

First National Battery

Industry Case Study

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First National Battery: Company Profile



First National Battery is the leading manufacturer of lead acid batteries in South Africa. Established in 1931, first automotive batteries were produced in East London, South Africa. FNB remains at the forefront of battery technology and innovation.



Four FNB Plants:

- **Automotive Battery Factory**
Settlers Way, East London



- **Plastics Processing Plant**
Fort Jackson (45km from East London)



- **Industrial Battery Factory**
Buffalo View Road, East London



- **Distribution and Recycling**
Liverpool Road, Benoni, Johannesburg

Nature of the challenges



FBN's SHE National Manager to implement ISO50001 standard in all four of the South African factories.



Achieve certification by end of 2018.



First National Battery signed up as candidate plants for the programme (EnMS & ESO).



Facilitated ISO 50001 aligned programme at Benoni and East London plants.

Training Intervention



EnMS 2-day End User & EnPI

- Benoni Energy Team needed to implement an EnMS system within a limited time frame.
- Energy performance improvement by end of 2018.

Benefits

- The Benoni Plant achieved an actual performance improvement of 3.4% by November 2018.
- This exceeded the FNB Benoni's own improvement target of 2.5% based on the 2017 Baseline Year.

Key Findings

- The initial walk-through audit identified one major quick-win
- Operational and equipment options
- Quickest win was to switch off warehouse lighting at night and over weekends
- Replacing old luminaires with LED and adding occupancy sensors
- Modification to furnace reload operations



Overall Consumption Saved

3.4%



Energy Saved

2346.52 GJ



Money Saved

ZAR 521 448



GHG Mitigated

587 t CO₂e



Investment Made

ZAR 187 179

Implementation of EnMS

IEE Capacity Building Programme

- The energy manager attended the EnMS expert level training.
- The energy manager tasked with overseeing the implementation of the EnMS.
- Support from top management was a critical component.

Name	Position	Training
Kenneth Mbedzi	Production Manager	EnMS 2-day End User
Johan vd Merwe	Production Manager	EnMS 2-day End User
Tiny van Zyl	Plant Manager	EnMS 2-day End User
David Kolm	Production Supervisor	EnMS 2-day End User 2-day Energy Performance Management Indicators (EnPMI)
Neville Pillay	Safety Coordinator	EnMS 2-day End User
Canaan Moffat	Purchasing Coordinator	EnMS 2-day End User
Manie Killian	Electrician	EnMS 2-day End User
Sandile Ngubane	Electrician	EnMS 2-day End User
Richard Schnepel	Engineering Foreman	EnMS 2-day End User
Laurence Coetsee	Production Supervisor	EnMS 2-day End User
David Botha	Plant Maintenance Manager	EnMS 2-day End User 2-day Energy Performance Management Indicators (EnPMI) EnMS Expert Training

Implementation Challenges



The only challenge noted is that it took about a year from the decision to implement the EnMS before real traction was gained.



An unavoidable delay in the expert level course delayed the process by about four months.



Once this started progress was rapid with top management giving their full support, an action that provided significant assistance to the process.

Highlights of Operational/ESO Interventions

Summary of Interventions

Energy uses/users	Energy Sources	Intervention	Utility saving Period	Investment (ZAR)	Savings (ZAR/year)	Payback (Yrs)	Utility saving (Units) GJ	GHG Emission Reduction (tonnes CO2/year)
Storage	Electricity	Light Technology	12 months	21655	12614	1.72	56.76	16.4
Storage / Lights	Electricity	Light Technology	12 months	21655	16819	1.29	75.69	21.9
Storage / Lights	Electricity	Light Technology	12 months	17979	9810	1.83	44.15	12.8
Storage / Lights	Electricity	Light Technology	12 months	73845	124041	0.6	558.19	161.6
Storage / Lights	Electricity	Light Technology	12 months	31545	13315	2.37	59.92	17.3
Storage / Lights	Electricity	Day/Night Switch	12 months	500	1373	0.36	6.18	1.8
Furnaces	Gas	Training	12 months	0	88224	0	397.01	22.3
General	Electricity	Training	12 Months	0	192000	0	864	250.20
Plastic Plant	Electricity	Training	12 Months	0	27721	0	124.74	36.12
Battery Breaker	Electricity	Process Change	12 Months	20000	31344	0.51	141.05	40.85
Storage / Lights	Electricity	Light Technology	12 Months	0	4184	0	18.83	5.45
TOTAL				187179	521445	0.78	2346.52	586.72

Benefits

- The savings have not had a direct impact on job retention at this stage.
- The main savings have been realized in the financial performance, which is of benefit in a competitive market.
- The real impact will only be observed in the future.
- To date there has been no decline in staff morale or production quality or output.
- The team however is now more aware of the importance of energy management and the need to improve energy performance.
- Indeed, it can be reported that initial observations indicate greater team effort amongst employees.

Lessons

- Top management support is critical
- There must be a culture of record keeping with a simple, stable and user-friendly management information system that can easily be enhanced to meet ISO50001 requirements
- Buy-in from all staff (may need some incentive) with appropriate training is essential
- The use of including ISO50001 into individual KPIs may be useful
- Continual review/monitoring is essential
- Regular communication with all stakeholders is important
- Consider and support the long-term effort required to maintain and retain certification

Identifies Opportunities

Energy uses/users	Energy Sources	Future Intervention	Utility saving (Units) GJ	Plan for Implementation	Comments
Battery Breaker	Electricity	Sequence Stop/Start	324	February 2019	New WI to be drafted and operators training
Bag Houses	Electricity	Reduce Sub Equipment	84.55	April 2019	Await Capex approval – Planned for 2019 Shutdown
Bag Houses	Electricity	Change Motor Size	1066.87	April 2019	Await Capex approval – Planned for 2019 Shutdown
Compressor	Electricity	Replace old Compressor to VSD type	Not yet calculated	April 2019	Await Capex approval – Planned for 2019 Shutdown
Furnaces	Gas	Install temperature control	Not yet calculated	August 2019	Several trials planned for 2019

Thank You

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