Benefits
Gulf Petrochemical Industries Company (GPIC) is a leading fertilizer company in the Middle East, producing ammonia, methanol and urea.

In its quest to stay competitive and to find innovative ways to improve performance, GPIC approached Honeywell and its advanced process control (APC) team to study and identify means to further improve controllability of the ammonia plant and thereby achieve higher productivity.

GPIC and Honeywell engineers conducted a benefit estimation to ascertain the feasibility of the project. Once convinced about the viability, GPIC and Honeywell implemented Honeywell’s Profit® Controller technology, a multivariable control and optimization application for complex and highly interactive industrial processes.

A post-implementation audit showed significant benefits including:

- Increased productivity
- Improved plant stability especially during cyclic changes, minimizing the need for operator intervention
- Improvement in energy efficiency

Background
Gulf Petrochemical Industries Company (GPIC) was established in 1979 as a joint venture between Gulf Cooperation Council members for the manufacture of fertilizers and petrochemicals. The joint venture is equally owned by the government of the Kingdom of Bahrain, Saudi Basic Industries Corporation and Petrochemical Industries Company, Kuwait.

GPIC uses natural gas which is readily available in Bahrain as a feedstock for the production of 1,200 tons daily of ammonia (400,000 tons per annum), 1,700 tons daily of urea (600,000 tons per annum) and 1,200 tons of methanol (400,000 tons per annum). In addition to the production plants the GPIC complex, which was built in Sitra on a reclaimed area of 60 hectares, comprises utilities plants, maintenance workshops, offices, stores and laboratories. The company employs more than 470 people.

Challenge
At GPIC’s ammonia plant, the company wanted to find a way to increase production and to reduce energy consumption.

“In today’s times of recession, it is critical to find some sort of competitive advantage that also falls in line with your business goals,” said Abdulrahman Jawahery, General Manager, GPIC. “We wanted to find ways of gaining competitive advantage by using innovative technologies that have a holistic effect on our people, plant and processes.”
Solution

Ammonia plant operation deals with complex interaction of several interactive process parameters. Since the plant operations were fairly stable and well managed, GPIC and Honeywell engineers conducted a benefits study and worked on a partnership model to implement Honeywell’s Profit Controller.

Conceptual design to commissioning took less than four months and Honeywell was able to demonstrate significant quantitative and qualitative changes to GPIC. Honeywell solutions included:

- Implementation of advanced regulatory strategies
- Profit Controller provided all of the necessary tools to design, implement and maintain multiple input/multiple output applications to help drive processes for a direct economic benefit
- Profit Stepper, an integrated tool that feeds into Profit Controller, provided data collection, automated testing, data visualization and online identification of dynamic modules
- Lab update module
- Five-year Benefits Guardianship agreement that includes services and support to extend the life of Honeywell’s advanced applications, providing a cost-effective path to the latest application technology

Ahmed Nuruddin, Plant Operations Manager, GPIC, said, “Honeywell engineers showed good knowledge about ammonia process and commitment to make this project a success. Despite being faced with multiple challenges during execution, the team was driven to show us the way to make more profits by applying this advanced control technology.”

With Honeywell’s Profit Controller the plant was able to improve productivity and energy efficiency. “With this increase in ammonia productivity and accelerated payback of about 18 months, we now have a great technology footprint with guaranteed Honeywell support behind us,” said Fadhel Al-Ansari, Technical Services Manager, GPIC.

Profit® is a registered trademark of Honeywell International Inc.

More Information

For more information on Honeywell’s advanced process control solutions, visit www.honeywell.com/ps or contact your Honeywell account manager.

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Process Solutions

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