

M/S NSL SUGARS LIMITED, KOPPA, MADDUR-TK, MANDYA – DIST, KARNATAKA

Location	Koppa - 571 425, Maddur - Taluk, Mandya - Dist, Karnataka.
Nearest Railway station	Maddur : 17 km
Nearest Air Port	Bangalore : 120 km
Nearby towns	Maddur : 17 km; Mandya : 35 km; Mysore : 80 km; Bangalore : 100 km
Salient features of the plant	<ul style="list-style-type: none"> ❖ M/s NSL Sugar Ltd, formerly SCM Sugars Ltd is situated at Koppa village, Maddur Taluk, Mandya District, Karnataka State. ❖ Mandya district being highly suitable for Sugar cane crop which is the prime commercial crop in the District. The farmers of Koppa area were in great need of a Sugar factory due to inadequacy of service from the existing factories which were already over loaded. Perceiving this situation, NSL Sugar has set up a 3500 TCD Sugar plant integrated Co-gen power plant of 26 MW in 2004 and subsequently 45 KLPD Ethanol plant was established in 2007. ❖ Later the sugar plant has been expanded to 4250TCD during 2008 and later to 5500 TCD capacity in 2012 and Distillery plant has been expanded to 60 KLPD in 2014. ❖ The water requirement for the entire factory is met from nearby Shimsha River. ❖ The consumption of water is reduced to the possible extent by recycling of sugar condensate water. ❖ NSL has built its own township adjacent to the factory premises. NSL has also taken up several steps to fulfill the employee requirements and social economic activities in neighboring villages regularly. Employment has been provided for several land losers.
Land Area in acres	110 Acres
(i) SUGAR PLANT	
Capacity	5500 TCD
Year of Establishment	3500 TCD - 2004, Expansion 4250 TCD-2008, Expansion 5500 TCD-2012
Supplier Name	a. Mill House : FC-KCP, Chennai.
Specification of Sugar Plant	a. 36"x78" mill max - 2nos. of mills, 33"x66" with GRPF- 1No. mill, 30"x60" with GRPF- 1 No.

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	mill and 30" x60" mills - 2 Nos.
	b. Dorr 555 clarifier one no. with 7875HL,
	c. One set of Quintuple Set of 6580 M ² with Pre evaporator of 2000 M ²
	d. One set of quintuple set of FFEs of total Heating Surface 17600 M ² . The system was supplied by SEDL with floating body arrangement for cleaning.
	e. CVP for C massecuite 35Tons, B VKT -30 T/Hr, A VKT 65T/Hr.
	f. A centrifugals D412 machines 5 Nos. Of 1250kgs/charge, 30T capacity FBD, 30T and 20T capacity 2 nos. of Mogenson sizers.
	g. Molasses storage tanks (11000 M3)
	h. Sugar ETP capacity : 800 cu.mt/day
	i. Condensate polishing unit of 1000 Cu.mt/day.
Innovative Technology Adopted	a. 2 roller mill max mills with sliverizer
	b. Evaporator station is a Complete set of FFEs which operates with low pressure steam.
	c. All juice heating being carried with DCH. Steam economy system installed with cigar system, vertical continuous pans for A and B boiling
Steam economic measures adopted in sugar plant	a. Raw juice heating 1st stage on 5th body vapour and 2nd stage on 4th body vapour
	b. Sulphured juice heating 1st stage on 4th body vapour and 2nd stage on 3rd body vapour
	c. Clear juice heating 1st stage on 3rd body vapour and 2nd stage on 2nd body vapour
	d. A & B Vertical continuous pans on 4th/3rd vapour and Batch pans on 3rd/2nd vapour
	e. Pans body washing, Sugar melter and molasses conditioners on 1st body vapour.
	f. Sulphur Burners and Super heated wash water system on waste heat recovery system
(ii) COGEN PLANT	
Capacity	26 MW
Year of Establishment	2004
Supplier Name	a. Boiler : IJT

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	<ul style="list-style-type: none"> b. Turbo Generator : BHEL , Hyderabad c. DCS : Yokogawa, Bangalore d. Fuel & Ash Handling System : M/s Methods (India) Pvt Limited, Bangalore e. Cooling Tower : M/s. Paharpur, Kolkata f. Water Treatment Plant : Ion Exchange, Hosur g. M/s Sathiapal Engineers (India) Limited.
<p>Specification of Boiler & STG</p>	<p>BOILER SPECIFICATION</p> <ul style="list-style-type: none"> a. Heating surface : 4018.550 sq.m b. Boiler working pressure : 87 kg/cm² c. Steaming capacity : 100 TPH d. Steam temperature : 515 +/- 5°c e. Boiler make : ISGEC JOHN THOMPSON. f. Boiler Reg.No : KTK 2637 g. Type : Bi-drum water tube <p>STEAM TURBINE SPECIFICATION</p> <ul style="list-style-type: none"> a. Make : BHEL, Hyderabad b. Type of machine : EH NK 40/63-3 c. No of stages : Impulse-1 d. Normal continues rating : 26000 kw e. Maximum continues rating : 27000 kw f. Turbine normal speed : 5650 rpm g. Turbine trip speed : 6215 rpm h. Type of machine : Extraction Cum Condensing i. Steam i/l pressure : 86 ATA j. Steam i/l temperature : 510 Deg. C

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(iii) DISTILLERY PLANT

Capacity	60 KLPD.
Year of Establishment	OCT-2007
Supplier Name	KBK Chem Engg Pvt Limited. Pune
Name of the products	Ethanol, Rectified Spirit, ENA and Impure Spirit.
Specification of Distillery	Plant capacity: 60 KLPD, FE: min 90 %, DE: Min 98.50%, Steam Con: 3.50Kg/Lit of alcohol. Power con:180 KW/KL of alcohol ,
Effluent Treatment scheme adopted	Biomethanation plant, Spent wash concentration in MEE & Drying system in spray drier. Blending of spent wash with bagasse and utilizing as fuel in incinerating boiler. Condensate polishing unit.
Boiler & STG Specification	Boiler : 28 TPH; 34 kg/cm ² , 360 deg.C : Supplier : Cogent, Pune, STG : 2.1 MW; Supplier : Triveni, Bangalore
Steam economic measures adopted	<ul style="list-style-type: none"> a. Re-boilers are adopted for all columns to reuse steam condensate and column top vapours are utilized for heating liquid of 3 columns thereby minimizing steam consumption. b. Spent wash hot liquid is utilized to pre heat fermented wash there by reducing the steam consumption.
Energy conservation measures adopted in the Unit	<ul style="list-style-type: none"> a. VFD and Planetary drives are implemented for all higher capacity motors in the Cogen and Sugar plants. b. Due to implementation of Steam economy (cigar system) measures in the Sugar plant, 5 nos evaporators condensate pumps were replaced with two nos pumps. c. The higher capacity MCW pump (350 HP) was replaced with (170 HP) at co-gen unit. d. Gravity flow was implemented in the Sugar cooling tower; resulting 2 x 170 HP pumps are removed. e. CFL bulbs are provided in the factory and colony premises to conserve the energy. f. Solar lighting and solar water heater are provided in the colony promises.
Water conservation	Steps taken to reuse/recycle waste water:

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measures adopted	a. A recycling treatment system has been exclusively installed for treating and recycling the sugar condensate.
	b. Condensate polishing unit is established for treating and recycling the distillery MEE condensate.
	c. Cogen boiler blow down water is reused to cogen cooling tower make up.
	d. Cooling tower blow down is reused to Sugar service water tank as partial make up.
	e. The compressor water, sulphur burner water, mill cooling water etc is reused again instead of discharging in to ETP.
	f. The sand filter back wash water is sent to raw water reservoir.
	Steps taken to reduce waste water generation:
	a. Partial sugar condensate is used for molasses dilution in the distillery unit, instead of fresh water.
	b. Balance sugar condensate is recycled after the treatment to the Cogen cooling tower make-up, process etc, to minimize the waste water generation and as well as to minimize the fresh water consumption.
	c. In distillery plant, Recycle of steam condensate to boiler, recycle of spent lees to cooling tower, recycle of vacuum pump water and air blower water to fermentation process and cooling tower make up water.
Environment Management in the Unit	a. High efficiency ESP with 4 fields is connected with 83 mtrs height of RCC Chimney in Cogen Boiler for better air pollution control.
	b. The DG sets are provided with acoustic enclosures to mitigate the noise pollution.
	c. The sugar trade effluent is being treated in the existing 800 KLD capacity of Sugar ETP which consists of Bar Screen Chamber, Oil & Grease, Equalization cum Neutralization tanks, Buffer tank, UASB, Diffused Aeration tank, Clarifier, Sludge Drying Beds. The treated effluent is utilized for on-land for irrigation.
	d. The Green belt development is developed in 40 acres as per CPCB guidelines in consultation with the local DFO to mitigate the fugitive emission effects.

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	<p>e. In order to conserve the raw water consumption, 1000 KLD capacity of Sugar Condensate Polishing unit is installed.</p> <p>f. 750 KLD capacity of MEE condensate polishing unit is installed for treating and recycle the MEE condensate.</p> <p>g. Bio gas generated from spent wash is used for boiler as fuel. CO₂ generated from fermentation process is scrubbed and pure liquid CO₂ is produced.</p>
Achievements	<p>a. M/s. NSL Sugars Ltd., Koppa unit conformed to the Quality Management System Standard: ISO 9001: 2008 as per the certificate issued by the Det Norske Veritas.</p> <p>b. M/s. NSL Sugars Ltd., Koppa unit conformed to Food Safety System Certificate : FSSC 22000 this certification scheme for food Safety systems includes (ISO 22000:20005, ISO/TS 22002-1 & Additional FSSC 22000 requirements) as per the certificate issued by the Det Norske Veritas</p> <p>c. M/s. NSL Sugars Ltd., Koppa has achieved Green category of SGP Audit which is very essential for supplying sugar to Coco Cola.</p>
Awards	<p>a. The Karnataka State Safety Organization, Department of Factories and Boilers awarded Consolation Prize in the year 2007 for adopting Safety measures effectively.</p> <p>b. Best Technical Efficiency Award 2 times 2nd prize for the crushing seasons 2007-08 and 2011-12.</p> <p>c. Award of Excellence in Solid Waste Management in 3rd International Conference on Solid Waste Management (Icon SWM 2012).</p> <p>d. The Karnataka State Pollution Control Board awarded 3rd prize to M/s. NSL Sugars Ltd., for implementation of Green Nurturing Programme in the local area and Schools in the year 2012.</p>
Value Added Products	Press mud, Bio Compost, bio Potash power, boiler fly ash, CO ₂ , bio Gas
Facilities available at site	Nursery School, School bus, Residential Colony, Dormitory with Canteen, Dispensary with full time medical officer, Co Operative Society etc
Key Customers	Sugar : Coke , Pepsi , Metro Cash and carry, Reliance retail, Pearl Beverages , Aditya Birla Retail, Parle Agro, Dabur, Wrigley, Mars, Heritage, Perfetti, Britannia, ITC, Southern Bakery etc.



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	Alcohol : IOCL, BPCL, HPCL, USL, RADICO KHAITAN, JOHN, UNISTILL, AMRUT, EMPEE, KAYCEE, TRAVANCORE, SNJ, MIDASGOLDEN, GOLDEN VATS, Allen Homeo, St Gorge Homeopathy etc.
Future plan	Sugar will be expanded to 7500 TCD and the Distillery plant will be expanded to 120 KLPD.
Plant photo & colony	