

Arrow Energy, Australia

Analysis & Performance Improvement Project

The Moranbah Gas Project (MGP) is located in the Bowen Basin, approximately 400km south of Townsville and 170km west of Mackay. First gas was sold from the field to Enertrade in September 2004. Arrow and AGL Energy jointly acquired Enertrade's gas merchant business from the Queensland Government in December 2007. The upstream joint venture consisting of Arrow, Shell Group, and AGL Energy, now has gas supply agreements with Queensland Nickel Industries and Copper Refineries for up to 6.0 PJ/year and 0.25 PJ/year respectively. The balance of production is fed to the Townsville Power Station. The joint venture also has a gas supply agreement with Incitec Pivot to supply on a take or pay basis 7.0 PJ/year over a period of 15 years commencing in 2010.

"Due to the collaborative approach adopted by Renoir we were able to achieve the goals set out by the project. The methodology and the structure that was established, now allows our organisation to effectively interact with our key internal stakeholders. Our association with the Renoir Group has been positive and it is my pleasure to recommend them."

Robert de Weijer
Chief Operating Officer

Key Results

A sustainable review and learning structure

Improved management skills within the business

Alignment of business with daily operational goals

Continued use of root cause analysis

Enhanced operational control through ongoing development and installation of management control systems

ANALYSIS

Renoir conducted an initial Analysis of the Moranbah Gas Processing Facility in June 2009. As a result of the findings, the project began in July 2009. The 26 week Project kicked off with Renoir's Focus Process™ to engage Asset Managers and superintendents in assessing areas of opportunity and identifying targets.

PROJECT APPROACH

Under the guidance of full time Renoir consultants, a 'taskforce' was created from Arrow personnel, to jointly drive the opportunity identification, savings assessment, and target attainment. Management action teams (MATs) were created in key areas and headed by respective managers. Each MAT comprised a cross functional team along with the Renoir/taskforce Team. These teams were charged with achieving hard dollar cost reductions through improved control and execution.

The scope of the exercise was principally focused on rotating equipment, control systems and associated ancillary equipment at the Moranbah Gas Processing Facility (MGPF) and at the two nodal gas compressor stations. It specifically included those activities directly relevant to improving the reliability and capacity/throughput of the MGPF's compression assets.

The analysis effectively became a root-cause analysis of plant unavailability and throughput and would identify potential reductions in maintenance costs.

Project Charter

To help the growth of Arrow Energy by providing greater efficiency and standardised work practices to help reduce downtime within the maintenance department and improve the availability of compression assets. To deliver a continuous improvement culture that drives discipline and ownership of the processes.

- **Focus:** Install a rigorous management control system to correct issues affecting daily execution and attainment of work.
- **Desired Outcomes:** Maximize available hours through enhanced planning & scheduling, more proactive management of personnel, short

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interval controls & daily reporting to target achievement. This included:

- Downtime reduction
- Available time (Uptime)
- Resource availability
- Compliance to Management Control System Utilisation, Review meeting effectiveness and Schedule maintenance.
- **Benefit Targets:** These initiatives provide the drivers that will lead to an agreed minimum reduction of maintenance costs per unit of production and Reduction in downtime.

PROJECT RESULTS

The following solutions were identified and installed as part of the project:

- A new Management Control System (MCS).
- Revised stores requisition process to allow for BOM to be available prior to a work order being issued.
- Revised the Permit to Work (PTW) creation process to be ready before the work orders are issued.
- A planning and scheduling process of work orders, to ensure correct prioritisation and sequence of work is completed.
- Use of a daily schedule control for the recording of actual data and the identification of non-compliance for later review.
- Provide a level of reporting (Daily) which reviews Plan versus Actual and looks to the root causes of problems and proposes actions to rectify.
- Improve meeting effectiveness (Agenda, Timeliness, Action orientated).
- Use of a Continuous Improvement System (CIP) that logs opportunities for action and follow up.
- Culture / behaviour change in Supervision and Management utilising the MCS to be more focused on process improvements.
- Use Root Cause Analysis (the 5Ys) in the daily review meetings to find and implement action against non-compliance.

A key driver to measure the improvements was the improvement of the ratio between the proactive versus reactive maintenance. The project resulted in a marked improvement in the proactive to reactive maintenance ratio and in December 2009 the ratio had moved to 90% of tool time being proactive.

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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