



Energy Conservation Measure implemented in 2007-2008


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

ID to be filled by BEE	Title of the measure Increasing the numbers of stages of distillation columns	Sector: Chemical			
Year to be filled by BEE		Technology: Optimisation of distillation			
<p>Description of the energy conservation measure:</p> <p>We have reduced the energy consumption with decreasing the reflux ratio by increasing the numbers of stages of distillation column no. 120 in acetic anhydride plant. In reflux ratio vapour coming from the top of the distillation column, cooled by CT water and again enter in the distillation column. By reducing the reflux ratio, we reduced the pumping cost of circulation of CT water as well as steam consumption in the column.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email):					
Total investment, RsLakhs 6			Year of implementation: 2007 - 08		
First year energy cost savings, 18.38 Lakhs					
First year other savings, Rs.:					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	3.96	--	--	--	15840
Energy consumption after	3.56	--	--	--	13860
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
Company complete address: IOL Chemicals & Pharmaceuticals Ltd Village Fatehgarh Channa, Mansa Road, Barnala - 148101				We authorize Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Sh. Damandeep Singh (Sr. Vice President) Email: damandeep@iolcp.com				Signature	
				Date	

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ID to be filled by BEE	Title of the measure Installation of additional cooling tower	Sector: Chemical			
Year to be filled by BEE		Technology: Heat Transfer Rate			
<p>Description of the energy conservation measure: We have installed the cooling tower with capacity 1500m³/hr. It is used as a additional source of cooling in summer and humid reason .The temperature of cooling water is maintained with this additional cooling tower and maintain the delta (difference between inlet and outlet temperature of cooling water). Ultimately power consumption is reduced by reducing the pumping cost of cooling tower.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
Not Available					
Agency that executed the project (with complete address and email):					
Total investment, Rs 50 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 11.22 Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	7.60	--	--	--	--
Energy consumption after	5.10	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
Company complete address: IOL Chemicals & Pharmaceuticals Ltd Village Fatehgarh Channa, Mansa Road, Barnala - 148101 Contact person who could be contacted for more information: Sh. Damandeep Singh (Sr. Vice President) Email: damandeep@iolcp.com				We authorize Bureau to use this information for dissemination Signature Date	

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ID to be filled by BEE	Title of the measure Cascading of cooling tower(CT) water flow	Sector: Chemical			
Year to be filled by BEE		Technology: Cascading of utilities			
<p>Description of the energy conservation measure: By installing the cascading system, we have reduced the pumping cost by reducing the circulation of 600 m³ per day cooling water. In cascading system, the outlet CT water from one heat exchanger is used as an inlet for other heat exchanger in process for obtaining the optimum delta of cooling water.</p>					
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.: 4 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, 23.47 Lakhs					
First year other savings, Rs.:					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	10.6	--	--	--	--
Energy consumption after	5.31	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Replacement of conventional motors with energy efficient motors	Sector: Chemical			
Year to be filled by BEE	motors	Technology: Hystersis losses			
Description of the energy conservation measure: We have replaced the conventional electric motors with energy efficient motors. By using these motors, load on motors are decreased and power saved.					
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 3.5 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 3.21 Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	6.65	--	--	--	--
Energy consumption after	5.92	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Heat Exchanger(HE) Networking System	Sector: Chemical			
Year to be filled by BEE		Technology: Heat Exchanger networking			
Description of the energy conservation measure: We have done heat exchanger networking; so that process stream's energy transfer can take place such a way that ultimate load on steam and power gets reduced.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email):					
Total investment, RsLakhs 12			Year of implementation: 2007 - 08		
First year energy cost savings, 2.37 Lakhs					
First year other savings, Rs.:					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	1.188	--	--	--	31680
Energy consumption after	0.968	--	--	--	31515
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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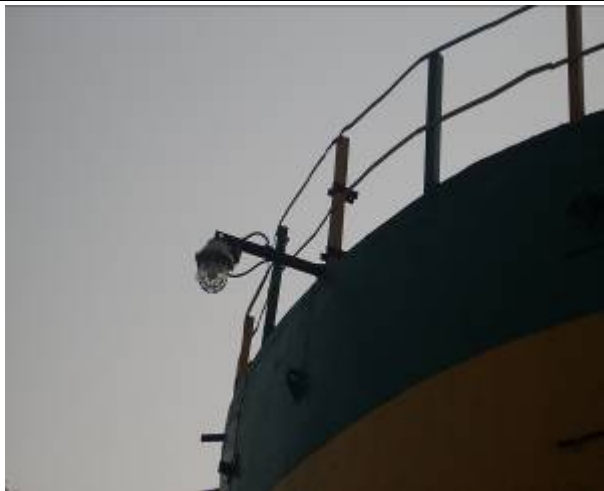
(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure Improvements in electrical system	Sector: Chemical			
Year to be filled by BEE		Technology: Autimisation			
<p>Description of the energy conservation measure:</p> <p>We have increasing the reliability of the system by modification in electrical system. We have improved our electrical system by doing the following work.</p> <ol style="list-style-type: none"> 1. Diesel Generator (DG) to DG auto synchronization, Auto starting and load shedding power management system for stand by DG sets. 2. Capacitor panel installation, To reduce KVA demand, which further reduces load of motors, lesser bourdon of amperes on cable and switchgear. 3. Soft starter installation for feed pumps of 32MT boiler to make starting smoother and lesser breakdown. 4. Installation of microprocessor based fast acting protection relays for transformer and generator also. <p>All MCCs hooked up with DCS to make more reliable and fast controlling of motors start/stop system</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
Not Available					
Agency that executed the project (with complete address and email):					
Total investment, Rs 25 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, 11 Rs Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	20.0	--	--	--	--
Energy consumption after	17.5	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Installation of metal halides light in place of high pressure sodium vapour lamps	Sector: Chemical			
Year to be filled by BEE		Technology: High illumination intensity			
Description of the energy conservation measure: We have improved the illumination system and reduced the power consumption by replacing the High pressure sodium vapour lamps with MH (Metal Halide) lights.					
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 5 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 3.32 Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	1.66	--	--	--	--
Energy consumption after	0.91	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure Process waste water management	Sector: Chemical			
Year to be filled by BEE		Technology: Recycling			
<p>Description of the energy conservation measure: Process water recycling system has been installed for reusing the process waste water. In earlier system we were separately used the fresh water for Ethyl acetate crude washing and Acetic Anhydride vacuum pump. Now we are storing the process waste water of ethyl acetate plant in a storage tank. This stored water is cooled down in heat exchangers by Cooling Tower water and chilled water and using it to Acetic Anhydride. By using this, we have reduced the load on ETP, Reduced pumping cost of tube well and save the under ground water.</p>					
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 10 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs.1.55 Lakhs					
First year other savings, Rs.: Natural resources (Water) saving 200 m3 per day.					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	1.584	--	--	--	--
Energy consumption after	1.234	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
Company complete address: IOL Chemicals & Pharmaceuticals Ltd Village Fatehgarh Channa, Mansa Road, Barnala - 148101 Contact person who could be contacted for more information: Sh. Damandeep Singh (Sr. Vice President) Email: damandeep@iolcp.com				We authorize 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 Rain water harvesting(recycling) system		Sector: Chemical		
Year to be filled by BEE			Technology: Water Management		
Description of the energy conservation measure:					
<p>It is very convenient system for reusing the rain water which collects from our different plants buildings roofs like chemical packing shed, Engineering store and Chemical plant, It is collectively combined into one common header, linked to open tank having filter media like sand, stone and brick mixture. Which poured back onto sand Level bored into ground through 6 pipes of 5 inches? Through this tank we also harvest our tree plantation scheme in company complex. We save our natural resources (water) and doing best efforts to maintain the level of underground water. We save power which was used for plantation in earlier system</p>					
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 12 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 0.15 Lakhs					
First year other savings, Natural resources (water)					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	0.049	--	--	--	--
Energy consumption after	0.0195	--	--	--	--
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Implementation of Reactive distillation in place of conventional distillation	Sector: Chemical			
Year to be filled by BEE		Technology: Reactive Distillation			
<p>Description of the energy conservation measure: Reactive distillation (RD) is a unit operation that combines a chemical reaction step with a distillation of the reaction materials in the same vessel. Due to this, during the course of the reaction, separation of the reaction mixture components occur and much higher conversion can be obtained in comparison to traditional batch and continuous- flow reactors. It offers some very attractive potential advantages in energy efficiency and capital cost over some conventional process scheme that utilizes chemical reaction followed by distillation.</p>					
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.:200 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, 90.8Lakhs					
First year other savings, Rs.:					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	6.3	--	--	--	63360
Energy consumption after	0.792	--	--	--	55440
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Installation of separate condensate water system		Sector: Chemical		
Year to be filled by BEE			Technology: pressure Management		
Description of the energy conservation measure: We have replaced the single steam condensate water header with low and high pressure steam condensate water headers. In chemical process, two types of steam condensate water generate, one is on low pressure and second is on high Pressure. In earlier system, both pressures steam condensate water was mixed in a header and lot of amount flash Steam was produced. By separating both headers, flash steam gets reduced. And we have saved the thermal energy.					
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 7 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 9.9 Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	--	--	--	--	15840
Energy consumption after	--	--	--	--	14652
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Make up boiler feed water	Sector: Chemical			
Year to be filled by BEE		Technology: Energy Management			
Description of the energy conservation measure: We have installed the DM water heating system. We are heating up DM water (Boiler feed water) from process streams which ultimately save the steam.					
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 8 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 13.3 Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	--	--	--	--	26136
Energy consumption after	--	--	--	--	24552
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Maximum Capacity Utilization		Sector: Chemical		
Year to be filled by BEE			Technology: Total Productive Management		
<p>Description of the energy conservation measure: We have made the process running more efficient with maximum capacity utilization. We have minimizing The breakdowns by 1) Total preventive maintenance 2) proper selection of MOC such as SS-316, Incolloy, Graphite etc 3) Atomization of critical parameters & 4) With highly equipped Lab such as gas Chromatography for checking the purity of chemicals accurately.</p>					
Picture/ sketch/ drawing before modification (if available)		Picture/ sketch/ drawing after modification			
Not Available					
Agency that executed the project (with complete address and email):					
Total investment, Rs 40 Lakhs			Year of implementation: 2007 - 08		
First year energy cost savings, Rs 47.35 Lakhs					
First year other savings,					
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)
Energy consumption before	23.76	--	--	--	79200
Energy consumption after	18.76	--	--	--	76200
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--
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ID to be filled by BEE	Title of the measure Using optimum Ratio of Hot air & Fresh air with FO in furnace		Sector: Chemical			
Year to be filled by BEE			Technology: Fuel Ratio controller			
Description of the energy conservation measure: FO (Furnace oil) used as a fuel in furnace for heating. By using the optimum ratio (with ratio controller) of hot air and fresh air with FO in the furnace and reduced the consumption of FO.						
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 2 Lakhs			Year of implementation: 2007 - 08			
First year energy cost savings 12 Lakhs						
First year other savings, Rs.:						
On annual basis	kWh Lakhs	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Steam(MT)	
Energy consumption before	--	--	--	1791.684	--	
Energy consumption after	--	--	--	1734.624	--	
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	--	--	--	--	--	
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