

The Harmony Gold DSM Heat Pump Project

Save up to
67%
on your hot water
heating bill

Qualifies
for SANS
10400XA



**SA Heat Pump
Engineers**



heating up... sustainably

Scope of Project



- SA Heat Pump Engineers was awarded the Harmony Gold Heat Pump Project in conjunction with Eskom on 1 October 2010. The project was completed on 30 September 2012.
- 222 BWH heat pumps were installed at 18 mines for Harmony Gold.
- The estimated demand savings was 7MW. A measurement and verification was done on 6MW by the University of Pretoria. An over achievement of 7.8% was achieved resulting in a saving of 6.5MW. The other 1MW was not audited.
- This is the largest heat pump demand side management project completed in South Africa.
- Project highlights are as follows:
 - Monthly electrical savings of 4.8 GWh
 - Monthly electricity savings of R2.4 million
 - IRR of 128% including maintenance costs
 - Capital payback of 10 months
 - Net Present Value of R97M



Detailed information of project



Electrical and environmental savings	Per Month	Per Year
Target demand saving (MWh)	4 464	52 560
Actual demand saving (MWh)	4 812	56 660
Baseline Actual Usage Elements (MWh)	5 419	65 027
Actual Usage Heat Pumps (MWh)	607	7 284
Saving %	89%	89%
CO2 Saving (kg)	4 668	56 011
NOx Saving (kg)	19 825	237 903
Sox (kg)	38 399	460 793
Particles (kg)	1 829	21 942
Water (kl)	6 544	78 531



Detailed information of project



Financial Savings		
Baseline Electricity Cost - With Elements (R)	2 666 056	31 992 672
Actual Electricity cost Heat Pumps (R)	294 058	3 528 696
Saving	2 371 998	28 463 976
Saving %	89%	89%

Financial Ratios	
Total Project Cost (R)	58 356 245
Costs paid by Eskom (R)	35 814 453
Costs paid by Harmony (R)	22 541 792
IRR	128%
Project pay back period in years	0.8
NPV (Based on 8%)	97 575 351

