




### Energy Conservation Measure implemented in 2007-2008

ID to be filled by BEE	Title of the measure <b>Installation of VFD to Raw Water pump (Jack well Pump)</b>	Sector <b>Chlor-Alkali</b>			
Year to be filled by BEE		Technology: <b>Installation of Variable Speed Drive</b>			
Description of the energy conservation measure:					
<p>The Zero discharge efforts helped TCC in reducing the water demand in the plant, with the result, the raw water pump was running at 60% loading, with a power demand of 27.5 kW against the rated 45 kW. Installation of VFD helped to save power input to 18 kW saving 9.5 kW in the power demand.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email):- <b>In House</b>					
Total investment, <b>Rs.: 1.2 Lakhs</b>			Year of implementation: <b>2007</b>		
First year energy cost savings, <b>Rs.: 2.83 Lakh</b>					
First year other savings, <b>Rs.: Nil</b>					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	<b>237.600</b>	--	--	--	--
Energy consumption after	<b>155.520</b>	--	--	--	--
Energy tariff, Rs/ kWh ...	<b>3.56</b>	--	--	--	--
Company complete address: <b>The Travancore-Cochin Chemicals Ltd, Udyogamandal P.O ,Kochi , Kerala PIN- 683501 Tel 0484 - 2545011-20, Fax 0484-2546564, Email: <a href="mailto:mail@tcckerala.com">mail@tcckerala.com</a></b>			We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: <b>K.Madhusoodanan, Energy Manager</b>			Signature		
			Date <b>20-10-2008</b>		


### Energy Conservation Measure implemented in 2007-2008

ID to be filled by BEE	Title of the measure	Sector <b>Chlor-Alkali</b>			
Year to be filled by BEE	<b>Down Sizing of Process Water Pump by reducing discharge pressure and flow requirement</b>	Technology: <b>Down Sizing of Centrifugal pump</b>			
<p>Description of the energy conservation measure:</p> <p>The Zero discharge efforts helped TCC in reducing the water demand in the plant, with that result, the process water pump was running at 75% loading, with a power demand of 83.25 kW against the rated power of 110 kW. The pump was being operated at a higher discharge pressure of 4.8 kg/cm<sup>2</sup> , which was not needed. After measuring the actual water flow and pressure requirement , the pump was replaced with smaller capacity pump with 45 kw power rating ( which was readily available in the plant) . The absorbed power of new pump was 28.25 kW only , which resulted in a power saving of 55 kW. The pumping is meeting the pressure demand at a reduced pressure of 3.7 kg/cm<sup>2</sup> .</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): <b>in -House</b>					
Total investment, <b>Rs.: Nil</b> (Used available spare)			Year of implementation: <b>2008</b>		
First year energy cost savings, <b>Rs.: 16.92 Lakhs</b>					
First year other savings, <b>Rs.: Nil</b>					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	<b>719.28</b>	--	--	--	--
Energy consumption after	<b>244.08</b>	--	--	--	--
Energy tariff, Rs/ kWh ...	<b>3.56</b>	--	--	--	--
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### Energy Conservation Measure implemented in 2007-2008

ID to be filled by BEE	Title of the measure <b>Down Sizing of filtered brine pump by avoiding level control using bypass valve</b>	Sector <b>Chlor-Alkali</b>			
Year to be filled by BEE		Technology: <b>Down Sizing of Centrifugal pump</b>			
Description of the energy conservation measure:  <p>The filtered brine pump was being operated with the bypass valve to control the level of filtered brine tank. The pump was down sized from 30 kW to 22 kW . The power absorbed by the pump reduced from 24.97 kW to 19.5 kW, by avoiding the bypass level control, with a reduction in power demand by 5.47 kW.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): <b>In-House</b>					
Total investment, <b>Rs.:2.2 Lakhs</b>			Year of implementation: <b>2008</b>		
First year energy cost savings, Rs.: <b>1.54 Lakhs</b>					
First year other savings, Rs.: <b>Nil</b>					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	<b>197.76</b>	--	--	--	--
Energy consumption after	<b>154.44</b>	--	--	--	--
Energy tariff, Rs/ kWh ...	<b>3.56</b>	--	--	--	--
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			Date : <b>20-10-2008</b>		

### Energy Conservation Measure implemented in 2007-2008

ID to be filled by BEE	Title of the measure <b>Down Sizing of Sulphuric Acid Circulation pump</b>	Sector <b>Chlor-Alkali</b>			
Year to be filled by BEE		Technology: <b>Down Sizing of Centrifugal pump</b>			
Description of the energy conservation measure:  <p>The inefficient Sulphuric acid circulation pump was replaced with a Magnetic Seal less pump to reduce power demand as well as to avoid seal leakage . The Down sizing of pump from 3.7 kW to 1.1kW helped to save power by 2.2 kW, as the absorbed power reduced from 3.25 kW to 1.05 kW.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): <b>in-House</b>					
Total investment, <b>Rs.: 0.65 Lakhs</b>			Year of implementation: <b>2008</b>		
First year energy cost savings, Rs.: 0.62 Lakhs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	<b>25.74</b>	--	--	--	--
Energy consumption after	<b>8.316</b>	--	--	--	--
Energy tariff, Rs/ kWh ...	<b>3.56</b>	--	--	--	--
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			Date: <b>20-10-2008</b>		

### Energy Conservation Measure implemented in 2007-2008

ID to be filled by BEE	Title of the measure		Sector <b>Chlor-Alkali</b>		
Year to be filled by BEE	<b>Replacement of Std Motor of EE motor:</b>		Technology: <b>EE motor</b>		
Description of the energy conservation measure:					
Replaced 30 kW motor of vacuum pump in CCF plant with EE motor of Eff 1 class which had resulted in improving efficiency by 4% and reducing power demand by 0.9 kW					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
Agency that executed the project (with complete address and email): <b>in-House</b>					
Total investment, <b>Rs.: 0.9 lakhs</b>			Year of implementation: <b>2007</b>		
First year energy cost savings, <b>Rs.: 0.23 lakhs</b>					
First year other savings, <b>Rs.: Nil</b>					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	<b>158.688</b>	--	--	--	--
Energy consumption after	<b>152.208</b>	--	--	--	--
Energy tariff, Rs/ kWh ...	<b>3.56</b>	--	--	--	--
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