



# The Tabangao Experience: 70% of the target with 30% of the budget

Over 70% of the margin improvement target for 2003 was achieved with just 30% of the budget, as US\$0.13/bbl was realised by the end of 1Q

## Situation

The south east Asian refining market had been experiencing low profitability. In response to this, Shell Oil Products Eastern (SOPE), aimed to find new ways to improve performance at a number of refineries.

In particular, the long-term viability of the Pilipinas Shell Petroleum Corporation's (PSPC) Tabangao Refinery was threatened by a decline in fuel oil demand. Recent government

legislation on sulphur dioxide emissions had forced companies, including the national power industry, to consume more expensive low-sulphur imports, face closure or switch to the new and abundant supply of Philippine natural gas. Additional product specifications compounded the situation, forcing Tabangao to export its fuel oil and suffer a severe threat to its future profitability.

Despite the circumstances, the client remained optimistic for the future and felt that existing assets and operations needed to be urgently reviewed. They required short-term opportunities for margin improvements and also a longer-term strategy to ensure sustainability. Shell Global Solutions was commissioned to provide an improvement strategy that would involve minimal cost and ensure survival for the refinery.



## Benefits

In 2002 the Shell hydrocarbon management review identified cumulative potential benefits of US\$57.4 million from a capital expenditure of US\$15.64 million. The study highlighted a series of improvement options ranging from quick wins, with zero or minimal capital expenditure, through to larger improvement projects requiring serious investment.

A final selection of improvements had identified benefits of US\$0.40/bbl (US\$11.7 million/year) deemed achievable within 3-years and was set a target of US\$0.18/bbl for 2003. However, by the end of the first quarter, an impressive US\$0.13/bbl had been realised using a capital expenditure of almost 30% of the planned budget.

## Client Verdict

Rico Bersamin, Vice President, Manufacturing, Tabangao refinery: *"The HMR at Tabangao turned out to be better than we expected. We thought that very few areas for improvement could be found. But on the contrary, the HMR process enabled our people to generate quite a number of proposals for improvement (PFIs) with significant margin impact. We are now in the implementation stage and, to date, are realising the target of US\$0.18/bbl planned for 2003."*

The review helped to define the client's current situation in terms of strategy, market position and operation enablers and provides a solid foundation to develop



a future business plan and investment strategy. The programme also succeeded in introducing a complete mindset change to the workforce, by promoting a common goal and encouraging a team spirit. This major achievement was recognised as crucial to improving business performance and discovering a lifeline for survival.

## Solution

The Shell hydrocarbon management review (Shell HMR) is a mature refining margin improvement programme that builds on existing good practices and identifies opportunities for improvement. The programme maximises hydrocarbon margins in alignment with the prevailing market potential, by fully exploiting current assets requiring zero or minimal capital investment.



The review was conducted by a joint team of client personnel and Shell Global Solutions' consultants together with operational specialists from Shell Supply Chain Oil Products East (SCOPE) and the Bukom refinery (Singapore). Data were collected from on-site investigations and presentations across the organisation to provide an independent view of current performance and quantification of hydrocarbon margin benefits.

Structured brainstorming sessions generated 400 unique ideas for margin improvements and prioritised them in terms of potential benefits and ease of

implementation. These options were consolidated and developed into 64 proposals for improvement (PFIs) that were rigorously challenged and reviewed with stakeholders during discussion workshops. A final selection of 42 proposals was agreed over a three-year implementation plan.

Many other quick wins were also identified to be favourable in both the short and long-term perspective:

- Fuel-oil blending strategies and the use of better cutter-stocks to unleash upgrading potential of the thermal cracking unit;
- Specific opportunities to exploit zonal and third party synergies (exchange of products and components and alternate feedstock processing);
- Reformulation of the high-octane grade in order to avert some of the US\$1.3 million/year costs incurred by changes in the specification of gasoline product quality.

In maintaining a true business focus, regularly identifying performance gaps and redefining future targets avoids complacency and ensures the sustainability of the programme's improvement benefits. Shell Global Solutions can offer such a gap analysis that utilizes experience in the refining business to systematically assess performance. This is vital in recognising key drivers and devising an operating strategy to suit the future market.

Using the results from a gap analysis, Shell Global Solutions can also offer a range of integrated solutions to address these newly identified performance issues. For instance, market fluctuations and changing product demands can lead to issues with supply and distribution logistics. Integrated solutions can also be provided to incorporate the optimisation of distribution planning plus the scheduling of feedstock and component streams.

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