

Energy Conservation Measure implemented in 2006-2007

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure ** RENEWABLE ENERGY TECHNOLOGY BY USING 4.8 MW WIND ENERGY GENERATOR	Sector : Mining
Year to be filled by BEE		Technology : Renewable Energy Technology **

Description of the energy conservation measure: 4.8 MW Wind Energy Generator has been installed in District Dewas near Indore in M.P. Energy generated from WEG is being utilized by wheeling power from Western Distribution company, M.P. to Eastern distribution company , M.P. The power wheeled is being shared by Balaghat Mine as well as Ferro Manganese Plant. Accordingly the total investment has been proportionately distributed in between Balaghat Mine and Plant. The details of savings in terms of KWH generated and in terms of Rupees has been given in write up. Savings in terms reduction in Green House Gases has been also projected.


Picture/ sketch/ drawing after modification



Agency that executed the project (with complete address and email): Enercon India Limited : service@enerconindia.net					
Total investment, Rs.:1055.24 Lacs			Year of implementation: 2006-07		
First year energy cost savings, Rs.: 128.095 Lacs					
First year other savings, Rs.: Saving in wheeling power to Ferro Manganese plant is attached separately.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before (Purchased from E.B.)	6525	NIL	NIL	NIL	NIL
Energy consumption after (Purchased from EB)	4743.5	NIL	NIL	NIL	NIL
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	Rs. 6.00	NIL	NIL	NIL	NIL
Company complete address: Enercon India Limited, 87/B, Silver Industrial estate, Daman : 396 210 (India) Contact person who could be contacted for more information: Phone No. 91-260-2221219, 2221220 Fax No. : 91-260-2221508				We authorise Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006-2007

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure BY USING LARGE DIAMETER PIPES FOR COMPRESSED AIR CONVEYING		Sector - Mining		
Year to be filled by BEE			Technology - Upgradation		
<p>Description of the energy conservation measure: Earlier we had been using 150 mm diameter pipe for conveying compressed air in various section of the mine which was insufficient for conveying required volume of compressed air. After installation of 300 mm diameter pipe the air pressure improved and the rate of drilling was much faster. The air pressure available in underground mine increased from 50 to 60 PSi to 75 to 80 PSi. Total annual saving in energy consumption of compressor was 2,92,975 units amounting to Rs. 17,57,847/-. This saving could be achieved only due to lesser drop in compressed air pressure after using large diameter of air pipeline for underground mine.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Pipe Line were procured by company and installation was carried out departmentally.					
Total investment, Rs.: 5.30 Lacs			Year of implementation: 2006-07		
First year energy cost savings, Rs.: 17.57 Lacs					
First year other savings : Reduction in maintenance cost , lesser drilling time required less man power. These savings are not quantifiable.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	2356	NIL	NIL	NIL	NIL
Energy consumption after	2064	NIL	NIL	NIL	NIL
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	Rs. 6.00	NIL	NIL	NIL	NIL
Company complete address: Contact person who could be contacted for more information: Chief (Elect.), MOIL, Balaghat Mine				We authorise Bureau to use this information for dissemination Signature Date	

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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure USE OF NEW GENERATION PNEUMATIC ROCK DRILL MACHINE WITH HIGHER PENETRATION RATE		Sector : Mining			
Year to be filled by BEE			Technology : Upgradation			
Description of the energy conservation measure: The conventional pneumatic rock drill machine were inefficient and suitable for only 1.5 meter depth of drilling. These machines required 100 CFM at 100 PSI. New Generation Pneumatic drill machines with higher penetration rate and suitable for longer depth up to 3 meters were used to achieve faster drilling. These machines required 120 CFM but over all savings was there due to better penetration & longer drilled holes.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
Sketch Not Available			Sketch Not Available			
Agency that executed the project (with complete address and email): BBC 16 Pneumatic Rock Drill machine from Atlas Copco						
Total investment, Rs.: 3.30 Lacs			Year of implementation: 2006-07			
First year energy cost savings, Rs.: 0.58 Lacs						
First year other savings, Rs. There were numerous other savings e.g. faster drilling , lesser maintenance, savings in manpower which are not quantifiable.						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	96.682	NIL	NIL	NIL	NIL	
Energy consumption after	87.082	NIL	NIL	NIL	NIL	
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	Rs. 6.00	NIL	NIL	NIL	NIL	
Company complete address: Chief (Elect.), MOIL, Balaghat Mine				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information:				Signature Date		


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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure INSTALLATION OF 33 KV SUBSTATION		Sector - Mining		
Year to be filled by BEE			Technology - Upgradation		
Description of the energy conservation measure: The power supply to mine was through 11 KV system voltage. The supply voltage was very low, leading to low power factor and low efficiency of electrical equipments After commissioning of substation we have saved 4.80 Lacs KWH as the average current drawn by the system has reduced due to higher system voltage .This is equivalent to Rs. 22.81 Lacs					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email):					
Total investment, Rs.: 104 Lacs *Investments was projected during last year and saving of only three months was projected. We are projecting savings of nine month without including capital expenditure incurred.			Year of implementation: 2006		
First year energy cost savings, Rs.: 15.01 Lacs . (Earlier during 2005-06 we had projected total savings of 2.3 Lacs equivalent to Rs. 13.80 Lacs for only three months i.e. from January 2006 to March 2006. This year i.e. during 2006-07 we are projecting benefits for rest of nine month i.e. from April 2006 to December 2006 without any financial expenditure incurred by company.)					
First year other savings, Rs.: . There were numerous other savings lesser tripping, higher efficiency of equipment which cannot be quantified.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	NA	NIL	NIL	NIL	NIL
Energy consumption after	NA	NIL	NIL	NIL	NIL
The savings in energy consumption in absolute terms could not be recorded and compared as the load factor increased in mine during intervening period.					

Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	Rs. 6.00	NIL	NIL	NIL	NIL
Company complete address: Chief (Elect.), MOIL, Balaghat Mine				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Chief (Elect.), MOIL, Balaghat Mine , 07632-245046				Signature	
				Date	

Energy Conservation Measure implemented in 2006-2007
(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure INSTALLATION OF APFC PANEL		Sector - Mining		
Year to be filled by BEE			Technology - Upgradation		
Description of the energy conservation measure: It was observed that the power factor of Balaghat Mine is reducing drastically, and we will be panelized for low power factor . It will also increase the maximum demand necessitating higher payments towards contract demand. During our survey it was also observed that harmonic contents in supply was as high as 21% due to Thyristor drives, . distorting the sinusoidal pattern of wave form of supply. We were unable to operate Thyristor drives through DG sets due to high harmonics. Hence it was necessary to provide filters along with capacitors to reduce the level of harmonics within a tolerable limits. This is achieved by installation of APFC Panel.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email):					
Total investment, Rs.: 29.50 Lacs *Investments is projected during last year and saving of only one month was projected last year.			Year of implementation: 2006		
First year energy cost savings, Rs.: 15.43 Lacs (Earlier during 2005-06 we had projected total savings of 29950 units equivalent to Rs. 2.54 Lacs for only one month i.e. for March 2006 . This year i.e. during 2006-07 we are projecting benefits for rest of nine month i.e. from April 2006 to December 2006 without any financial expenditure incurred by company)					
First year other savings, Rs.: . There were numerous other savings lesser tripping, higher efficiency of equipment which cannot be quantified.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	NA	NIL	NIL	NIL	NIL
Energy consumption after	NA	NIL	NIL	NIL	NIL
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	Rs. 6.00	NIL	NIL	NIL	NIL
The savings in energy consumption in absolute terms could not be recorded and compared as the load factor increased in mine during intervening period.					

Company complete address: Chief (Elect.), MOIL, Balaghat Mine	We authorise Bureau to use this information for dissemination
Contact person who could be contacted for more information: Chief (Elect.), MOIL, Balaghat Mine 07632-245046	Signature Date

NATIONAL ENERGY CONSERVATION AWARD - 2007

Evaluation Criteria – Large & Medium Scale Industries

S. No	Evaluation Criteria
1	Implementation of energy conservation measures
	Energy savings in Lacs for 2006-07 - Rs 184.235 Lacs
	Savings as % of energy cost over previous year (2005-06) - 40.316
2	ENERGY SAVINGS- Electrical and Thermal
i	Electrical energy savings in lakh kWh (2006-07) - Rs. 8.086 Lacs
	% savings in EE over the previous year (2005-06)- 12.062
ii	Thermal energy savings in million KCal (2006-07)- Not Applicable
	% savings in Thermal Energy over the previous year (2005-06) Not Applicable
3	SPECIFIC ENERGY CONSUMPTION REDUCTION
	Electrical SEC 2005-06 - 31.144
	Electrical SEC 2006-07 - 31.01
i	% Elect. SEC reduction during 2006-07 over 2005-06 0.430
	Thermal SEC 2005-06 Not Applicable
	Thermal SEC 2006-07 Not Applicable
ii	% Thermal SEC reducing during 2006-07 over 2005-06 Not Applicable
	Electrical SEC 2004-05 31.884
	Electrical SEC 2005-06 – 31.144
iii	% Elec. SEC reduction during 2005-06 over 2004-05 2.32
	Thermal SEC 2004-05 - Not Applicable
	Thermal SEC 2005-06 - Not Applicable
iv	% Thermal SEC reduction during 2005-06 over 2004-05- Not Applicable
4	Annual energy savings in 2006-07/ Annual Sales turnover in 2005-06(%) – 2.654 %
5	Latest technology employed in 2006-07 and savings achieved -Rs. 184.235Lacs
6	Use of Renewable energy technology and savings achieved – Rs. 128.095 Lacs
7	Specific Energy Consumption Comparisons with the best reported values among the participating units
8	SEC TARGETS PLANNED/ACHIEVED - Planned 31, Achieved 31.01 during 2006-07
9	Organizational set up for energy conservation
	a) EC Cell formation : Yes details enclosed
	b) Appointment of Energy Manager : Yes details enclosed
	c) EC Cell Structure : Details enclosed
	d) Energy Auditing & Monitoring : Yes, monthly at unit level and once in three years by outside agency.
	e) Top Management commitment : Energy cell headed by Director (P&P), all the policy decisions regarding energy conservation taken by functional directors and chairman of the company. Management is committed for energy conservation and in last two years company has implemented Wind Energy Generators Project worth Rs. 9900 Lacs.

10	Commitment to Environment & Safety
	a) Issue of consent order on Air Pollution : Company is committed to clean and green environment and safety of all employees. MOIL conducts regular testing of air sample at all unit levels and air pollution is kept within permissible limits. A corporate level department of safety is headed by high level officers and each unit of mine as well as plant has safety officer overseeing and analyzing various matters related with safety.
	b) Issue of consent order on Water Pollution : Water pollution is checked regularly by sending sample to National Environmental Research Institute, Nagpur.
	c) Extra effort put in by Plant to safety : A safety committee has been informed at mine level. The committee meets every month to discuss analyse and solve various matters related with safety. The unit had of mine has been empowered to execute jobs related with safety to avoid delay in implementation.
	d) Top Management commitment to safety : Management has appointed a safety officer of Dy.G.M. (Safety) reporting directly to Chairman-Cum-Managing Director. All unit heads at mine level are directly reporting to Dy.G.M. (Safety) for safety purposes.
	e) Level of safety activities : MOIL is a mining organization and there are various levels at which safety of man and machine is checked. The level of safety starts right from Mine mate, Foreman, Shift boss, Asstt. Manager, U/G Manager.
11	Presentation of Data as per the Award Questionnaire format
	a) Presentation: Enclosed.
	b) Completeness of data: All the data has been enclosed.
	c) Attachment of Annual Reports: Yes
	d) Attachment of photographs of the projects implemented: Yes
	e) Write up about the company: Yes

