



Surya Energy Conservation Projects



Unit Profile

Syngenta is a world-leading agribusiness committed to sustainable agriculture through innovative research and technology. The company is a leader in crop protection and ranks third in the high-value commercial seeds market. Sales in 2002 were approximately \$6.2 billion. Syngenta employs some 19,000 people in over 90 countries. Syngenta is listed on the Swiss stock exchange (SYNN) and in New York (SYT).

Syngenta India Ltd

Santa Monica Works in Goa

The Santa Monica Works in GOA is major Chemicals Production Base.



Nestling on 200 acres of land, beautifully bordered by thousands of creepers of flowering bougainvillea and dotted within with hundreds of Ashoka trees, mango and coconut groves, cashew plantations and rose bushes, Santa Monica Works is a living testimony to nature and chemistry thriving in harmony. And that is how it was conceptualized way back in 1962 when our company bought over what seemed an endless terrain, spersed with forests, from the nunnery of Santa Monica, in whose honour the Works is named.

A committed, well-trained, qualified workforce who take pride in their work, form our human resource asset. Engineers, Chemists, Environmental specialists, backed by production personnel and administrative staff work as a cohesive team to offer some of the best products in the business sectors in which we operate. More than 90% of the Santa Monicaites are from Goa itself and a majority of them have been with us since the inception of the works over three decades ago.

In 1972, Santa Monica Works began in a small way manufacturing active ingredients for our quality plant protection agents. Today, it has evolved into a major chemical production base for our company.

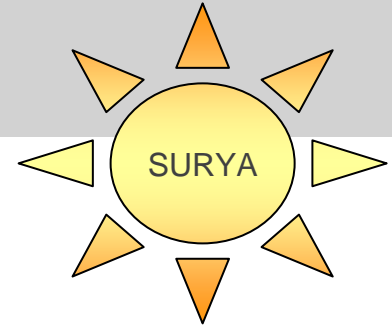
The Crop Protection Products range comprises:

- Insecticides for control of pests affecting food and cash crops. - Fungicides against pest diseases. - Herbicides for weed control, particularly in food crops.

Commissioned in 1972, for the manufacture of only formulations, this plant has indeed come a long way. A continuous expansion programme to enable us meet growing market needs has seen the Crop Protection Plant rise to the level of a modern sophisticated Crop Protection production unit which plays an important role in India's agricultural sector..

Syngenta worldwide has been all along committed to the cause of environmental protection. In India, too, the company accords the topmost priority to producing environmentally safe products, with due consideration given to matters concerning toxicology, eco-toxicology and waste disposal.

Energy Conservation Policy



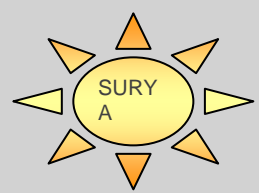
Conserve energy resources

Preserve the environment

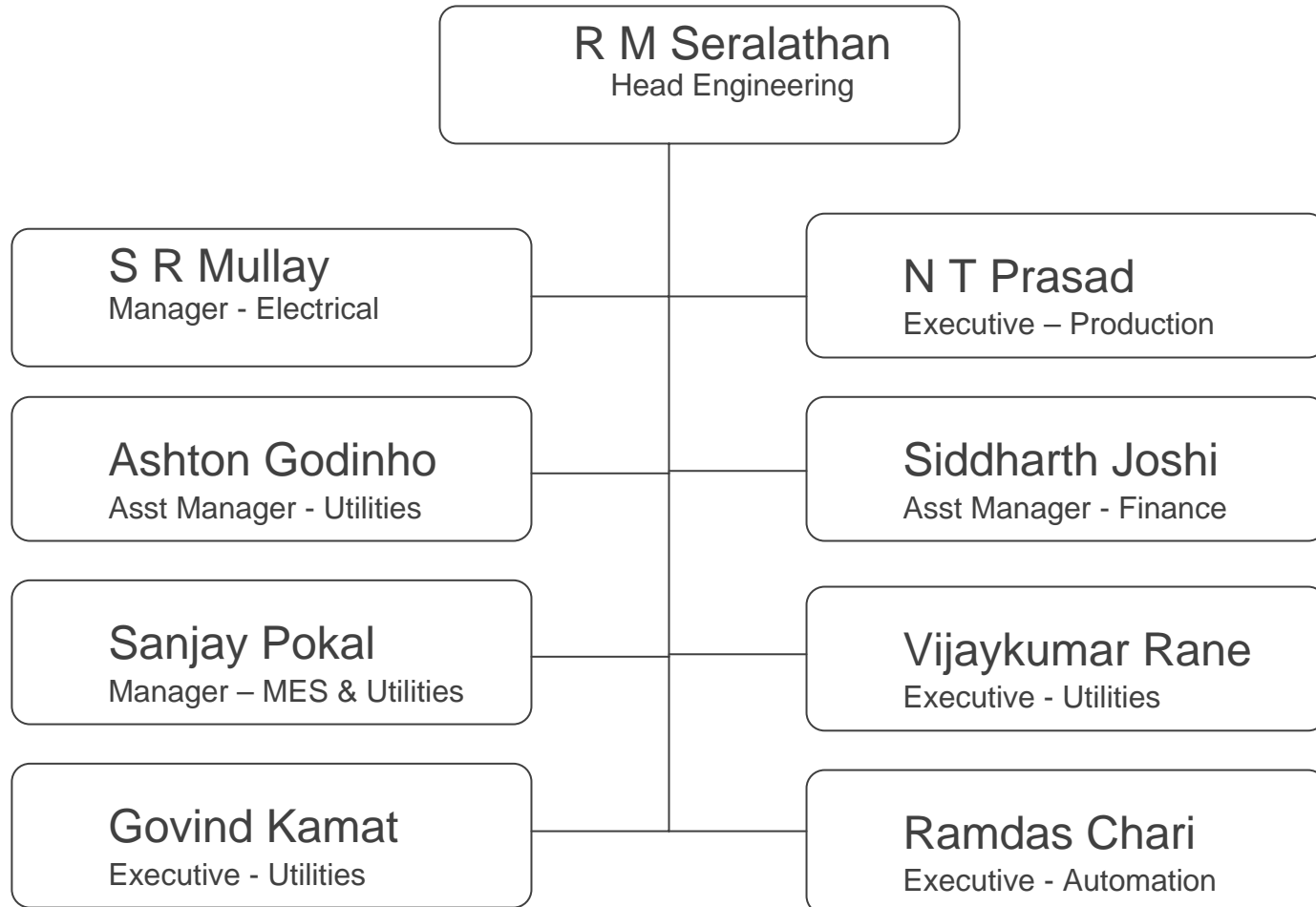
We will comply with the local regulations and follow all new developments that could influence the supply of energy, considering these developments while planning of all future expansions at Santa Monica Works.

We will optimize conversion of the primary delivered energy such as fuel and electric power into usable secondary energy forms such as thermal and mechanical energy.

We will ensure efficient use of secondary energy for our production processes and infrastructure operations.



“SURYA” The energy conservation team



DESCRIPTION ON INDIVIDUAL ENERGY SAVING INITIATIVES

Incorporation of Variable Frequency drives for MEG brine , Factory water & Methanol brine supply pumps

The flow of MEG brine, Factory water and Methanol brine varies based on the process requirements but the pumps will be operated at full load and runs in constant speed which leads to energy losses. A pressure sensor was provided in the circulation line and this controlled the speed of the pump based on the requirements & maintaining a constant head. When the consumption in the plant was less it reduces the speed of the pump and save energy.



Investment	: Rs 5,64,000/-
Energy Savings	: 136596 Kwh
Saving	: Rs 10.93 Lakhs/ annum.

Replacement of Cooling tower aluminium fan with energy efficient FRP fan.

The existing aluminium fans of Paharpur make cooling towers (2 Nos) have been replaced with energy efficient FRP fans. These FRP fans will consume around 30% lesser than the conventional aluminium fan with 10% increase in air flow.

Investment	: Rs 1,50,000/-
Energy Savings	: 83844 Kwh
Saving	: Rs 6.7 Lakhs/ annum.

DESCRIPTION ON INDIVIDUAL ENERGY SAVING INITIATIVES

Timer controls for Bath room heaters, & Street lights

In this project we have provided the street lights with electronic timers which were earlier controlled manually. By doing this bathroom heaters & street lights start only when required time.



Investment	: Rs 10,000/-
Energy Savings	: 9948 Kwh
Saving	: Rs 0.80 Lakhs/ annum.

Brine plant cooling tower operations are controlled with thermostatic controllers with cooling water temperature input.

The cooling towers in brine plant use to run 24 hrs a day irrespective of cooling water temperature. As the brine plant equipments are designed to operate at 30 deg. C, lot of energy was wasted by operating the cooling towers at lower temperature. To minimise the operating cost & to save energy these cooling tower operation was controlled with thermostatic controllers through Data Acquisition System & set the operating band at 27 to 30 deg.C

Investment	: Rs 20,000/-
Energy Savings	: 75984 Kwh
Saving	: Rs 6.08 Lakhs/ annum.

DESCRIPTION ON INDIVIDUAL ENERGY SAVING INITIATIVES

Condensate recovery in Boiler house

In this project we have recovered flash steam & condensate from the steam traps of steam main, distribution & other lines surrounding Boiler house. We have installed a flash vessel & utilised the condensate pump available in boiler house for this purpose.



Investment	: Rs 50,000/-
Fuel Savings	: 23,643 KL
Saving	: Rs 4.95 Lakhs/ annum.

Boiler feed water pump replacement with smaller capacity.

The steam boiler designed to produce 16 TPH F&T 100 deg C was being operated at 8 TPH due to low steam requirement from plants. Feed water pump of this boiler of 15 KW rating use to operate continuously & the water level in boiler drum was maintained by a control valve in pump discharge live with boiler water level input feedback. Considering the low steam demand this pump was replaced with 11KW to lower the operating cost & to save energy.



Investment	: Rs 1,30,000/-
Energy Savings	: 27024 Kwh
Saving	: Rs 2.16 Lakhs/ annum.

DESCRIPTION ON INDIVIDUAL ENERGY SAVING INITIATIVES

Incorporation of Variable Frequency drive for cooling towers (2 nos) in Utility block

The cooling towers in utility block use to run 24 hrs a day irrespective of cooling water temperature. As the utility plant equipments are designed to operate at 30 deg. C, lot of energy was wasted by operating the cooling towers at lower temperature. A temperature sensor was provided in the cooling water line & set the operating band at 27 to 30 deg.C and this controlled the speed of the towers.

When the temperature is less it reduces the speed of the cooling tower and save energy.



Investment	: Rs 2,81,000/-
Energy Savings	: 36948 Kwh
Saving	: Rs 2.96 Lakhs/ annum.

Incorporation of Variable Frequency drive for Solid waste incinerator plant ID fan

The induced draft fan installed for this unit was creating high negative draft in furnace & scrubbing system due to fluctuation in plant load. A VFD was incorporated to control the fan speed thereby maintaining the required draft & save energy.

Investment	: Rs 2,66,000/-
Energy Savings	: 22680 Kwh
Saving	: Rs 1.81 Lakhs/ annum.

DESCRIPTION ON INDIVIDUAL ENERGY SAVING INITIATIVES

Effective operation of MEG Brine system by consistent monitoring & reducing run hours.

Operating parameters of MEG Brine chilling system was analysed through Data Acquisition and revised the compressor loading, unloading & tripping temperature settings. This has reduced the compressor running hrs from ave. 8 hrs from 14 to 15 hrs per day. Also cooling water flow to condenser stopped manually during compressor trip.



Investment : NIL
Energy Savings : 404446 Kwh
Saving : Rs 32.36 Lakhs/ annum.

Optimizing MEG brine circulation pump running hours.

MEG Brine compressor was operating for ave. 8 hrs per day, but the circulation pump running for 24hrs. Same was made manual on-off during compressor stop condition for saving energy.

Investment : NIL
Energy Savings : 59280 Kwh
Saving : Rs 4.74 Lakhs/ annum.