

## BP Kwinana Refinery, Western Australia

### Process Improvement Program



The BP Kwinana Refinery, located near Perth in Western Australia, is a 140,000 barrel per day refinery producing a wide range of petroleum products for the domestic and international markets. BP's requirement to reduce operating costs and increase throughput across its refinery business resulted in Kwinana engaging Renoir Consulting to complete an Analysis to assess what efficiencies and cost saving measures could be pursued.

“Due to the collaborative approach adopted by Renoir, I am happy to say that the project has been a considerable success and has delivered sustainable improvements across the maintenance division.”

**Des Gillen**  
**Business Unit Leader**

#### Key Results

Labour savings of \$5,600,000

Maintenance supply chain cost reduction of \$1,305,000

Improved management skills

Alignment of business with daily operational goals

Continued use of root cause analysis

Continued improvement of organisational control

Total annualized benefit of \$6,900,000

#### ANALYSIS

Renoir conducted an initial survey of the BP Kwinana Refinery, and as a result of the findings, the Process Improvement Project began with the Renoir Focus Process® working with department managers to assess areas of opportunity and identify targets across the whole refinery although BP Kwinana later decided to focus their efforts in the Maintenance department and the Supply Chain.

#### PROJECT APPROACH

BP Kwinana Refinery and Renoir jointly launched the 40 week project. The project team consisted of Renoir consultants and seconded BP employees who, after training, worked as an integral and vital part of the process. This team was initially focused on opportunity identification, savings assessment, and target attainment. Management action teams were created in key areas and headed by respective managers. Each management action team (MAT) comprised a cross-functional team of operational management and staff along with Renoir and task-force members. These teams were charged with achieving hard dollar cost reductions through improved control and execution.

#### Maintenance

- **Focus:** Install a rigorous management control system to correct issues causing inefficiencies in approach to everyday execution and attainment of work.
- **Desired Outcome:** Available hours are maximised through enhanced planning and scheduling. The communication flow between the maintenance and operations functions of the refinery should be improved to ensure an increase in the planned work taking place as scheduled. The level of focus and active management of BP and contract personnel is to be increased utilizing routine interval controls. The daily and weekly reporting processes to be embedded to ensure timely follow up on work quality and attainment.
- **Benefit Targets:** 20% Reduction in impactable lost time resulting in annualised benefits of \$4,300,000.

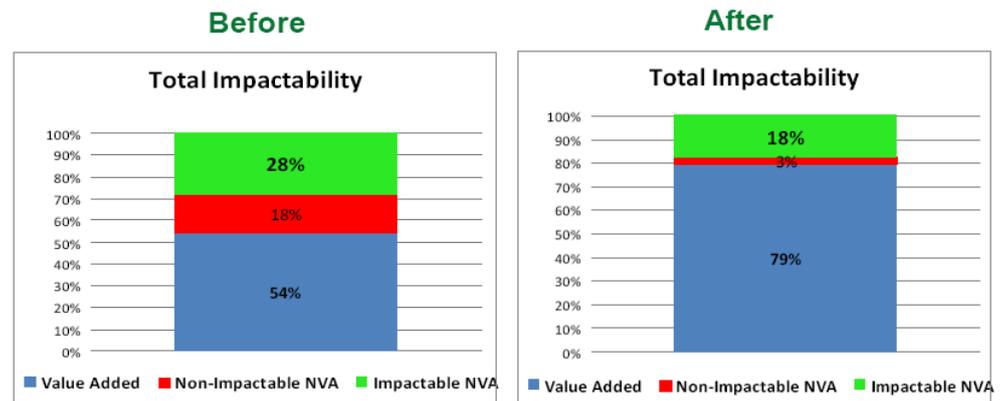
#### Supply Chain Management

- **Focus:** Procurement policy & procedure compliance, vendor & contract owner rationalisation, review of working capital tied up in storeroom inventory.

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- **Desired Outcome:** To install policies which are followed for all activities surrounding “How we spend our money”. Corrective actions are developed and taken to ensure compliance. Procurement is better utilised and involved in more strategic development of vendor base and no longer viewed as a transactional purchasing department. Inventory levels are rationalised to appropriate stocking levels based on a standardised, a logical approach and direction to convert greater percentage of inventory from owned to consignment and decrease carrying costs, working capital value, and overall liability.
- **Benefit Targets:** Contractor labour spend reduction of \$1.8million



## PROJECT RESULTS

### Maintenance:

A major change was implemented in the way in which work orders were processed onto the system allowing maintenance planners to better focus on planning and scheduling. The introduction of the “small jobs” concept which has greatly reduced the number of work orders requiring the full work pack programme allowing planners the time to better plan and scope the larger jobs.

The formalisation of routine interval control which ensured that supervisors and managers at all levels carried out focused follow up of assigned work on a regular basis and reported their findings in such a way as to better facilitate effective route cause analysis.

A similar number of pit stop and day in the life of studies were completed in the final weeks of the project by both project and BP personnel. These studies showed that the average total of lost time incurred by the maintenance teams in a range of activities had been reduced from 46% to 21%.

### Supply Chain Management:

Developed enhanced systems and processes to allow for greater visibility and policing of the way in which money was being spent on maintenance activities. Introduced an effective overtime authorisation process and streamlined the invoice processes. Brought certain contractor procurement processes “in-house”. Introduced contractor KPIs and a monthly contractor score card. A revised min/max system was developed for the refinery stores and a process to manage redundant inventory which will be introduced with the advent of Maximo7. In addition to this an ROI analysis was completed on hire equipments resulting in certain equipments being purchased rather than hired.

## THE RENOIR GROUP

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