

MOIL LIMITED

Ukwa Mine, Nagpur (Maharashtra)

Unit Profile

Ukwa Mine is an underground Mine of MOIL Limited situated about 243 Kms. from Nagpur. There are 604 employees including Executives, staff and workers are engaged to work in two shifts.



Excavation of manganese ore about 110 meters below ground is being carried out by cut and fill method, an inclined approached to underground from surface is used for transportation of ore from underground by using an electrical hoist, As the deposit of manganese are proved below ground in some other sections, a new vertical shaft 1sinking project is in progress after implementation of new system production capacity of mine will be increased.

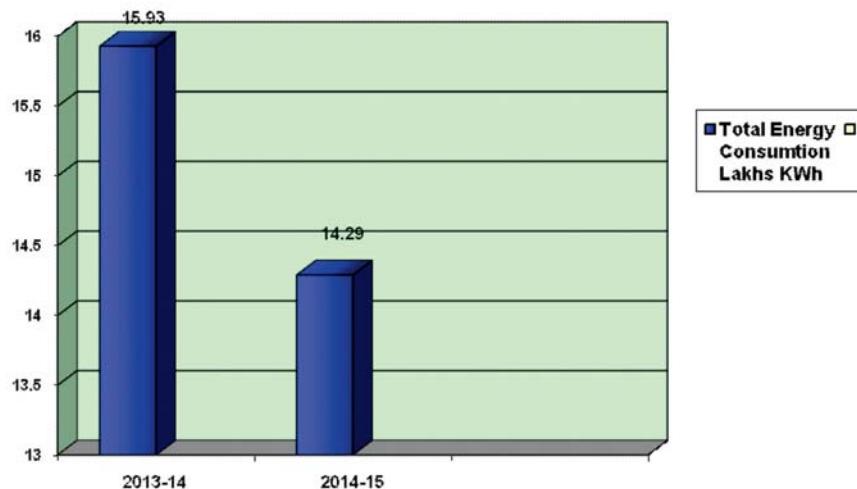
Ukwa Mine is situated in centre of valleys, average rainfall of this area is1200 mm, due to this reason so many pumps are installed at different sections for dewatering and in this area company have a scope for energy saving, Drilling holes for blasting in underground, required for excavation of ore is being done by pneumatic drill machines, to operate this compressed air is provided through air compressors installed at surface, hence another area for energy saving for company is the air compressors, energy conservation measures by providing VFD for Compressor has been already implemented and provisions are being made for other equipments such as pumps, ventilation fans etc.

The existing contract demand of mine is 470 KVA and connected load is 700 KW, major electrical installations are air compressors, centrifugal pumps, electrical hoists and winder. Company received a 33 KV power supply from MP Transmission Co. Ltd. From there 132 KV substation situated around 20 Km away from mine, in addition to this company have 1 X 1500 KVA D. G. sets to fulfill its power requirement in case of failure of power from main source,

Company has a team of trained persons to monitor the different installations in the mine periodically, to check the different operations in the mine for improvement of system and to avoid wastage of electricity.

Total energy consumption:

| Description | 2013-14 | 2014-15 |
|---|---------|---------|
| Total Energy Consumption in Lacs of kWh | 15.93 | 14.29 |



Energy Conservation

1. **Replacement of 250 HP, 1000CFM Compressor with 200HP 1000 CFM Compressor** : - Earlier 250 HP, 1000 CFM Air compressor was used and operated to provide the pneumatic air for the pneumatic operated drilling machine at underground. A new VFD based 200 HP 1000 CFM compressor was installed and commissioned. The amount of energy saved by this compressor is 0.82 Lac kWh and the corresponding saving in amount is Rs. 7.44 Lacs.
2. **Replacement of 50HP pump with 20 HP Pump:** - 50 HP pump was used at underground for dewatering the sump which is now replaced with New 20 HP Pump. The amount of energy saved by these pump is 0.28 Lac kWh and the corresponding saving in amount is Rs. 2.44 Lacs.
3. **Replacement of 90 HP Pump with 20 HP Pump:** - 90 HP pump was used for dewatering the open cast pit bottom during the monsoon season. Now the above pump is replaced with New 20 HP pump. The amount of energy saved by these pump is 0.34 Lac kWh and the corresponding saving in amount is Rs. 3.06 Lacs.
4. **Replacement of 75 HP Pump with 15 HP Pump:** - 75 HP pump was used at underground for dewatering the sump which is now replaced with 15 HP Pump. The amount of energy saved by this pump is 0.26 Lac kWh and the corresponding saving in amount is Rs. 2.37 Lacs.
5. **Replacement of 10HP pump with 3 HP Pump:** - The 3 HP pump was installed instead of 10HP pump at the working faces for dewatering so that the mining activities can be carried out. The amount of energy saved by these pump is 0.02 Lac kWh and the corresponding saving in amount is Rs. 0.20 Lacs.

Energy Policy

MOIL is the largest producer of Manganese Ore in India and also the market leader, commit to adopt a comprehensive approach towards conservation of energy in all its operations. To accomplish this we will:

- Optimally utilize various form of energy in cost effective manner to effect conservation of energy sources.
- Maximize the use of renewable energy sources and non-conventional sources of energy.
- Train our employees to make energy conservation as a way of life and recognizing their initiatives in this regard. Also a cash prize has been introduced since 2006 to the employee consuming least Units.
- Carry out external audit in regular interval and to identify the areas of improvement.
- Reduce specific energy conservation by 1% every year till 2016.
- Improve capacity utilization.