

THE ANDHRA SUGARS LIMITED

Saggonda, Distt. West Godavari (Andhra Pradesh)

Unit Profile

The Andhra Sugars Ltd., C & F Division was established in the year 1960 at Kovvur, W.G. District, A.P. for production of Single Super Phosphate with Sulphuric Acid Plant having an installed capacity of 50 TPD subsequently in the year 1984, Sulphuric Acid Plant was converted to DCDA process with 100 TPD increased capacity.

A 30 TPD Caustic Soda Plant was set up in the year 1965 and increased capacity up to 140 TPD in the year 1980.

The Andhra Sugars Limited had installed 100 TPD Caustic Soda Plant with Energy Efficient Membrane technology DENORA Electrolyzers at SAGGONDA Village in the year 1997 and it had been expanded to 200 TPD with addition of 100 TPD UHDE Electrolyzers in the year 2002 and stopped Caustic Soda production with Mercury electrolyzers at Kovvur Plant. In the years 2005 & 2006 Caustic Soda Plant had been further expanded stage by stage to 400 TPD with UHDE Electrolyzers at Saggonda Village, W. G. Dist., A. P.



Energy Consumption Details and Achievements

The Table below shows the Specific Energy consumption figure of the unit during last two years.

Parameter	Unit	2009-2010	2010-2011
Electrical Energy	kWh/ Ton of Caustic Soda	2716	2576
Thermal Energy	MKcal / Ton of Caustic Soda	1.014	0.834

Energy Conservation Commitment, Policy and Set Up

1. Promote Energy saving and conservation of re-sources.
2. Comply with the Energy legislation and other regulation.
3. Promote use of Energy efficient alternatives.
4. Communicate Energy Management Policy to all employees and encourage their involvement through training and participation.
5. Maximizing capacity utilisation.
6. To move an effort to reduce the loss continuously every year by adopting effective Energy Management System.

Energy Conservation Achievements

During the period 2010-2011, the unit implemented several energy conservation measures. Annual saving of around Rs. 777 Lakhs in 2010-2011 was achieved with the investment of Rs. 4068 Lakhs.

Major Projects Implemented during 2008 – 2010

Energy Savings:

1) Installation Variable Frequency Drives for Various Brine Pumps:

Andhra Sugars has installed 7 nos of VFDs for Various Brine pumps to maintain Pressure & Tank levels in place of Control valves. This way energy is saved by reducing Motor speed from 2950 rpm to about 2000 rpm. This saves energy required for running the motor and also meeting the requirement.

Before VFD's Installation:

- 4 Pumps Consumption : 9,50,400 kWh
- 3 Pumps Consumption : 3,56,400 kWh
- Total Consumption : 13,06,800 kWh

After VFD's installation

- Power Consumption : 7,92,515 kWh
- Power Saving in KWH : 5,14,285 kWh
- Saving in power after installation of VFD's : Rs. 18 Lacs/ Annum
- Investment for the VFD's : Rs. 16 Lacs
- Pay Back period : 0.9 years



2) Auto On/Off Provision to the Cooling Water Fans:

Plant has provided AUTO ON/OFF provision to 5 nos of Cooling Tower fans based on the Cooling water Temperature. Previously all the cooling water fans are used to run continuously irrespective of temperature. After providing the AUTO ON/OFF provision Cooling tower fans are getting stopped once the temperature reaches to the 30 Deg. C and again getting started automatically once the temperature reaches to 32 Deg. C. Due to this Energy is being saved as detailed below.

- Power Consumption Before auto ON / OFF : 8,71,200 KWH
- Power Consumption after auto ON/ OFF : 7, 28,343 KWH
- Power Saving due to the above in KWH : 1,42,857 KWH
- Saving in Power : Rs. 5 Lacss / Annum
- Additional Investment for the above : Rs. 2 Lacss
- Pay Back Period : 5 Months



3) Clarified Brine System Modification:

Plant is expanded stage by stage from 100 TPD to 400 TPD Caustic Soda production from 1997 to 2008. Due to this 2 streams of Brine Circuit was provided with 50HP Motors. But it was observed that there is still capacity in the Pumps to give more flow. Hence, plant has interconnected the 2 streams and operating with only one pump.



- Power Consumption for 2 Pumps (Each 50 HP) :2,77,200 KWH
- Power Consumption for Single Pump : 1,62,914 KWH
- Power Saving : 1,14,286 KWH
- Additional Investment : NIL
- Saving in Power : Rs. 4.0 Lacss

4) New Energy Efficient Membranes Replacement:

Plant has replaced the High power consumed Membranes with low power consumed Membranes during the normal coarse of Membrane replacement to reduce the Power Consumption and to increase the Efficiency of the plant in the year 2010.

- Due to this Saving in Power is : 14, 28,570 KWH
- Saving in Cost due to above : Rs. 50 Lacss / Annum
- Savings due to Higher Efficiency : Rs. 20 Lacss / Annum
- Investment : Rs. 2.5 Crores



5) Replacement of Electrolysers:

Andhra Sugar has installed 100 TPD plant in 1997 with Bi-polar Electrolysers. As the Power consumption in those electrolysers is very high, it was decided to replace those electrolysers with latest high efficient and low power consumed electrolysers in 2010.

Due to this saving in Energy are as follows:

- Power Saving in KWH :100,00,000 KWH
- Saving in Power due to the above : Rs. 3.5 Crores / Annum
- Saving due to higher efficiency : Rs. 2.5 Crores/ Annum
- Additional Investment : Rs. 34.0 Crores



6) Recoating of Old Electrodes:

Plant has installed 100 TPD plant of in the Year 2003, the Electrodes are needs to be recoated once in every 8 years. In that, plant has recoated some of the Electrodes in the year 2010 for better performance in terms of Power consumption and Current Efficiency. Due to this recoating saving in Energy consumption is as follows:-

- Power Saving in KWH :17,14,286 KWH
- Saving in Power due to the above : Rs. 60 Lacss / Annum
- Savings due to higher efficiency : Rs. 20 Lacss / Annum
- Additional Investment : Rs. 4.0 Crores.



Total Investment and Savings during the year 2010 - 2011 for Energy Conservation:

Total Investment : Rs. 40.68 Crores
Total Savings due to the above modifications : Rs. 7.77 Crores / Annum.