

GlaxoSmithKline Pharmaceuticals Limited Thane (Maharashtra)

(i) Unit Profile

GlaxoSmithKline Pharmaceuticals Limited, Thane Factory, located 35 km north of Mumbai, is a Primary Manufacturing ('actives') site. When the construction at the site started way back in 1960, it was a greenfield site. The manufacturing operations later started in 1961.

The major bulk drugs presently manufactured at the site are Betamethasone and its derivatives (Valerate, Phosphate), Calcium Sennosides of different potencies, Acid Sennosides, Treated Senna Powder, Methdilazine hydrochloride and Isogel. Betamethasone and other steroids are used for formulations for the local market. Different Senna products and Isogel are for the export market. Betamethasone derivatives constitute about 90% of the total value of production.

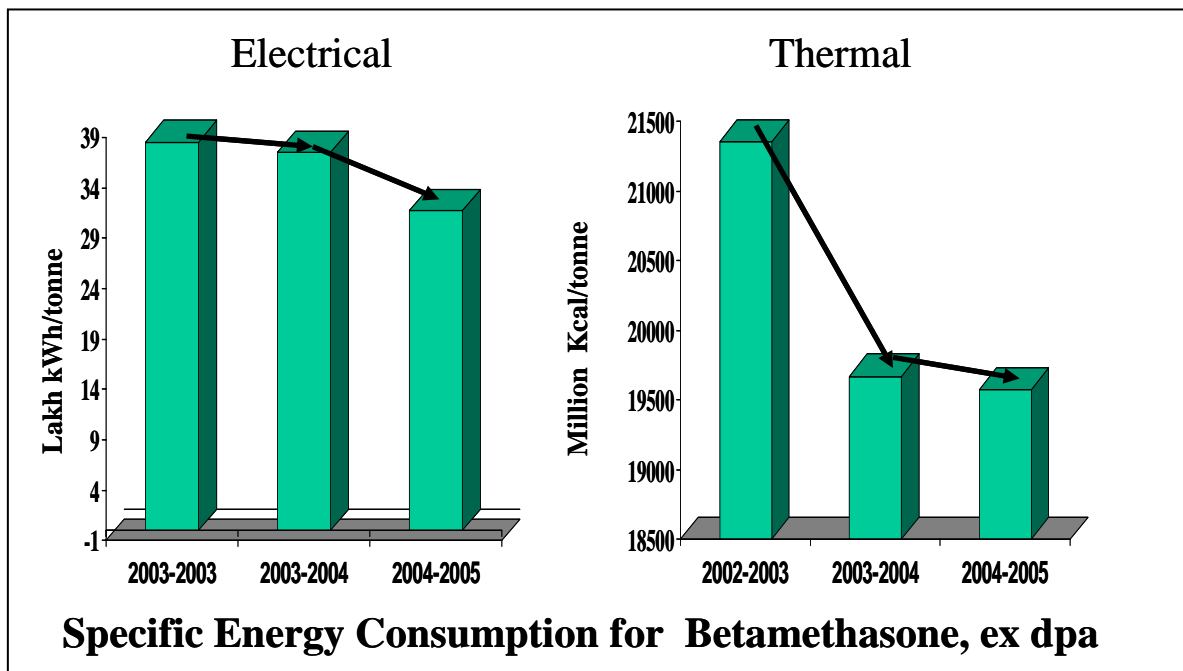
The total area at the site is about 58 acres. Out of this, the built-up area is 11 acres.

(ii) Energy Consumption

The specific energy consumption has dropped down steadily over the past three years due to the various energy conservation projects, which have been implemented.

Year	LSHS MT	FO in KL	Electricity		
			Purchased Lakh kWh	Generated Lakh kWh	Total Lakh kWh
2002-2003	1412.94	687.98	98.49	1.97	100.46
2003-2004	1730.27	261.60	97.07	1.21	98.28
2004-2005	1520	250.981	92.03	1.03	93.06

Description	Unit	2002-03	2003-04	2004-05
Annual Production (Betamethasone- ex dpa)	tonne	3.346	3.29	3.19
Total Electricity consumption- Electrical	Lakh KWh	100.46	98.28	93.06
Specific Energy consumption/annum	Lakh KWh/tonne	38.51	37.50	31.71
Total Thermal Energy consumption/annum	Million Kcal	20851	19775	12418
Specific Energy consumption -Thermal	Million Kcal/tonne	21355	19670	19570
Total Manufacturing cost,	Lakhs Rs.	7415	6078	6976
Total Energy Cost	Lakhs Rs.	656.28	639.94	523.74
Energy cost as a % of Total Manufacturing Cost	%	8.85	10.0	7.51



Energy Conservation has the sponsorship of the Technical Director, Dr.A.Banerjee and is therefore top driven. The Site has a well-defined Energy Conservation Policy (which is enclosed). The Senior Engineering Manager heads Energy Conservation. An energy manager coordinates the Encon activities at Site. Challenging targets for Encon are set every year. Cross-functional teams from various departments are involved in identifying higher energy consumption areas. A planned approach is adopted towards Encon. An Energy Plan is marked and activities are carried out as per the schedule. Awareness campaigns through posters, quizzes are held and the Encon week is celebrated. Special 'Spot the Energy waste' contests are held, external faculties are called to train the staff in Energy Conservation. Engineers are deputed to attend external seminars for getting exposure to latest technology in energy efficiency. Comprehensive External Audits in areas such as Refrigeration, Steam, Electricity are conducted. Internal audits are regularly carried out to eliminate energy loss and conserve natural resources such as water. Strategy employed to achieve the Energy plan includes:

- Progress energy management programme by continuous emphasis on communication to staff
- Focus on efficiency improvement of Utility equipment
- Establish energy use accountably
- Continue search for new projects
- Carry out energy audits and the impact on environment
- Sustain momentum

(iv) Energy Conservation Achievements

There have been phenomenal savings in the Utility expenditure due to the various energy conservation projects that have been implemented. In the year 2001 the savings were Rs60 Lakhs in the year 2003. The target for the year 2004 was Rs25 Lakhs.

The Thane factory has also won the Excellence Recognition Award for Energy Management from GlaxoSmithKline Global Manufacturing and Supply. This is a prestigious international award and recognition for the excellent work done by the factory in Energy Conservation during 2003.

The Site received the prestigious **National Energy Conservation Award 2004 in the Chemicals Sector from Maharashtra Energy Development Agency, Government of Maharashtra**

No. of other small Projects implemented in 2004-2005: 14

These are small projects, which includes initiatives like rationalisation of services, replacement of existing motors by energy efficient motors, efficiency improvement of energy generation & distribution system, process improvement, etc.

Total Encon savings for the year 2004-2005: Rs. 20.61 Lakhs

(v) Energy Conservation Plans and Targets

A challenging target awaits the Site for the next year . The Plans consist of the following projects:

- a. Variable speed device for Process Pumps
- b. Electroflo equipment for quality electricity supply
- c. Optimisation of vacuum system
- d. Rain water harvesting
- e. Energy efficient distilled water unit
- f. Electronic expansion valve for Refrigeration units

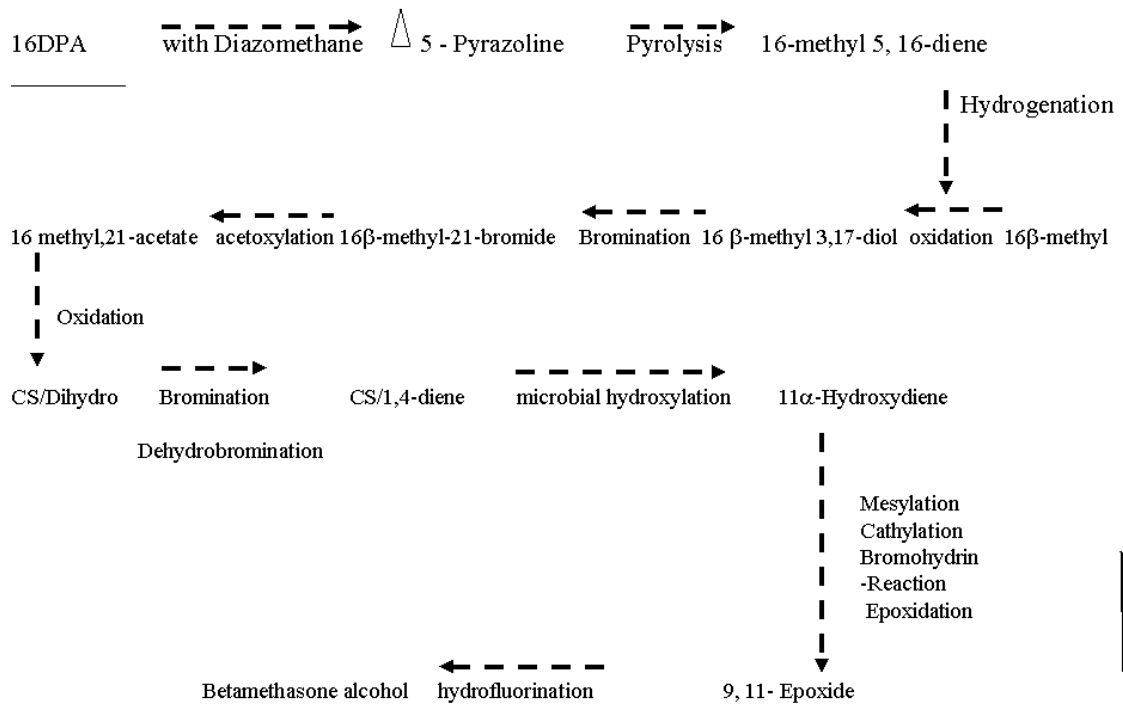
(vi) Environment and Safety

The site has impressive safety record. This has been recognized by the Group as well as by the local industry associations. The Site was audited by M/s SGS, an International Audit firm and was **awarded ISO 14001 AND OHSAS 18001** on 16th January 2004.

The site has also been awarded several times by the State and Central Governments for its safety performance. The various awards won by the site are listed below:

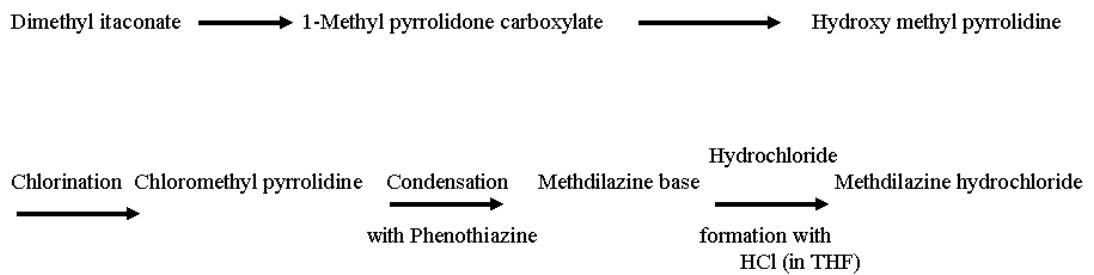
- Several awards from the Government of India for outstanding safety performance.
- National Safety Award from the Government of India (two times) for largest accident free period.
- Two times winner of trophy for the lowest accident frequency rate in the pharmaceutical industries in the state of Maharashtra
- Managing Director's Trophy for the best site in terms of Safety, Health & Environment amongst all the Glaxo India sites.
- Six times winner of Chief Executive's Certificate for working one million man-hours without lost-time accidents, with one occasion being that of working for two million injury free hours.
- Awarded Chief Executive's trophy for outstanding EHS management
- Winner of trophy for the 'Best safety performance in the local industry zone. This award was given jointly by the Directorate of Industrial Safety & Health & Thane Manufacturers Association.
- Award for the best entry in Safety Drama Competition organised by the State Directorate of Industrial Safety & Health and Bombay Television.
- Award by the State Directorate of Industrial Safety and Health for the best display in the "Envirosafe " exhibition (exhibition promoting "Safety, Health & Environment" amongst all the industries at Thane)
- Award by the Rotary Club in the annual competition for the best garden amongst the industries in Thane area.

BETAMETHASONE: PROCSS OF MANUFACTURE

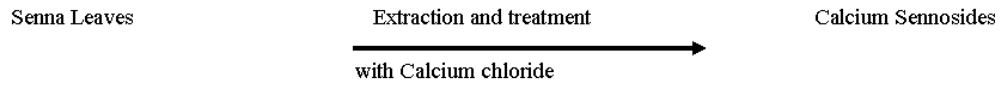


Annexure I

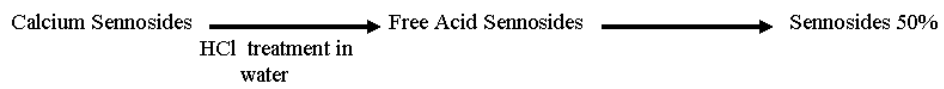
METHDILAZINE HYDROCHLORIDE : PROCESS OF MANUFACTURE

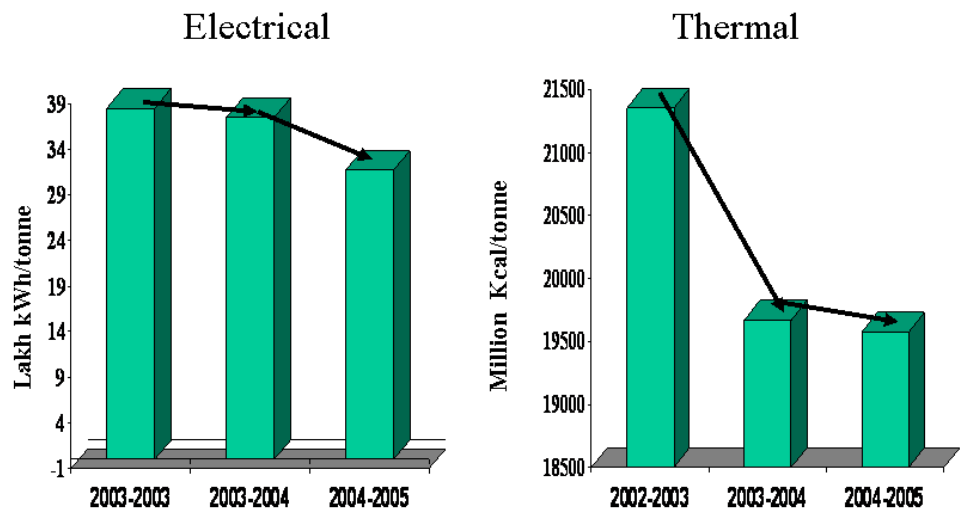


CALCIUM SENNOSIDES: PROCSS OF MANUFACTURE



SENNOSIDES 50%: PROCESS OF MANUFACTURE





Specific Energy Consumption for Betamethasone, ex dpa



GlaxoSmithKline Pharmaceuticals Limited,
Thane
ENERGY CONSERVATION POLICY

GSK Thane is committed to energy and utility conservation.

It is the policy of this factory:

- To endeavour for continuous process improvement in order to reduce the energy usage.
- To identify personnel for Energy Management and allocate responsibilities.

Form Task force across Site for identification and speedy implementation of energy conservation projects.

Have a full time Energy Manager for coordinating the Energy Management at Site.

- To ensure that all equipment are maintained in an energy efficient condition. Procure new equipment with best energy efficiency.

Periodically audit and review to eliminate energy wastage.

- To establish an Energy Balance and regularly monitor, record and review any deviations.
- To ensure that specific energy consumption follows a progressive reduction.
- To ensure that personnel are having appropriate level of awareness for Energy Conservation and are trained and competent for the same.
- To ensure that Safety, Health and Environment impact are duly assessed while addressing Energy conservation.

Revised on 3rd November 2003.

This policy statement supersedes the earlier statement dated 6th November 2001.

Dr. SURESH RAGHAVA
Sr. GENERAL MANAGER