

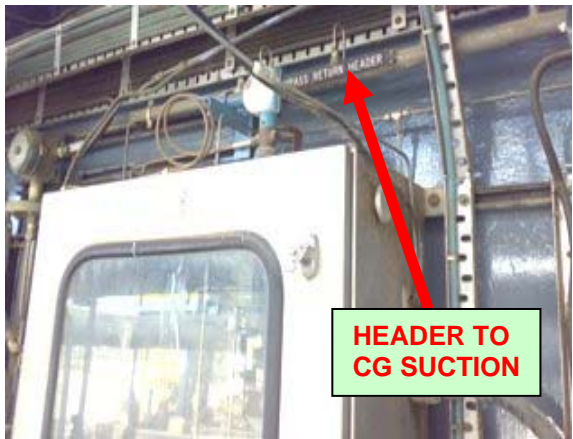
Energy Conservation Measure implemented in 2007-2008

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

ID to be filled by BEE	Title of the measure Re-routing of analyser sample stream bypass flow in Gas Cracker plant.	Sector Petrochemicals
Year to be filled by BEE		Technology Pyroletic cracking / Stone & Webster Engg. Corp. (US)

Description of the energy conservation measure:

Presently bypass flow of 14nos. of process analyzers sample stream is going to atmosphere, which is being diverted to CG first stage suction. Resulted in recovery of off gas which now being used as a fuel in CPP.

Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification
NOT AVAILABLE	

Agency that executed the project: M.H. Patel (GCU Mechanical), manu.patel.zmail.ril.com					
Total investment, Rs.: 0.1 lacs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 3.1 lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas MT	Oil (kL)	Steam MT
Energy consumption before	-	-	45777.16	-	-
Energy consumption after	-	-	45809.75	-	-
Energy tariff, Rs / Ton	-	-	9590	-	-
Company complete address: Reliance Industries Ltd. - Dahej Manufacturing Division. P.O: Dahej, 392 130. Ta: Vagra, Distt: Bharuch, Gujarat, INDIA PIN: 392130.				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Dipak Mehta, Asst. Vice President, Central Technical services department				Signature	
				Date	

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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	Sector Petrochemicals
Year to be filled by BEE	Reduction in power consumption in compressor house	Technology EIL

Description of the energy conservation measure:

Instrument air is used by all the consumer plants in the complex. Centrifugal air compressors are provided for supplying the air to user plants. After compressing the air, the moist air is dried in adsorber bed. Variation in Dew point/ moisture content is observed in instrument air which has an adverse impact on the instrumentation system used by user plants. It is also observed that the power consumption for producing the instrument air was higher than the design data. The power consumption is mainly for compression and bed regeneration activity. The six sigma project was taken up to improve dew point/moisture content of instrument air using six sigma DMAIC methodology which leads in reduction of power consumption during bed regeneration. In measure and analyze phase following causes were identified a) Poor functioning of moisture trap b) Poor monitoring of air dryer operation. Action point was developed and implemented to mitigate above causes. 1. Regular maintenance of moisture trap 2. Modification of monitoring sheets to control the power consumption.

Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
NOT APPLICABLE	NOT APPLICABLE				
Agency that executed the project: Kalpesh baria(ASU PROCESS), kalpeshkumar.k.baria@zmail.ril.com					
Total investment, Rs.: Nil	Year of implementation: 2007-08				
First year energy cost savings, Rs.: 9.1 lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	1440139	-	-	-	-
Energy consumption after	1001836	-	-	-	-
Energy tariff, Rs/ kWh	2.080	-	-	-	-
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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	Sector Petrochemicals
Year to be filled by BEE	Provision of VFD on Fire water jockey pump.	Technology EIL

Description of the energy conservation measure:



Jockey pump (91-P-151A) is supplying fire water (at 7 kg/cm²) to complex. We are having four cooling tower from which we are giving blowdown (at 7 to 7.5 kg/cm² of pressure) to maintain COC of circulating water. We have planned to utilize this blowdown as a make of fire water. Provision of VFD in jockey pump enables to utilize blowdown water as make up of fire water and power reduction of jockey pump also.

Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
NOT AVAILABLE	 <p style="text-align: center; color: red; background-color: lightgreen; display: inline-block; padding: 2px;">VFD Panel</p>				
Agency that executed the project: Pawav Barjo (O&U Electrical), pawan.barjo@zmail.ril.com					
Total investment, Rs.: 3.3 Lacs	Year of implementation: 2007-08				
First year energy cost savings, Rs.: 8.6 lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	760320	-	-	-	-
Energy consumption after	345600	-	-	-	-
Energy tariff, Rs/ kWh	2.080	-	-	-	-
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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 Installation of CFL's in complex.	Sector Petrochemicals			
Year to be filled by BEE		Technology			
Description of the energy conservation measure: Survey of buildings is being carried out by Central Engineering services of whole complex. Total 580 nos of GLS lamps replaced with energy efficient CFL lamps.					
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.: 0.41 lacs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 2.29 lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	127020	-	-	-	-
Energy consumption after	16936	-	-	-	-
Energy tariff, Rs/ kWh	2.080	-	-	-	-
Company complete address: Reliance Industries Ltd. - Dahej Manufacturing Division. P.O: Dahej, 392 130. Ta: Vagra, Distt: Bharuch, Gujarat, INDIA PIN: 392130.				We authorise Bureau to use this information for dissemination	
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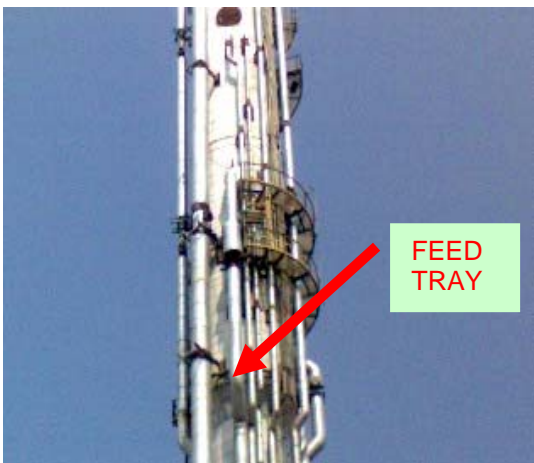
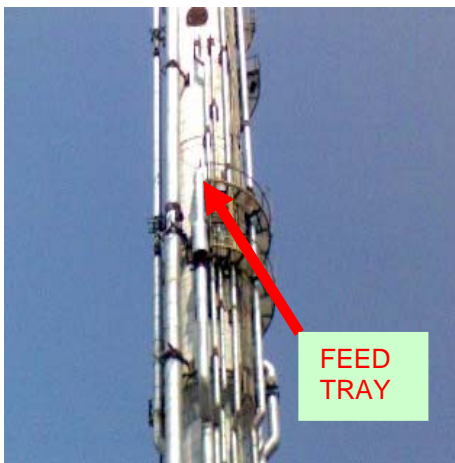
Energy Conservation Measure implemented in 2007-2008

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

ID to be filled by BEE	Title of the measure	Sector Petrochemicals
Year to be filled by BEE	Change in Feed tray location of Ethylene Tower in Gas Cracker plant	Technology Pyroletic cracking / Stone & Webster Engg. Corp. (US)

Description of the energy conservation measure:

Detailed simulation of ethylene tower done using ASPEN simulator. By changing feed tray from 80th to 76th stage resulted in steam savings of 0.8 MT/Hr. This modification in feed tray was possible due to change in feed composition as compared to design. However, the plant was running with the same feed tray since starting. This modification led to reduced condenser duty. The condenser is on Propylene refrigerant at (-) 39°C. Reduction in this duty led to reduce the Refrigerant compressor (Steam Turbine) load and hence reduction in SVH steam consumption in compressor.

Picture/ sketch/ drawing before modification	Picture/ sketch/ drawing after modification
	

Agency that executed the project: M.H. Patel (GCU Mechanical), manu.patel.zmail.ril.com

Total investment, Rs.: Nil lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 61 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Steam MT
Energy consumption before	-	-	-	-	777600
Energy consumption after	-	-	-	-	770688
Energy tariff, Rs/Ton	-	-	-	-	880

Company complete address:
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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 Hydrocarbon recovery from Cracked Gas Sour oil trap vent in Gas Cracker plant.	Sector Petrochemicals
Year to be filled by BEE		Technology Pyroletic cracking / Stone & Webster Engg. Corp. (US)

Description of the energy conservation measure:

Cracked gas Compressor K-45 uses seal oil for sealing against leak off gases. The seal oil that comes in contact with the process gas flows down to sour oil traps, which separate the gases and vent them to the atmosphere via flare. There are two traps per module and vents are routed to atmosphere through restricting orifices. A study was conducted by the plant jointly with Technology and has estimated the flow from CG vents, In view of the huge material loss that is occurring sour oil trap vent routed to CG compressor 1st stage suction. Modification leads to recovery of gas which is used in CPP as a fuel.

Picture/ sketch/ drawing before modification
(if available)

Picture/ sketch/ drawing after modification



Agency that executed the project: M.H. Patel (GCU Mechanical), manu.patel.zmail.ril.com

Total investment, Rs.: 3.5 lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 14.9 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas MT	Oil (kL)	Other
Energy consumption before	-	-	45621.76	-	-
Energy consumption after	-	-	45777.16	-	-
Energy tariff, Rs/Ton	-	-	9590	-	-

Company complete address:
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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 Installation of biogas plant in canteen.	Sector Petrochemicals
Year to be filled by BEE		Technology Not Applicable

Description of the energy conservation measure:

Installation of biogas plant in canteen for treating canteen waste with capacity of 100 kg/day. This resulted in savings of LPG.

Picture/ sketch/ drawing before modification
(if available)



Picture/ sketch/ drawing after modification



Agency that executed the project: SPERIRE. Anand.

Total investment, Rs.: 0.282 lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 2.35 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas MT	Oil (kL)	Steam MT
Energy consumption before	-	-	0.456	-	-
Energy consumption after	-	-	Nil	-	-
Energy tariff, Rs / Ton	-	-	61842	-	-

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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 Installation of solar panel at township.	Sector Petrochemicals
Year to be filled by BEE		Technology Not Applicable

Description of the energy conservation measure:

Installation of solar panel at township hostel done for body washer system. Total 104 cells installed. This leads to stoppage of water heaters in bathrooms of colony.

Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification
NOT APPLICABLE	

Agency that executed the project: R A Darwesh, ramesh.darwesh@zmail.ril.com

Total investment, Rs.: 11 lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 3.2 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas MT	Oil (kL)	Steam MT
Energy consumption before	156000	-	-	-	-
Energy consumption after	Nil	-	-	-	-
Energy tariff, Rs / KWH	2.080	-	-	-	-

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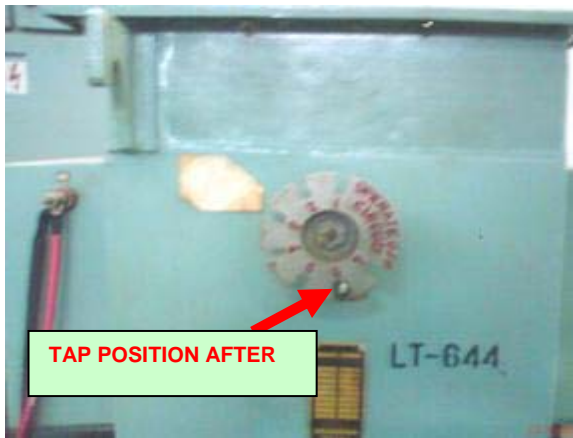
Energy Conservation Measure implemented in 2007-2008

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

ID to be filled by BEE	Title of the measure Reduction Of lighting supply voltage from 240-250 to 220-230 V.	Sector Petrochemicals
Year to be filled by BEE		Technology Indo Coil Mumbai

Description of the energy conservation measure:

Detailed survey of lighting load of different plant was measured. In 20 nos of transformers supply voltage was found in the range of 240 to 250 V. By changing tap position supply voltage was reduced to 220-230 V without any investment.

Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification
NOT AVAILABLE	

Agency that executed the project: Ashish Ray (ESD Electrical), ashish.ray@zmail.ril.com

Total investment, Rs.: NIL

Year of implementation: 2007-08

First year energy cost savings, Rs.: 0.76 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	882236.3	-	-	-	-
Energy consumption after	845768.7	-	-	-	-
Energy tariff, Rs/ kWh	2.080	-	-	-	-

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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	Sector Petrochemicals
Year to be filled by BEE	Replacement of existing GRP fan with Energy efficient FRP fan	Technology Paharpur

Description of the energy conservation measure:

There are four cooling towers in RIL DMD complex supplying cooling water to the complex. CT-01 and CT-04 are induced draft double cross-flow type of cooling tower and CT-02 and CT-03 are induced draft counter-flow type of cooling tower. The entire cooling tower has GRP fan of 10 meter diameter. Differential temperature across CT-01 is always remaining 8.5 to 9 deg C. With a view to enhance CT performance, we have changed one fan of CT 01 from GRP to energy efficient aerodynamically designed FRP fan.

Picture/ sketch/ drawing before modification
(if available)

Picture/ sketch/ drawing after modification



Agency that executed the project: M.H. Patel (GCU Mechanical), manu.patel.zmail.ril.com

Total investment, Rs.: 3.74 lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 4 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	655200	-	-	-	-
Energy consumption after	466200	-	-	-	-
Energy tariff, Rs/ kWh	2.080	-	-	-	-

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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 Replacement of CRT monitors with TFT monitors.	Sector Petrochemicals
Year to be filled by BEE		Technology Not Applicable

Description of the energy conservation measure:

As an EnCON initiative personal computer's CRT monitors were replaced with energy efficient TFT monitors.

Picture/ sketch/ drawing before modification
(if available)



Picture/ sketch/ drawing after modification



Agency that executed the project: Kaushik Yadav , kaushik.yadav@zmail.ril.com

Total investment, Rs.: 6.6 lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 1.47 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas MT	Oil (kL)	Steam MT
Energy consumption before	80520	-	-	-	-
Energy consumption after	10065	-	-	-	-
Energy tariff, Rs / Ton	2.080	-	-	-	-

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

ID to be filled by BEE	Title of the measure	Sector Petrochemicals
Year to be filled by BEE	Replacement of faulty steam traps and arresting small steam leakages in steam header.	Technology EIL

Description of the energy conservation measure:

Steam is transported to all plant via long network of piping. Detailed surveys was being carry out of steam traps and yard piping of steam header by the plant jointly with Technology. Passing traps and small leakages were identified. Passing traps were replaced with new one and during this opportunity small leakages were also being attended.

Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification
NOT AVAILABLE	

Agency that executed the project: Dinesh Ahir (CPP Mechanical), dinesh.ahir@zmail.ril.com

Total investment, Rs.: 3.08 lacs

Year of implementation: 2007-08

First year energy cost savings, Rs.: 385.4 lacs

First year other savings, Rs.: Nil

On annual basis	kWh 000'	Coal (Tons)	Gas MT	Oil (kL)	Steam MT
Energy consumption before	-	-	-	-	87600
Energy consumption after	-	-	-	-	43800
Energy tariff, Rs / Ton	-	-	-	-	880

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