

BP Tangguh

Powering Tangguh Forward

BP is one of the world's leading oil and gas companies. It is vertically integrated and operates in all areas of the oil and gas industry, including upstream, refining, distribution and marketing, petrochemicals, power generation and trading.

The Tangguh gas field lies in Bintuni Bay, in the province of West Papua, Indonesia. It is a major multinational project involving the development of six gas fields in the Wiriagar, Berau and Muturi Production Sharing Contracts (PSC) in Bintuni Bay, Papua Barat.

“Continuous improvement applied to improve end-to-end workflow by implementing existing BP processes in a rigorous way.”

Arno Appel
VP Operations Asia Pacific

ANALYSIS

Renoir was engaged to perform a 2-week business analysis to evaluate current performance and to identify and validate improvement opportunities in Tangguh.

The studies highlighted improvement opportunities in defining and implementing each of the stages of Work Management System for Maintenance Execution.

Observational studies indicated that there was inadequate preparation prior to execution of work, as well as lack of supervision during actual execution. Lack of performance reviews and unclear roles meant that inefficiencies in managing work were not appropriately addressed.

Key findings during the analysis were:

- Lack of adherence to BP's Procedures – Work Management System (WMS), Activity Planning (AP), Safe Control of Work (CoW), and Materials Management.
- Poor prioritisation and planning of work and lack of close-out discipline.
- KPIs were not driving efficiency, nor were they consistently reviewed or displayed.
- Lack of proper work load assignment (time and resources).
- Job plans and database which define preventive maintenance activities were inaccurate (standard hours, Control of Work identification, resources, materials).
- Inadequate start-of-shift meeting sequence, length and participation.

PROJECT APPROACH

Agreement was reached to carry out a 34-week project – named 'Powering Tangguh Forward' – to optimise planning, scheduling and execution of work in order to drive efficiency and cost reduction for BP Tangguh.

The deliverables were:

- Strict compliance to BP's WMS and CoW procedures.
- Executable plans through improved planning and sequencing of all work-related activities, resources and support services.
- Institutionalised active management routines for frontline leaders to achieve work execution efficiency.

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“Through Powering Tangguh Forward we were able to look at the end-to-end life of a work permit or a work order in the same way as Toyota looks at a car through the production line: in doing so we were able to eliminate waste, improve efficiency and ultimately energise people as they can deliver more work with smaller teams.”

Giovanni Cristofoli
Deputy Operations Director & R&M Manager

- Dashboards to measure performance of key activities related to work planning and execution at regular intervals and at the appropriate level.
- Clear and aligned roles and responsibilities, clear responsibility matrices for all key processes and interfaces relating to work planning and execution.

The Project followed Renoir’s Focus Process®, where:

- Active participation and collaboration of all BP stakeholders took place during the Brown Paper exercise. This ensured the development of the optimum solutions and their subsequent buy-in during implementation.
- Critiques of the existing systems and processes were converted into opportunities as well as re-aligned with the company’s global procedures.
- Supporting Management Control Systems (focusing on tracking tools and reporting) were developed to improve the decision making process by providing visibility to the correct level of the organisation. Engagements across all levels of the organisation were carried out during the design and development of a White Paper.
- Work Planning, Scheduling, and Execution Operating Procedures were developed, in compliance with BP’s WMS, CoW and AP. This added the required granularity and focus, and was based on the Brown Paper findings.

IMPLEMENTATION

The Steering Committee – chaired by VP Operations Asia Pacific – endorsed the design during the Strategic Integration Meeting, which officially kicked off the Implementation once the design had been completed and reviewed with all BP stakeholders at the site.

Weekly status updates were reviewed at the Management Action Team meetings at the site and were chaired by the Site Manager. These meetings were embedded in the process and handed over to BP personnel so that they became sustainable over time. They became the key driver for further progress.

Roll-out and on-the-job coaching of the designed system elements was conducted. Compliance with the new practices was monitored by carrying out behavioural audits to provide visibility on the implementation status. These behavioural audits also became embedded.

Implementation involved a significant demobilisation of contractors’ crew, which was successfully undertaken by the Management Action Teams. This, in conjunction with the efficiencies created during implementation, resulted in a recommendation to undertake a re-organisation in the Reliability and Maintenance (R&M) Department. The purpose was to provide additional focus in planning and scheduling as well as provide better technical oversight during execution.

The following steps were conducted to ensure that implemented practices could be sustained and remain in BP Tangguh:

- Creation and agreement of the Work Planning, Scheduling, and Execution Operating Procedures. Sustainability Plans were developed for the R&M Department.
- Roles and responsibilities were updated to reflect the re-organisation and provide clarity at a working level.

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Key Results

6.7:1 ROI during the duration of the project,
13:1 Annualised

41% reduction in contractor workforce

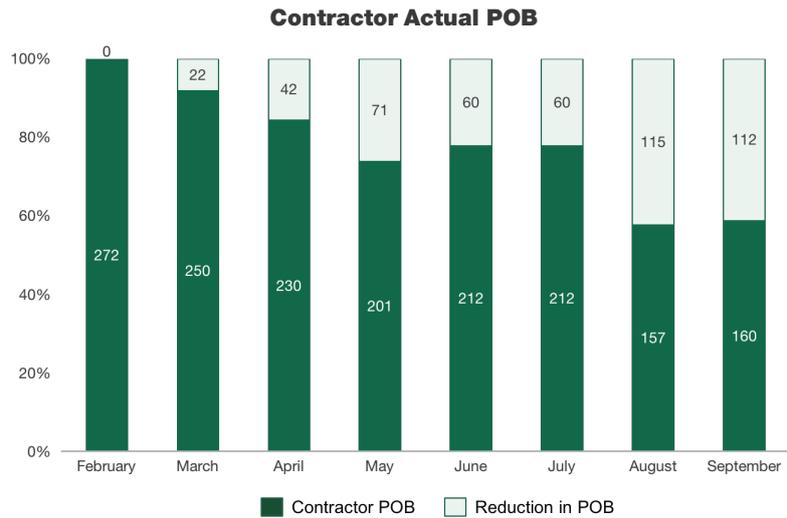
59% increase of wrench time

98% reduction in overdue backlog

RESULTS

The ultimate objectives of the project were to drive efficiency and cost reduction. Through the implementation of the White Paper, work management became more efficient and therefore BP Tangguh required less contractor workforce to perform the same amount or even more work.

Contractor demobilisation commenced mid-year. Since then, additional reductions have been achieved and will continue in order to get to the optimal number of POB (personnel on board) for BP Tangguh which in turn will result in further increases in Wrench Time.



The table below reflects the 4 key performance indicators for the Project:

Category	Baseline	October	Improvement
Wrench Time (h/day)	3.7	5.9	59% increase
PM Compliance (%)	17.6%	56.1%	219% increase
Overdue Backlog (WO)	121000	2581	98% reduction
R&M Contractor POB	272	160	41% reduction

In addition to the above benefits, a review and update of 95% of all job plans and preventive maintenance routines held in the Work Management database was undertaken along with development of 93% of attributes for the entire tag population.

THE RENOIR GROUP

Renoir Consulting is a world leader in sustainable, implemented change. Founded in 1994, Renoir has offices located in North and South America, UK, Europe, Turkey, Middle East, Southern Africa, India, Pakistan, China, South East Asia and Australasia. With over 350 fully employed and highly trained consultants, their work across a wide range of industry sectors gives them a broader perspective of the issues facing your business, allowing them to be sensitive to your unique challenges, culture and specific business issues. This cross-pollination ensures truly effective, rapid and sustainable solutions.

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