

How the Western Cape's largest electricity consumer saved R90 million in one year

African Utility Week to give insight into large power users' challenges

ArcelorMittal's steel plant in Saldanha, the single largest electricity consumer in the Western Cape, participated in an Industrial Energy Efficiency Improvement Project that has resulted in an astounding R90 million energy bill savings in one year. The upcoming **African Utility Week** in Cape Town from 14-16 May will give a unique insight into the challenges of large power users, including an exclusive site visit to ArcelorMittal's Saldanha Works.

The Saldanha Works is a flat rolling integrated steel facility that produces 1.2 million hot rolled coil (HRC) per annum. HRC from Saldanha is mainly exported, with approximately 20% sold on the local market. There are three main areas within the plant – iron making (producing liquid iron and direct reduced iron), steel making that has two converter arc furnaces (CONARC), and rolling with a hot strip mill and a temper mill.

Energy management strategy

To save energy, water and waste at the plant, Saldanha launched a focused energy management strategy in 2010 says Dhesan Moodley - General Manager of ArcelorMittal's Saldanha Works. He explains: "resources were allocated both in terms of people and capital expenditure. Initially the potential was determined through an existing project list and doing an energy audit on the plant to determine further possible savings. ISO 50001 was implemented and energy management is now part of our daily routines. The energy saved in terms of baseline value of 160 MW was 10.6MW or 6.6% and the equivalent of R90 million in 2012.

Moodley says they also implemented various VSD (Variable speed drive) projects that delivered greater savings than expected. "This has proved to be sound technology given the correct application. We are also very proud of our waste heat project at the Roller Hearth Furnace where waste heat was used to replace a diesel heater at the Air Separation plant. We have also done some optimisation projects at the water plant on pump systems that required no capital expenditure."

Introducing savings easy

According to Moodley introducing energy savings is relatively easy. He explains the main lessons the steel plant learnt: "You need to assign resources if you are really serious about energy savings. You need to train people – a good technical person still needs to be trained in energy savings and the NCPC/ UNIDO program (supported by the DTI and DOE) is really an affordable way to train your staff to think and implement energy savings initiatives. Introducing savings is relatively easy. Sustaining these savings can be quite difficult especially if it is achieved by changing human behaviour. You need to incorporate it in your management infrastructure and implement a system such as ISO 50001 to entrench and sustain such savings."

Increased energy tariffs

Large Power Users are under increasing pressure with rising energy tariffs and the impending implementation of a carbon tax. ArcelorMittal's Saldanha Works, General Manager, Dhesan Moodley says the increased energy tariff and carbon tax is a significant risk for the plant. He expands: "we are focused on the export market, specifically in Africa and we are competing against China and India. These countries do not experience any of the cost increases mentioned. The viability of export facilities is at risk with these increases. This obviously has significant potential impact on the economy, not just local, but also on the fiscal balance."

A number of delegates at the upcoming African Utility Week in Cape Town from 14-15 May will be able to experience a unique site visit to the steel plant at Saldanha. Moodley says their main message to fellow power professionals at the event will be that "once you start focusing on energy savings there are numerous opportunities to achieve savings."

The site visit will include the following aspects of the plant:

- RHF Flue gas capture to heat Diesel at the Air Separation Unit: This is a waste heat project which eliminates the requirement for diesel heating by using waste heat from another process to achieve the same results.
- Optimisation of Compressed Air at ASU: Eliminating waste from the compressed air system. The monetary value of mismanaged and misused compressed air is often underestimated.
- Water treatment plant System 1 and 14: often there is low hanging fruit to achieve savings such as just switching off equipment and ensuring that a system is running at its optimum with as little waste as possible. These are two examples of this principle. Solid theoretical analysis, practical measurements and detail risk analysis and action plan to address risks are essential before any changes can be made.

The dates for African Utility Week are:

Exhibition & Conference: 14-15 May 2013

Pre-conference Workshops: 13 May 2013

Site Visits: 16 May 2013

Location: CTICC, Cape Town

Websites: www.african-utility-week.com <<http://www.african-utility-week.com>> ; www.clean-power-africa.com <<http://www.clean-power-africa.com>>

African Utility Week

African Utility Week brings together the entire ecosystem for the African water and power sector, from high level government representatives, utilities and municipalities, regulators and power pools to consultants, vendors, service providers and energy intensive power users for the purpose of sharing and determining the future development of Africa's power industry.

Clean Power Africa

Clean Power Africa is Africa's leading event where major stakeholders from the clean power sector get together and network. The event, co-located with the 13th annual African Utility Week, facilitates information exchange at the highest level and explores clean generation as a feasible solution to fulfil Africa's electricity needs.

Contact:

Communications manager: Annemarie Roodbol

Telephone: +27 21 700 3558

Mobile: +27 82 562 7844

Email: annemarie.roodbol@clarionevents.com