

Case Study

Petrocity's Oil Terminal Konza Chooses Honeywell for Integrated Solutions



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Aman Kurji, Managing Director of Petrocity Energy (K) Ltd

Benefits

Although the Kenyan economy faces uncertainty in 2012, its GDP is forecast to grow at a rate of 5%, up from an estimated 4.1% in 2011. With a resulting expectation of increase in demand for petroleum products marketers are seeking larger storage capacity to mitigate disruptions in the distribution system and enhance supplies. In particular, companies are seeking to reduce their reliance on the Kenya Pipeline Company (KPC) to avoid inconveniences that come with lack of capacity. Independent oil marketers and trading companies are therefore investing in new storage facilities in a move to stabilize their supplies and cut expenses. One such company is Petrocity Energy (K) Ltd.

Petrocity is setting up a Greenfield terminal storage facility at Konza, near the Nairobi- Mombasa Highway, 70 km south-east of Nairobi. The facility will cater for Nairobi’s growing demand for fuel; the city and its environs consume more than 65 per cent of the country’s oil. The Petrocity Konza project also aims at increasing availability of petroleum products to new entrants and independent dealers who have limited access to truck loading facilities in Nairobi. To realize these demanding requirements for automation and control, Petrocity contracted Honeywell to provide Integrated Main Automation Contracting (I-MAC) solutions and services for the terminal.

The complete package to be supplied by Honeywell includes the pipeline receipt system, tank farm, truck loading system, and terminal automation, through Honeywell’s Experion® Process Knowledge System (PKS) and Terminal Manager. It also includes all industrial security, emergency shutdown (ESD) and fire & gas (F&G) systems.

Honeywell’s solution architecture takes full account of the recommendations for terminal safety established after the Buncefield oil storage explosion in Hertfordshire, UK.

Once the Honeywell I-MAC solution is implemented, the Petrocity Konza terminal can look forward to a range of benefits, including:

- High productivity and efficiency through automated workflows.
- Safe, secure process and business operations.
- Access to real-time transactional information anytime and anywhere through secure thin client access.
- Accurate reconciliation of physical and book stocks.
- Minimal downtime through the deployment of predictive maintenance tools.
- Work on the Konza project, which started in January 2012, is due for completion in October 2012.



The Konza terminal will ensure adequate stocks are available for Petrocity’s customers in Nairobi and its surroundings.

Background

PETROCITY



Petrocity Energy (K) Ltd., which was incorporated in February 2010 in Mombasa, Kenya, is investing 1.5 billion Kenyan shillings in strategic oil reserves in an effort to guarantee supply to cover the firm against volatile prices and sell to other marketers.

Challenge

The project will have two phases in which 12 tanks with a capacity to store 150 million liters will be built. The facility will store gasoline, diesel, and kerosene. "Our Konza terminal will ensure adequate stocks are available for our customers in Nairobi," says Aman Kurji, Managing Director of Petrocity Energy (K) Ltd. "If a shipment is delayed, we will have one month's stock to fall back on. After the second phase, we will have two months of stock cover for Nairobi."



Petrocity's 12 tanks at Konza terminal will have a capacity to store 150 million liters of gasoline, diesel, and kerosene.

Right from the initial concept, Petrocity's vision was to equip the terminal facility with the latest, field-proven technologies to set the industry benchmark around safety, reliability and efficiency. A highly advanced stock controlling computerized system will provide oil marketers with live and up-to-date stock positions instantly.

The terminal is to be equipped with high accuracy measurement instruments, approved for custody transfer applications. Field instrumentation will include SIL rated instruments and PLCs, and software application framework tools that automate the operational and business workflows for the entire facility. Web visualization will be backed up by thin client browser-based secure access to stakeholders.

Furthermore, the terminal facility is to be equipped with the latest, field-proven security and surveillance technology that will act as a deterrent for physical intrusion 24/7, 365 days of the year.

Solution

A range of Honeywell technologies is being supplied to the Konza terminal:

- Enraf 854 servo tank level gauges.
- Series 100 pressure transmitters.
- Truck loading metering and control system.
- SIL 3 rated Emergency Shutdown System and F&G systems through its Zellweger gas detection system, Notifier® fire alarm system and Safety Manager, Honeywell's safety instrumented systems solution.
- Industrial security with access control solutions, CCTV and Digital Video Manager, which integrates with the control system to enable operators to monitor process and safety conditions as well as security threats.
- Pipeline receipt system with fiscal metering skids using VersaFlow Coriolis Meters and motorized valve and actuator systems.
- The SCADA and terminal management system, using the Experion PKS control system and Terminal Manager, Honeywell's terminal automation software.
- Facility Management System: Enterprise Buildings Integrator
- Access Control System: Temaline system.
- Fire Alarm System: Intelligent call points, intelligent smoke detectors, bells, flame detectors, heat detectors with connection to Notifier Main Fire Alarm and Sub Alarm Panels.
- Gas Detection System: Sense Point infrared gas detectors with connection to SIL 3 PLC.

Honeywell will deliver all services associated with the project from the HAZOP study, including front end and detailed engineering, onsite commissioning, and support services with a resident engineer.

The integrated solution will enable automated procedures for product receipt, stock allocation, accounting and dispatch; field solutions for accurate measurement to ensure safe and reliable stock tracking throughout the terminal; and CCTV integrated into both the building management system and process control system for improved process visibility. The platform will also provide online access for more than 100 of the terminal's customers at a time, enabling them to access details and track

"Honeywell's solution offers end-to-end integration to give us a global overview of the entire facility and ensure we meet best practice in safety. It will be among the most technologically advanced terminals in Africa," explains Kurji. "We found Honeywell's approach very proactive and they were very quick to understand what we were looking for. We highly appreciated their enthusiasm, expert advice and vision." A key reason why Petrocity chose Honeywell was the corporation's truly integrated vision for the terminal, backed up by complete front-end engineering and consulting capabilities. Other companies offered solutions that integrated only parts of the terminal. "Another reason was that Honeywell's Terminal Automation Solution for product receipt, storage and distribution was well-proven; they were able to show us successful applications in tank depots all over the world," adds Kurji. "And of course we were attracted by the recognized and highly regarded Honeywell brand, backed up by extensive service and lifecycle support programs, which gave us total peace of mind."



Honeywell's reliable, versatile and accurate automatic tank gauge, meeting all international standards, regulations and recommendations.

For More Information

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