



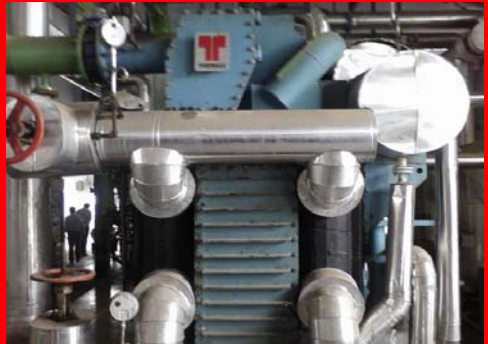
## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Provision of VFD for VAHP cooling tower fan. Central Utility, Waluj.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. To reduce electrical energy of cooling tower fan. 2. To maintain optimum temp.of cooling water for VAHP machine.  <b>Observation Made:</b> 1. Cooling water temperature dropped below machine requirement & machine tripped on low temperature. 2. Fan operation was at manual mode & without VFD.  <b>Technical &amp; financial analysis:</b> <b>Provided VFD for VAHP cooling tower fan.</b>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.: 0.20 Lacs.		Year of implementation: April-2007			
First year energy cost savings, Rs.: 1.81 Lacs.					
<b>Impact of implementation :</b> 1. Payback period: 45 days. 2. Reduction in power consumption. 3. Auto control system.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	141.91	—	—	—	—
Energy consumption after	89.91	—	—	—	—
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	3.5	—	—	—	—
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.				Signature  Date	
Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com					



## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Conversion of VAHP m/c. from single effect to double effect. Central Utility, Waluj.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. To reduce steam consumption of VAHP machine.  <b>Observation Made:</b> 1. VAHP m/c. steam load was high 3.825 MT/Hr. 2. If VAHP SE machine is converted to DE machine, the consumption can reduce to 2.02MT/Hr.  <b>Technical &amp; financial analysis:</b> <b>Conversion of VAHP m/c. from single effect to double effect.</b>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Thermax Ltd. Pune & In house maintenance team.					
Total investment, Rs.: 60.00 Lacs.			Year of implementation: April-2007		
First year energy cost savings, Rs.: 207.55 Lacs.					
<b>Impact of implementation:</b> 1. Payback period: 3 Month. 2. Reduction in Steam & fuel consumption. 3. Reliable service for plant demand.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	—	—	—	2380	—
Energy consumption after	—	—	—	1256.88	—
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	—	—	—	18480	—
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad. Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com				Signature  Date	



## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Commissioning of 40TR &amp; 100TR                  VCC Chiller m/c. Central Utility,                  Waluj.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. Steam cost was higher due to rise in F.O. cost by 36% in a year.					
<b>Observation Made:</b> 1. If we commission available VCC machine of Capacity 40TR & 100TR, we can save steam & energy cost.					
<b>Technical &amp; financial analysis:</b> <b>Commissioning of 40TR &amp; 100TR VCC Chiller m/c.</b>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.: 4.0 Lacs.		Year of implementation: June- July 2007			
First year energy cost savings, Rs.: 20.91 Lacs. (FO cost saved-57.97 lacs & additional electric cost increased-37.04 Lacs)					
<b>Impact of implementation:</b> 1. Payback period: 6 Month. 2. Reduction in Steam & fuel consumption. 3. Reliable service for plant demand.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0	-	-	1256.88	-
Energy consumption after	-1058.40	-	-	943.28	-
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	3.5	-	-	18480	-
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.				Signature  Date	
Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com					

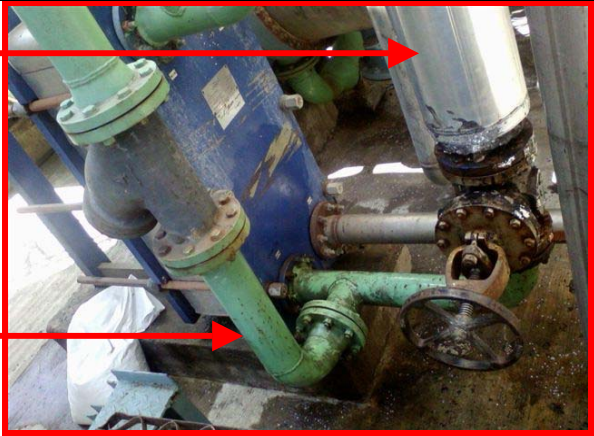
## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Conversion of Boiler from furnace oil to Bio-coal firing. Central Utility, Waluj.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. Furnace oil cost high. 2. Utilization of renewable energy to reduce CO2 emission.  <b>Observation Made:</b> 1. Spare boiler is available & can be converted to Biomass firing at lower output. (i.e. 1.5 to 2.0 MT/Hr. Steam generation)  <b>Technical &amp; financial analysis:</b> <b>Conversion of Boiler from furnace oil to Bio-coal firing.</b>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.: 0.20 Lacs.		Year of implementation: DEC 2007			
First year energy cost savings, Rs.: 42.78 Lacs.					
<b>Impact of implementation:</b> 1. Payback period: One week. 2. Reduction in Furnace oil consumption. 3. Reduction in steams cost.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	—	—	—	4745	—
Energy consumption after	—	—	—	4513.48	—
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	—	—	—	18480	—
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.				Signature	
Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com				Date	

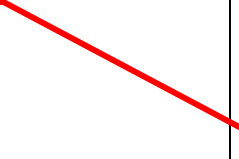

## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Provision of cooling water to poly plant cutter instead of chilled water</b> <b>Poly Plant, Waluj.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. To convert poly cutter operation from chilled water to cooling water.					
<b>Observation Made:</b> 1. By partial conversion of poly cutter on cooling water we can save 200 TR/Hr. 2. Spare available heat exchanger can be used for cooling of hot water from cutter. 3. Additional heat exchanger for hot water cooling can be provided with cooling water which will reduce 200 TR/Hr load on chilled water system.					
<b>Technical &amp; financial analysis:</b> <b>Provision of cooling water to poly plant cutter instead of chilled water</b>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
<div style="border: 1px solid red; padding: 5px; margin-bottom: 10px; width: fit-content;">                     Poly cutter chilled water supply isolated.                 </div> <div style="border: 1px solid red; padding: 5px; width: fit-content;">                     Poly cutter cooling water supply lineout.                 </div>					
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.: 0.50 Lacs.		Year of implementation: April-2007			
First year energy cost savings, Rs.: 97.57 Lacs.					
<b>Impact of implementation:</b> 1. Payback period: one week. 2. Reduction in Furnace oil consumption.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	—	—	—	528	—
Energy consumption after	—	—	—	0	—
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	—	—	—	18480	—
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.				Signature  Date	
Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com					

## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Optimization of ejector cooling tower. Poly Plant, Waluj.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:					
<b>Background of the Project:</b>					
1. Two nos. of cooling water pump were in operation.					
<b>Observation Made:</b>					
1. Cooling tower fills observed heavily due to process material.					
2. Cooling tower fan current observed lower & that indicated margin to improve fan blade angle.					
<b>Technical &amp; financial analysis:</b>					
<b>Optimization of ejector cooling tower. After cleaning of cooling tower fills during shutdown &amp; by increasing cooling tower fan blade angle one cooling water pump was stopped.</b>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
<div style="border: 2px solid red; padding: 5px; display: inline-block;">                     Only one pump is in operation                 </div> 					
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.:0.50 Lacs.			Year of implementation: Sept-2007		
First year energy cost savings, Rs.:17.64 Lacs.					
<b>Impact of implementation:</b>					
1. Payback period: One day.					
2. Reduction in Furnace oil consumption.					
3. Reduction in steams cost.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	10.08	—	—	—	—
Energy consumption after	5.04	—	—	—	—
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	3.50	—	—	—	—
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.				Signature	
Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com				Date	

## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>Palletizing return water pump replaced by high efficient pump. Film Plant, CHK</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. Used of energy efficient pump for Palletizing return water.  <b>Observation Made:</b> 1. Existing pump efficiency was 60% 2. Higher efficient pump (80%) are available in market.  <b>Technical &amp; financial analysis:</b>  <b>Palletizing return water pump replaced by high efficient pump</b>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.: 0.30 Lacs.			Year of implementation: Aug-2007		
First year energy cost savings, Rs.: 1.23 Lacs.					
<b>Impact of implementation:</b> 1. Payback period: One month. 2. Reduction in power consumption.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	65.70	=	=	=	=
Energy consumption after	30.66	=	=	=	=
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	3.50	=	=	=	=
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.				Signature	
Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com				Date	

## Energy Conservation Measure implemented in 2007-2008

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

	Title of the measure <b>K.G.Khosla compressor operation stopped by taking portable compressor in line. Film Plant, CHK.</b>	Sector. Plastic (Polyester)			
		Technology .....			
Description of the energy conservation measure:  <b>Background of the Project:</b> 1. To reduce energy consumption in compressor house.  <b>Observation Made:</b> 1. Higher capacity compressors are in operation, which are unloaded some time. 2. Lower capacity compressor was put into operation & higher capacity compressor stopped to avoid energy loss during unloading.  <b>Technical &amp; financial analysis:</b> <b>K.G.Khosla compressor operation stopped by taking portable compressor in line.</b>					
<b>Picture/ sketch/ drawing before modification</b> (if available)	<b>Picture/ sketch/ drawing after modification</b>				
Agency that executed the project (with complete address and email): In house maintenance team.					
Total investment, Rs.: 0.00 Lacs.	Year of implementation:				
First year energy cost savings, Rs.: 4.20 Lacs.					
<b>Impact of implementation:</b> 1. Payback period: ---- 2. Reduction in power consumption.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	-	-	-		-
Energy consumption after	-	-	-		-
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	-	-	-		-
Company complete address: Garware Polyester Ltd. Aurangabad-Pune road, Waluj, Aurangabad.  Contact person who could be contacted for more information: Mr.V.S.Saraf Mobile No. 09822557093, Email ID – vss@garwarepoly.com				Signature	Date