

Transnet Rail

Energy Efficient Lighting Project (DSM)

The basis of the project was Energy Efficient Lighting and the better control thereof. Energy Efficient Lighting was achieved by: Replacement, Retrofit, Relamp. The better control over the lighting was achieved with the installation of Occupancy Sensors.

LIGHTING:

Replacement: The site consisted of 70 "Bays" that were being lit by old 400W High Bay type of fittings, 2500 of these were changed out to an Energy Efficient Fluorescent High Bay. Average savings of approximately 47%. Other than the High Bays approximately 4000 Open Channels and Dustproof Fittings were also replaced with more efficient types and lower wattage units.

Retrofit: By removing control gear (ballast) and lamps, and replacing with new electronic control gear (ECG) and lamping. The existing body of the luminaires is retained.

Relamp: Replacing existing incandescent lamps with compact fluorescent (CFL) or replacing existing discharge lamps with more efficient types of lamps (no change of body or control gear) 50W Down Lights were fitted with 35W lamps.

OCCUPANCY SENSORS:

With the installation of Occupancy Sensors to control only 2/3 of lighting inside the bays, the total kWh of the lighting reduced was reduced by approximately 60%. The Occupancy Sensors were installed to control 3 fittings per sensors with alternative lights being left for general lighting. Additional Occupancy Sensors were also installed in the Admin areas and Ablutions. Approximately 1200 Occupancy Sensors were installed

Project Total Value:	R 6.7 Million
Transnet Contribution:	R 4.02 Million
Eskom Contribution:	R 2.05 Million
Before Implementation Load:	1.86 MW
EE Lighting Savings:	0.75 MW
Occupancy Sensors Savings:	0.3 MW
Total Savings:	<u>1.05 MW</u>
Percentage Savings:	57%



Before



After