatar - Al Shaheen MOPU, Qatar

Project Overview

In conjunction with our joint venture partners, Swire Pacific Offshore, Swire Production Testers (SPT) was awarded a contract by Maersk Oil Qatar AS. The contract was for the provision of a jack-up production unit (MOPU) installed at the Al Shaheen C location, Block 5 offshore Qatar.

The facility used the refurbished ex drilling unit Cliffs Drilling No.10 which was chartered to SPT by Cliffs Drilling Inc. The facilities provided had a design throughput capacity of 60,000 bopd\100MMscfd gas. The MOPU

operated with an uptime in excess of 99.5%.

On behalf of SPT, we designed the facility at our Perth office, and undertook the entire project management phase including procurement, facility construction and installation, hook-up, commissioning and operation.

The complete facility was hooked up and commissioned June 1997 only seven months after the contract award was issued by Maersk.

SPT leased and operated the facility for Maersk on a turnkey basis. Expro PTI had a subcontract with SPT for the provision of all production personnel to the project.

We were responsible for senior level management of the contract and all production operations under the contract.

Swamp Queen EPF – Shell, Tunu/Ogbotobo Fields, Nigeria

The Swamp Queen was first commissioned for Shell Petroleum Development Company (SPDC) in 1995 when an ex-Santa Fe drilling barge was converted by Expro into a 20,000 bbl/day floating production facility for the Tunu Field.

Two years later SPDC commissioned an upgrade to the facility to produce 50,000 bbl/day. The new topsides equipment was installed on the Swamp Queen with contract award to first oil within 17 weeks, including accomplishing the retrofit in a record 14-day shut down period.

The facility was originally stationed on the Tunu field, but was re-deployed (by Expro) to the Ogbotobo Field in 1997. After five years of production for SPDC in the Niger Delta, the Swamp Queen FPF was shut down in 2001 and cold stacked in Port Harcourt until being decommissioned in 2002. The 50,000 bbl/day topsides were removed and returned to Europe ready to be utilised on another production facility.

Location	*South Forcados, Niger Delta*
Type	*Floating Production Facility, Swamp Location*
Contract Awarded	*April 1995 (Extended November 1996)*
Equipment Mobilisation to Site	*September 1995*
Equipment Commissioned	*September 1995*
First Production	*October 1995 & November 1997*
Duration of Contract	*5 years*
Design Overall Flowrate	*45,000 bpd*
Design Oil Flowrate	*45,000 bpd*
Crude Oil Properties	*20˚ API*
Design Gas Flowrate	*65 MMscfd to flare*
Number of Wells	*7*
Export System	*Pipeline*

EPF – Agip, Zinnia Field, Tunisia

In 1995 Agip awarded a contract to Expro for the supply of an Early Production Facility (EPF) as part of the Zinnia project, onshore Tunisia.

The EPF was required to treat well fluids from up to two wells, separating and processing the fluids to meet the required export specifications for gas, exported by pipeline, and crude oil, exported by road tanker.
The EPF was provided on a full turnkey basis to the client, including design, engineering, installation of the equipment, commissioning, start-up and operation by Expro personnel. At the end of the lease, operate and maintenance (LOM) contract, Agip exercised their option to purchase the facility.

Location	*Onshore Tunisia*
Type	*Oil and Gas Production Facility*
Contract Awarded	*1995*
Equipment Mobilisation to Site	*4 Months after award*
First Production	*8 Months after award*
Duration of Contract	*Turnkey LOM + sale option*
Design Oil Flowrate	*285 bpd*
Design Gas Flowrate	*7 MMscfd*
Number of Wells	*2*
Export System	*Gas by pipeline/oil by road tankers*

Production enhancement – Case studies

Well Unloading For Chevron On Various Fields Throughout Thailand

- Chevron originally identified a number of candidate wells that were unable to flow through the production facilities due to low well flowing pressures.
- By installation of bespoke packages of equipment, including multi-well manifolds, separation equipment and high volume / pressure pumps, Expro PTI was able to flow multiple wells into single unloading packages allowing produced oil to be pumped back into the production line at normal line pressure.
- Expro PTI supports each well unloading package in the field with a full crew of operators and supervisors, providing 24 hour operational coverage and maintenance support.
- The initial contract commenced in 2004 and is currently firm through to 2014.

Benefits to Chevron

- PTI's operations team delivers packages to Chevron in timeframes no other service provider can match, typically within 12 - 16 weeks.
- Well flow enhanced, resulting in significantly improved economics for the client.
- Typical platforms have shown increases in production varying from 700 bopd up to 5000 bopd. Introducing gas compression, reduces gas venting and retains gas production in the range 0.5 - 2.0 MM scfd.
- If produced gas is used for gas lift, this can enhance the production still further for even more wells on the same platforms.

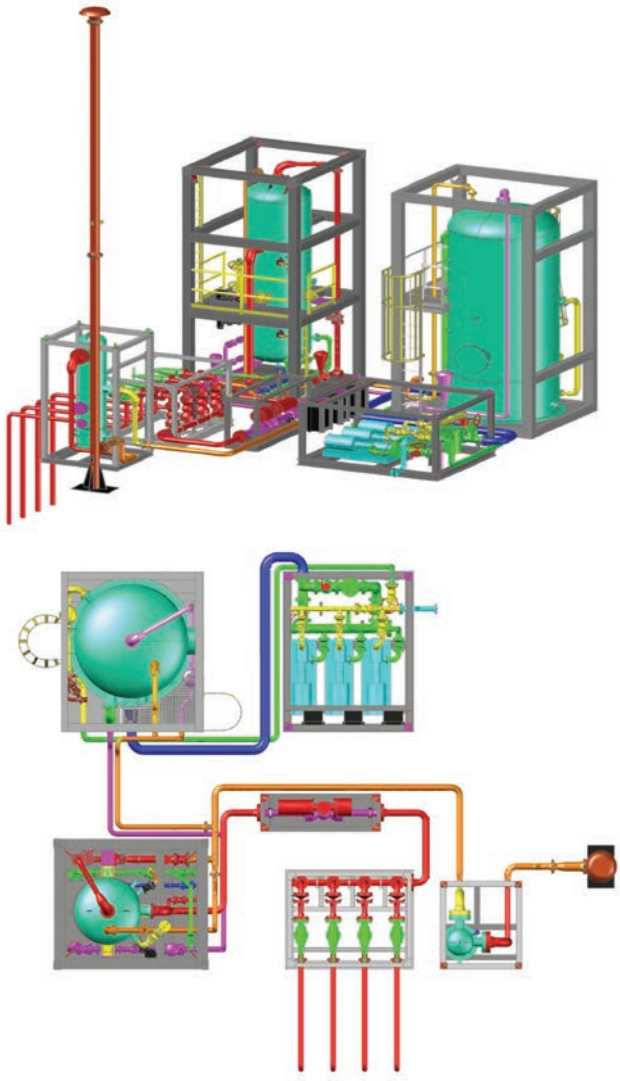
Chevron Well Unloading Spread

Main Components

- Production manifold for multiple wells
- Safety valve / ESD system
- Vertical Separator
- Surge Tank
- High pressure re-injection pump
- Generators/ air compressors
- Gas Compression
- Water Treatment

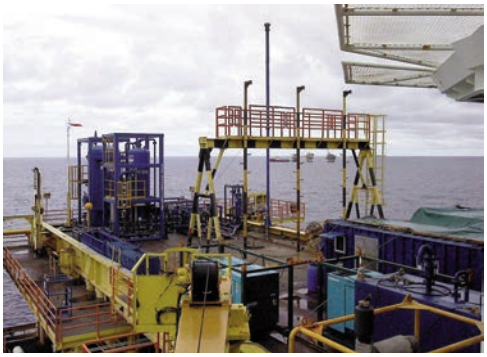
Optional Components

- Sand management



Petronas Carigali

In July 2008, Petronas Carigali (PCSB) commissioned a pilot project for production enhancement for some of their low pressure wells on several of their fields in Malaysia. Expro PTI were awarded a contract, in conjunction with Uzma Engineering and Sigma Setia, to provide their well unloading unit (WUU) to the Dulang D platform. This project ran for a six-month period and proved very successful in achieving increased production from four wells on the platform in excess of 1,000 Bbls per day of Oil. A second WUU package was awarded and mobilised for the Bayan D platform in October 2008 and has been continuously producing since that date at a rate in excess of 1300 Bbls/day of oil.



An additional WUU package was mobilised in March 2010 on Bayan B platform and is currently continuing in production around 900 Bbls/day of oil from 4 wells.

PCSB have identified several other candidate platforms for the WUU services and have recently awarded a further contract for the Tinggi platform which is due to be mobilised in December 2010.

Chevron Thailand

This is the fastest fast-track project that we have undertaken globally that has been completed on time and under budget.

Major customer regarding Expro project in the Niger Delta

- Well Unloading Unit with Gas Compression
- Chevron Benchamas Field
- Gulf of Thailand
- 2005 - 2010

Case studies

Arthit Field

- Well Clean Up Package
- Arthit Field
- PTTEP
- Gulf of Thailand
- 2006-2009
- Package Design
- 10,000 Bbls/day
- 40 mmscft/day
- Portable well test unit

Sirikit Oilfield Thailand

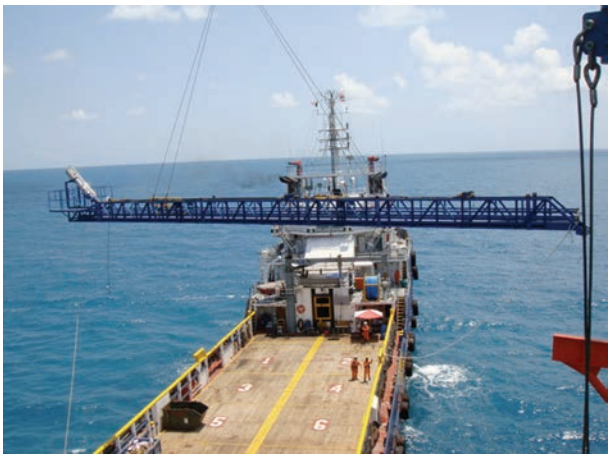
- Water Treatment Package
- Reinjection Facility
- PTTEP
- Sirikit Oilfield Thailand
- 2006-2008
  - 13,000 Bbls/day water
  - 1,500 psi
  - 1,500 BOPB

Case studies

Expro PTI Seafox MOPU

- Early Production Facility
- MOPU – PTI Seafox
- Songkhla Field
- NuCoastal Energy
- Gulf of Thailand
- 2009-2010
- 15,000 Bbls/day
- 10 mmscft/day
- Water Reinjection

Songkhla Field - Soraya



- Early Production Facility
- MOPU - Soraya
- Songkhla Field
- NuCoastal Energy
- Gulf of Thailand
- 2008-2010
- 30,000 Bbls/day
- 10 mmscft/day water
- 20,000 Bbls/day injection

Case studies

Kambuna Field

- Early Production Facility
- PTI Indonesia
- Kambuna Field
- Salamander Energy
- North Sumatra - Indonesia
- 2008-2010
- 40 mmscft/day gas
- 4,000 BCPD

Chevron Thailand

- Seawater Injection Package
- Chevron Thailand
- 5,000 Bbls/day
- 2,000 psi
- Submersible Pumps
- Cartridge Filters c/o Chevron
- 1996 – 2010

Expro's mission is **well flow management.** We provide services and products that **measure, improve, control** and **process** flow from high-value oil and gas wells, from exploration and appraisal through to mature field production optimisation and enhancement.

With a specific focus on **offshore, deepwater** and other **technically challenging environments,** we provide a range of mission critical services across **three key areas:**

- Well Test & Appraisal Services
- Subsea, Completion & Intervention Services
- Production Services

Our vision is to be the **market leader** in well flow management, using the industry's best people, to deliver the highest standards of **safety, quality** and **personalised customer service.**

Expro's **40+ years** of experience and innovation empowers the company to offer **tailor-made solutions** for customers across the energy sector. With 4,500 employees in over 50 countries, Expro offers a **truly global service solution.**

For more information contact:
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Or visit **www.exprogroup.com/contact**