

**Project Report**  
**for**  
**Expansion of Crushing Capacity of Sugar Plant**  
**from**  
***8000 TCD to 10000 TCD***

***Product: White Crystal Sugar***



Proposed By

**M/s Tirupati Sugars Limited**

**Works:** Village-Naraipur, Bagaha, West Champaran, Bihar

**Regd. Office:** 101, First Floor, N-27, South Extension, Part -1,  
New Delhi - 110049

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## 1. **Executive Summary**

Name of Company	:	M/s. Tirupati Sugars Limited
Constitution	:	Public Limited Company
Date of Incorporation	:	29.07.1979
CIN No.	:	U15423DL1979PLC404229
Registered Office	:	101, First Floor, N-27, South Extension Part -1, New Delhi – 110049
Factory site	:	Village: Naraipur, Bagaha-845105 District–West Champaran, Bihar
Patna Office	:	51, Patliputra Colony, Patna, Bihar-800013
Directors	:	(i) Mr. Deepak Yadav (ii) Mrs. Bhavna Yadav (iii) Mr. Somnath (iv) Mr. Aasmaan Yadav (v) Mr. Ashok Kumar Sharma (vi) Mr. Jogesh Mohan (vii) Mr. Saurabh Gupta
Bankers	:	Punjab National Bank, Large Corporate Branch, C-13, Sector-1, Noida, Gautam Budh Nagar, U.P.
Installed Capacity	:	Existing Capacity 8000 TCD
Present Proposal	:	Propose to expand the crushing capacity from 8000 TCD to 10000 TCD of the existing sugar mill.
Products	:	White Crystal Sugar
By-Products	:	1. Molasses, 2. Bagasse, 3. Press Mud

## **2. Background Information**

Tirupati Sugar Limited (TSL), is one of the oldest sugar mills in the country, with almost 88 years of continuous operation. The Sugar Mill is located at Village-Naraipur, Bagaha in West Champaran District of Bihar. Tirupati Sugars Limited. (TSL) have been a pioneer in sugar manufacturing and one of the best Units in the state of Bihar. The unit have been constantly achieving laurels in the field of Efficient Production, Quality and Environmental Management. The company is a Public Limited Company, registered under the Companies Act, 1956, bearing CIN. No U15423DL1979PLC404229 (Old U15423WB1979PLC032152), incorporated on 29<sup>th</sup> day of July, 1979. The registered office of the company is situated at 101 First Floor, N-27, South Extension-1, New Delhi-110049.

The company was originally incorporated in the year 1936 in the name of Ganga Devi Sugar Mills. Thereafter the name of the company was changed to North Bihar Sugar Mills Ltd. in the year 1950, Bagaha Chini Mills Ltd. in the year 1979, H.M.P Sugars Ltd. in the year 1987, and lastly as Tirupati Sugar Ltd. on 16<sup>th</sup> February, 2002 under the management of Poddar Group. The sugar factory was originally installed at a capacity of 500 TCD, which was increased to 1000 TCD in the year 1950 and to 2500 TCD in the year 1990-91.

Under the management of the Poddar group the unit was having licensed crushing capacity of 2500 TCD, which it was never able to achieve. Because of management problems and paucity of funds, the unit was ailing and burdened with debt and arrears of cane price, taxes and duties. The unit was declared sick by BIFR.

Considering the potential of sugar industry in Bihar, the promising sugar incentive policy of the state government, Yadu Corporation of New Delhi saw an opportunity of purchasing the unit and turning it around. Having expertise of sugar industry and reviving sick units, and possessing required net worth and talent pool, the group decided on setting its foot in Bihar by taking over management of the ailing Tirupati Sugars Ltd.

Hence, on 19<sup>th</sup> September 2008, the management of Tirupati Sugar Ltd. was taken over by Yadu Corporation, New Delhi and Mr. Deepak Yadav was appointed as Managing Director of the company.

The day-to-day affairs of the company are looked after by Mr. Deepak Yadav, the Managing Director of the company and he is well assisted by other directors of the company. They in turn are supported by a team of qualified and experienced personnel in charge of various functional areas viz: Production, Finance, Commercial/Marketing and Administration.

At the time of the take-over during 2008, the unit had the same crushing capacity of 2500 TCD. For establishing the viability of the unit on long term basis, the management enhanced the crushing capacity to 5000 TCD during 2011-12 and gradually enhanced from 5000 TCD to 8000 TCD during the year 2022-23.

Considering the potentiality of the sugar industry, continuous increasing trend in availability of sugarcane (raw material) and the incentives being offered by the present state government, the promoters of the company have decided to expand the existing sugar crushing capacity from 8000 TCD to 10000 TCD.

**The management is desirous of availing various incentives being given by the Bihar State Government under its Sugar Incentive Scheme 2014.** The incentive shall enable the unit to perform better and boost morale of the present management and the cane growers of the command area of the company.

***Hence, in this process the present proposal is for approval of the company's project of expansion from 8000 TCD to 10000 TCD and approval for grant of incentives under the existing/applicable Sugar Incentive Policy of Government of Bihar***

### **Location**

Tirupati Sugars Limited is situated at Village-Naraipur, Bagaha, Distt. - West Champaran, Bihar-845105 having Latitude 27.130557871927078 & Longitude 84.07684043538407. The project site is connected to NH-28 B via Bettiah-Valmikinagar Road. It is about 65 kms. from District head quarter at Bettiah and is well connected by NH –. Tirupati Sugars Limited is about 0.5 Km. (SE) from Bagaha Railway Station of ECR.

The factory is surrounded by Nepal Border in the North up to distance of 45 K. M. South on the other side of the Gandak River up to a distance of 25 K.M., East having adjoining factories of Hari Nagar 25 K.M and Narkatiaganj up to distance of 41 K.M. and West having U.P. border, distance up to 45 K.M. Approximately 40% of the area, which falls beyond Gandak River, is flood area. In general, the climatic condition is normal. The average rainfall varies from 807.9 mm to 1195.4 mm.

The unit hardly faces any competition from nearby sugar factories as the nearest sugar unit is located at a distance of more than 25 K.M. Besides, since the unit is located close to the border villages of U.P., it can also procure Sugar cane from villages in UP in addition to the above.

The factory has its area of operation in Bagaha -1, Bagaha -2, Piprasi, Madhubani, Bhitaha, Dhanaha, Bairia, Jogapatti and Thakraha Blocks in Dist. West Champaran. Champaran is known to be the richest belt for sugar cane cultivation in Bihar. The soil and climatic condition of the area is suitable for cultivation of sugar cane and the area has history of sugarcane cultivation.

Location Details	
Village	Naraipur, Bagaha
Tehsil	Bagaha
District	West Champaran
State	Bihar
Latitude	27°07'39.61"N-27°07'55.31"N
Longitude	84°4'02.12"E-84°4'44.33"E
Area Details	
Total Plant Area	8 hectares (20 acres)
Greenbelt / Plantation Area	2.6 hectares (6.6 acres) i.e. almost 33% of the total plant area has already been developed as greenbelt/ plantation and the same will be maintained.

### 3. **Board of Directors, Key Managerial Personnel & Management Team**

S. No.	Name	Designation
1.	Mr. Deepak Yadav	Managing Director
2.	Mrs. Bhavna Yadav	Director
3.	Mr. Aasmaan Yadav	Director
4.	Mr. Somnath	Director
5.	Mr. Ashok Kumar Sharma	Director
6.	Mr. Jogesh Mohan	Director
7.	Mr. Saurabh Gupta	Director

#### **Key Managerial Personnel :**

The Company is presently owned and managed by Mr. Deepak Yadav, Managing Director. He is a B.Tech ( Mechanical ) and MBA ( Finance ) from London. Mr. Yadav has followed a business model of acquiring sick units and successfully turning them into profit generating units. The key persons are assisted by a team of qualified and experienced professionals drawn from the sugar industry.

Name	Designation
Mr. Deepak Yadav	Managing Director
Mr. Mukesh Kumar Yadav	Chief Financial Officer
Ms. Vidushi Aggarwal	Company Secretary

#### **Management & Other professional team**

##### **( A ) Brief Profile of Promoter/ Director :**

The company is presently owned and managed by Mr. Deepak Yadav. Shri Yadav, as a part of the Yadu Group, has followed a business model of acquiring sick sugar units and turning them around. The group acquired Indian Sucrose Limited in the year 2000 and thereafter it took over Cosmos Industries Limited in the year 2005. Both the units have been turned around and are now generating profits.

Mr. Deepak Yadav and Mrs. Bhavna Yadav are the present promoters and Directors of M/s Tirupati Sugars Limited. M/s Exquisite Services Limited is the associate company of M/s Tirupati Sugars Limited. Mr. Deepak Yadav & Mrs. Bhavna Yadav have been associated with sugar industry for the last 23 years.

### **Mr. Deepak Yadav: Managing Director**

**Mr. Deepak Yadav** (47) is the CEO and Managing Director of Tirupati Sugars Limited, which is a group of 10 different companies including Tirupati Sugars Ltd. belonging to the INR 10 billion corporation promoted by Mr. Deepak and his associates. It has interests in the field of power generation, sugar, ethanol, education, real estate, hospitality etc. and more. After graduating in Engineering (B. Tech., Mechanical) from National Institute of Technology, Kurukshetra with top percentile, he went on to become a Harvard Business School Graduate in 2010. In the year 2001, he established his Corporate Group in initial years by taking over sick/bankrupt companies, factories and projects under it. The corporation acquired Indian Sucrose Ltd in the year 2000 and Cosmos Industries Limited in the year 2005 in the state of Punjab and successfully turned those around into profitable ones.

The shareholder's wealth, value and equity present in the Yadu Corp. today, was created by himself and his team from turning around these sick Companies. Under his able leadership, his (skilled and hardworking) team has today become experts in takeover and turnaround of sick/bankrupt companies in their field of experience.

His areas of specialization include:

- Acquisition and Mergers, Business revival / turnaround.
- Sugar and molasses manufacturing and trading (*being the largest producer of the commodity in the State of Punjab*).
- Organic Fertilizer, Organic Pesticides, Organic Farming inputs and implements.
- Distillation and Ethanol.
- Renewable Power Generation (*Bio-mass, Methane (bio-gas), Hydro, Wind, Solar*).
- Alcoholic and Non-Alcoholic Beverages manufacturing, distribution, marketing, retail and trading.
- Paper, Packaging, Printing and downstream value addition.
- Hotels and Hospitality projects.
- Real Estate and Land Banking.
- Stressed Assets Investments and Restructuring.
- Fintech, Micro-Finance, Micro-Banking and Financial Inclusion Projects.
- Greenfield and Brownfield Project development and management.
- Developing existing and new markets for very high volume commodities.

### **Honors:**

**Honored by 'The President of India'**

*23<sup>rd</sup> February 2014*



Honored by The President of India for socio-economic development of under-privileged farmers in the State Of Bihar

**Awarded a Letters Patent** granting a personal '**Coat of Arms**' in October 2014 by the King of Arms duly authorized under guidance of Her Majesty the Queen of United Kingdom, Northern Ireland, other Realms, Territories and Commonwealth

### **Awards:**

- **1st Prize for highest efficiency in operations of Sugar Industry awarded by Government of Bihar**
- *13<sup>th</sup> April 2015*  
Chief Minister, Mr. Nitish Kumar (Government of Bihar) gave 1st Prize of Rs. 14, 00,000/- for highest efficiency in Industry taken by our group factory TSL in the State of Bihar. The award includes cash prize & subsidies.
- 'Rashtriya Rattan Award 2008' for Outstanding Individual Achievements & Distinguished Services to the Nation (given by Governor of states of Rajasthan, Punjab, Tamil Nadu & Assam in India).
- ASSOCHAM Chairman for Expert Committee on Sugar (2008-2010).
- ASSOCHAM All India Beverages Expert Committee Chairman.
- Member of Indian Sugar Mills Association (ISMA).
- Executive Committee Member of Indian Sugar Mills Association (ISMA).

### **Mrs. Bhavna Yadav: Director**

Mrs. Bhavna Yadav is a Delhi University B.Com Graduate, having an experience of about 20 years in the sugar industry. She looks after day to day activity of the unit regularly.

### **Management Team**

**Management:** The Company will be managed by directors. They will be further assisted by various functionaries.

**Production:** This function will be under the control of Production Head and works managers who will be responsible for achieving production targets, cost controls, plant performance & its maintenance. They will be assisted by foreman, Skilled & semi-skilled workers etc.

**Finance & Accounts:** This function will be looked after by finance and accounts manager who will be responsible for maintenance of the accounts & other administrative work, labour welfare & legal matters.

**Marketing:** This function will be look after by Marketing Manager Who will be responsible for marketing strategies, sales target & debtors control etc. They will be assisted by various marketing and sales personal.

# Each Functionaries will be appointed keeping in view their experience in same line of industries. Experience must be more than 5 years in their fields.

# Technical Consultants will be appointed for setting up the project and they will also provide the regular consultancy for a smooth flow of production, process and control.

The company has a dedicated team of technical professionals and non-technical professionals who are successfully handling the affairs of the company. A list of the same is as below:

Name	Department	Designation	Experience
Mr. Vijay Pratap Singh	Manufacturing	G.M. ( Production )	28 Yrs.
Mr. Mukesh Kumar Yadav	Accounts	C.F.O.	11 Yrs.
Mr. Akhilesh Kumar	Accounts	Dy. Manager (Accounts)	12 Yrs.
Mr. Tripurari Kumar	Personnel	D.G.M. ( P & A )	18 Yrs.
Mr. B.N. Tripathi	Cane Development	G.M. ( Cane )	37 Yrs.
Mr. A.K. Gupta	Engineering	G.M. ( Engineering )	39 Yrs.
Mr. P.K. Ojha	Electrical	G.M. ( Electrical )	25 Yrs.
Mr.Pravesh Kumar	Civil	Manager ( Civil )	12 Yrs.
Mr. Sushil Kumar	Environment	Asstt. G. M. (EHS)	26 Yrs
Mr. S.S. Chauhan	Manufacturing	AGM ( Production )	26 Yrs.
Mr. Vinod Kumar Rai	Manufacturing	Sr. Manager (Production)	27 Yrs.
Mr. Hemant Kr. Pathak	Manufacturing	Sr. Dy. Chief Chemist	31 Yrs.
Mr. Prashant Pandey	Manufacturing	Dy. Manager-Quality Control	18 Yrs.
Mr. Rajesh Kumar Pal	Manufacturing	Sr. Manufacturing Chemist	07 Yrs.
Mr.Pradeep Bhakt	Manufacturing	Additional Manager (Prod.)	19 Yrs.
Mr. Saurabh Gupta	Sales & Marketing	Sr.Manager ( Commercial)	17 Yrs.
Mr. Kamlesh Kumar Singh	E.D.P.	Manager (IT)	26 Yrs.
Mr.Jogesh Thakur	I.T.	Sr.Manager ( I.T. )	23 Yrs.
Mr.Ankur Agarwal	Material Deptt.	Manager ( Purchase )	17 Yrs.

#### 4. Performance Highlights

##### ( A ) Operational Performance :

The operational and physical performance of the company's sugar plant for the past 6 crushing seasons has been as under :-

Particulars	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Installed Capacity (TCD)	5000	5000-7000	5000-7000	5000-7000	8000	8000
Start of Crushing Season	06.11.2018	07.11.2019	08.11.2020	12.11.2021	11.11.2022	03.11.2023
Close of Crushing Season	19.04.2019	01.04.2020	24.02.2021	07.03.2022	19.03.2023	17.03.2024
Duration (Gross Days)	165	147	109	116	129	136
Cane Crushed(Lacs Qtls)	121.01	106.77	79.74	81.93	104.53	104.46
Sugar Produced (Qtls.)	1254349	1181104	851370	893791	1080208	1130661
Sugar Recovery ( % )	10.35	11.05	10.64	10.89	10.32	10.81
Molasses ( % )Cane	4.54	4.17	3.83	4.39	4.88	5.27
Bagasse ( % ) Cane	29.81	28.46	29.06	29.13	29.82	29.42

With the implementation of this modernisation & expansion Project, the installed capacity of the plant will increase in crushing season 2024-2025 from 8000 TCD to 10000 TCD. Simultaneously, with the extensive cane development programme undertaken, the sugar cane availability will also increase considerably.

**( B ) Working Result :**

The working result and financial position of the company as a whole for the past 6 financial years has been as under :-

Rs. In lacs

Particulars	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Turnover	42588.29	43934.87	39050.75	32416.87	36792.93	47158.11
Gross Profit	4185.63	6571.18	5238.83	4877.60	5388.58	6945.29
Interest	1924.22	2076.11	2039.381	1812.79	1995.20	2309.77
Depreciation	1215.26	1463.71	1334.16	1334.26	1377.30	1667.53
Depreciation relating to earlier years	0.00	2022.97	-123.04	0.00	0.00	0.00
Operating Profit	390.10	447.18	1469.73	1243.55	1336.88	2202.95
Other Income	28.36	361.16	367.48	2080.35	1186.30	205.74
Profit before Tax	418.46	808.34	1837.20	3323.89	2532.76	2408.70
Current Tax	45.22	811.82	559.22	798.78	722.81	745.92
Deferred Tax	82.09	(818.02)	(116.69)	(102.00)	(42.53)	(87.65)
Previous year adjustment	0.00	0.00	0.00	0.00	9.57	0.00
Profit after Tax	291.15	814.54	1337.49	2606.81	1835.14	1752.02
Dividend	0.00	0.00	0.00	0.00	0.00	0.00
Net Cash Accruals	1588.49	3483.20	2431.92	3839.07	3169.90	3331.90

There is quantum of jump in turnover of the company during the financial year 2014-15, and onwards , as compared to the previous years. The company, which had been incurring losses up to the financial years 2007-08, has turned the corner and recorded net profits and cash accruals on continuous basis from 2008-09 and onwards.

**( C ) Financial Position :**

The financial position of the company for the last 6 years is as under :-

\*Rs. In lacs

As at 31st. March	2019	2020	2021	2022	2023	2024
Gross Block	27853.23	28602.05	30311.88	31387.85	34033.30	35477.13
Depreciation	15539.11	19025.78	20236.91	21571.16	21651.61	23319.14
CWIP	121.98	353.36	792.33	1577.95	268.61	777.52
Net Block	12436.10	9929.63	10867.30	11394.63	12650.32	12935.51
Investments	4363.44	4363.44	4363.44	1613.44	1613.44	1613.44
Current Assets	30523.72	30008.36	24050.13	24671.28	32037.36	33781.21
Current Liabilities	30354.24	29853.72	20144.25	22320.99	30000.96	31291.61
Unsecured Loans / Other Long Term Liabilities	5173.04	3650.48	3648.51	870.56	229.40	117.98
Term Loans	2180.64	1186.85	4659.63	4758.24	4647.82	4489.66
Deff. Tax Liability	1200.50	382.49	265.80	163.80	121.27	33.62
Net Worth	<b>5678.79</b>	<b>6493.33</b>	<b>7830.82</b>	<b>10437.63</b>	<b>12272.77</b>	<b>14024.79</b>
Share Capital	2090.00	2090.00	2090.00	2090.00	2090.00	2090.00
Reserves	3368.48	3368.48	3368.48	3368.48	3368.48	3368.48
Misc. Expenditure not written off	0.00	0.00	0.00	0.00	0.00	0.00
Accumulated ( - ) Losses / Profit	220.31	1034.85	2372.34	4979.15	6814.29	8566.31
Net Worth	<b>5678.79</b>	<b>6493.33</b>	<b>7830.82</b>	<b>10437.63</b>	<b>12272.77</b>	<b>14024.79</b>

## 5. Introduction of the Project (Project at a glance)

Sugarcane Crushing Capacity:

The present installed capacities and proposed crushing capacity of TSL are as under: -

Product	Existing	Proposed	Total
Sugar	8000 TCD	2000 TCD	10000 TCD

### **By-products: Molasses, Bagasse & Press-Mud.**

Brief description of nature of project: The present proposal is for expansion of existing crushing capacity of 8000 TCD to 10000 TCD within the existing premises of the sugar mill.

The Sugar Mill is being operated at existing crushing capacity of 8000 TCD for **150-160 days** in a season during the period Oct-Mar every year. The by-product molasses is sold in the market to the ethanol manufacturing units and other units for chemical manufacturing. The Bagasse is used as bio-fuel in boiler used for sugar manufacturing and for co-gen power generation. Press mud, and Boiler Ash produced in Sugar Mill is being utilized for making Bio-compost Fertilizer.

Now, to meet the increasing demand of local farmers and surplus availability of Sugarcane in the area, the management of TSL has embarked upon expansion of existing sugar mill project up to **10000 TCD**. No additional land and facilities are required for proposed expansion project. Existing sugar mill area and facilities are adequate to handle crushing of 10000 TCD of sugarcane.

### **Proposed Capacity**

1.	Project Capacity	Sugar plant expansion of Crushing capacity from 8000 TCD to 10000 TCD
2.	Location	Village Naraipur, Bagaha, District West Champaran (BIHAR) (Existing Sugar mill)
3.	Promoters	Shri Deepak Yadav Tirupati Sugars Limited. Village-Naraipur, Bagaha – 845105 District West Champaran, Bihar
4.	Proposed Product(s)	Sugar (10000 Quintals approx..)
5.	Raw Material	Sugar Cane Existing capacity 80000 qtls per day After Proposed expansion 100000 qtls per day

6.	Project Justification	<ul style="list-style-type: none"> <li>➤ Revenue will be generated for the State Government.</li> <li>➤ Lead to growth in income of the company.</li> <li>➤ Improvement in Local Business &amp; economy.</li> <li>➤ Standard of Living of people will increase.</li> <li>➤ Employment will be provided to eligible people of the local area and within state.</li> </ul>
7.	Estimated Project Cost (Rs. In lakhs)	Rs. 8000.00 Lacs (in Existing Sugar Mill Premises)
	<b>Financing Plan</b>	
(i)	Promoters Contribution (Internal Accruals)	Rs.2500.00 Lacs
(ii)	Term Loan from Bank	Rs.5500.00 Lacs
	Total	Rs.8000.00 Lacs
8.	Process of Manufacture	Double Sulphitation
9.	Land Requirement	No additional land required. All the expansion activities will be carried out within existing Sugar Mill premises.
10.	Estimated Man Power	15-20 Persons additional man power will be required along with the existing man power of the sugar mill will work for manufacturing process, loading, unloading, cleaning & maintenance, fuel feeding, etc.)
11.	Project Implementation Period	16-18 months

The project capacity after proposed expansion will be **10000 TCD**. In view of rapid increase in the demand of Sugar from year to year and availability of main Raw Materials, i.e. Sugarcane in project influence area, the project proponent has decided to expand its existing cane crushing and production capacity.

## 6. **Sugar Manufacturing Process**

Sugarcane is broadly classified into three varieties early, general and unapproved. Cane is sowed during February and October every year. The first seed growth is known as the plant and subsequent growth after harvesting from the stem is known as Ratoon. The early variety has more sugar content than the general variety.

Every farmer within the command area of the Mill is provided with a calendar, which tells him when he can expect a Mill Supply Ticket (Purchy), against which he will deliver the sugarcane.

The Farmer then harvests the cane and transports it either in a bullock cart or tractor trolley to the mill. Cane is also bought at the mill's own centers within the command area. This cane is then transported in trucks or through rail to the mill.

Cane is weighed using an electronic weigh bridge and unloaded into cane carriers. It is then prepared for milling by knives and shredders. Sugarcane juice is then extracted by pressing the prepared cane through mills. Each mill consists of three rollers:

1. During extraction of juice at mills hot water is put on bagasse before last mill to extract maximum amount of sugar from residual bagasse that is sent to boiler for steam generation, Extracted juice mixed with water is weighed and sent to the boiling house for further processing. Residual bagasse is sent to boilers for use as fuel for steam generation.
2. This juice is heated and then treated with milk of lime and sulphur dioxide. The treated juice is then further heated and sent to clarifies for continuous settling. The settled mud is filtered by vacuum filters and filtered juice is returned to be further processed while the vacuum filter cake is sent out and used as bio manure by sugar cane farmers.
3. The clear juice is evaporated to a syrup stage, bleached by sulphur dioxide and then sent to vacuum pans for further concentration and sugar grain formation. Crystals are developed to a desired size and the crystallized mass is then dropped in the crystallizers to exhaust the mother liquor of its sugar as much as possible. This is then centrifuged for separating the crystals from molasses. The molasses is re-boiled for further crystallization

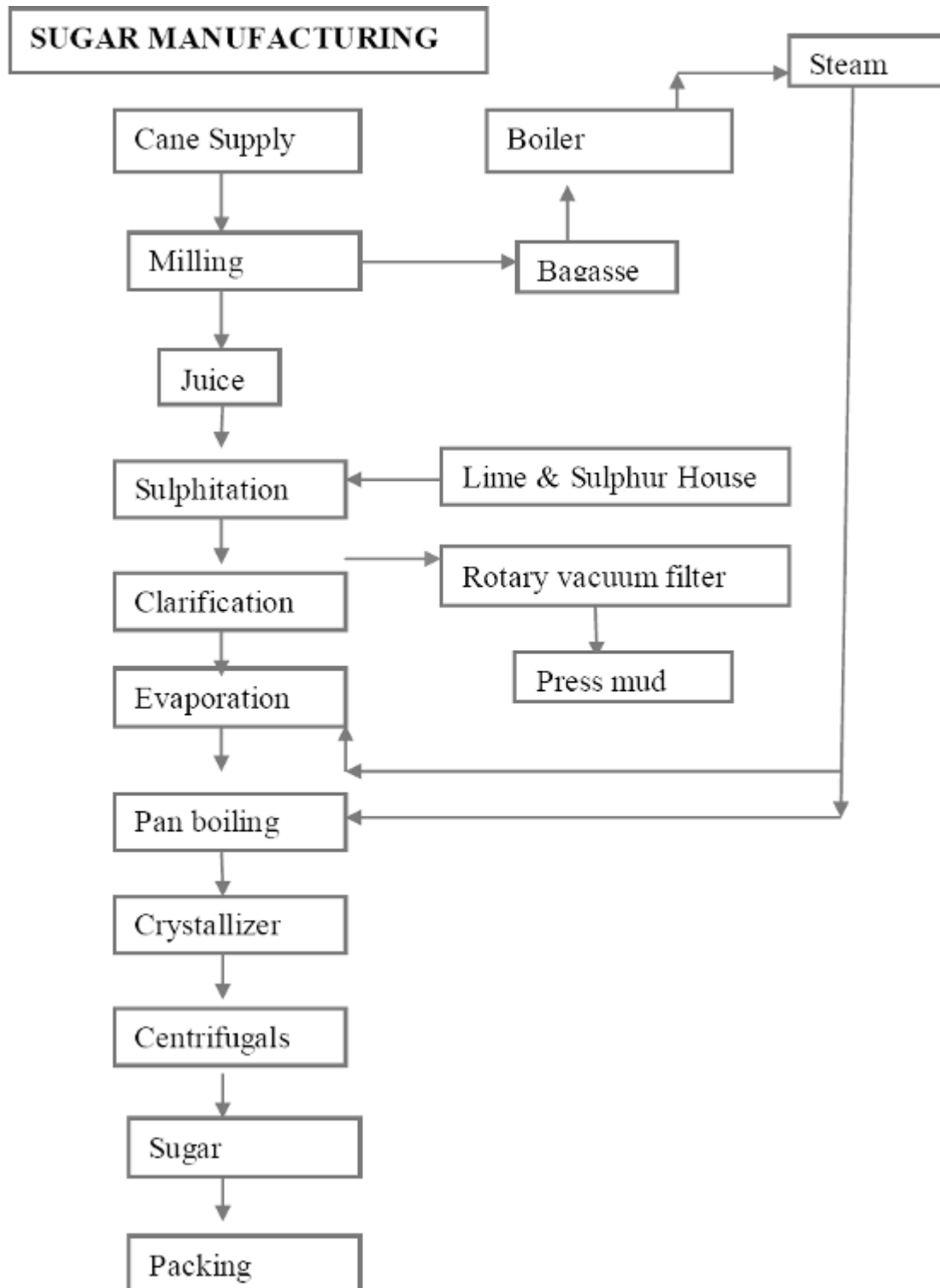
Thus, the original syrup is de-sugarised progressively (normally three times) till finally, a viscous liquid is obtained from which sugar can no longer be recovered economically. This liquid, which is called final molasses, is sent to the distillery for making alcohol.

The sugar thus is separated from molasses in the centrifuge is dried, bagged (50 Kg and 100 Kg), weighed and sent to storage houses. Sugar is made in different sizes and accordingly classified into various grades I.E. large, medium and small.



On an average, Sugar recovery from Sugar cane varies from 8-14%. Bagasse accounts for 28-34% and remaining being water.

1. Procurement of Sugarcane- Sugarcane is harvested by farmers and transported to sugar mill.
2. After Weighment, Extraction of Juice- The sugarcane is passed through preparatory devices like knives for cutting the stalks into fine chips before being subjected to crushing in a milling tandem comprising 4 to 6 roller mills. In the best milling practice, more than 95% of the sugar in the cane goes into the juice.
3. Clarification-The treated juice on boiling fed to continuous clarifier from which the clear juice is decanted while the settled impurities known as mud is sent to rotary drum vacuum filter for removal of unwanted stuff called filter cake is discarded or returned to the field as fertilizer.
4. Evaporation- The syrup is again treated with sulphur dioxide before being sent to the pan station for crystalization of sugar. Crystalization takes place in single-effect vacuum pans, where the syrup is evaporated until saturated with sugar. At this point “seed grain” is added to serve as a nucleus for the sugar crystals, and more syrup is added as water evaporates.
5. Centrifugation- The massecuite from crystallizer is drawn into revolving machines called centrifuges. The perforated lining retains the sugar crystals, which may be washed with water, if desired. The mother liquor “molasses” passes through the lining because of the centrifugal force exerted and after the sugar is “purged” it is cut down leaving the centrifuge ready for another charge of massecuite.
6. Separation/Grading and packaging -The final product in the form of sugar crystal is dropped through pan section and this sugar is graded and picked in 50 kg/100kg bags. The grade of the sugar depends on the size of the crystal. Viz. Large (L), Small (S) and Medium (M).



## 8. **Sugar Products & By-Products:**

1. White Crystal Sugar:  
Used for human consumption as sweetener in day to day food items.
2. By-products
  - a. Molasses are mainly used in manufacturing Alcohol, E.N.A. Chemical, Pharma industry, Schools, Laboratories, Ethanol blending in petrol as fuel refinery, Cattle feed, Poultry farm feed & fishing feed etc.
  - b. Bagasse is mainly used as bio-fuel for boiler to generate steam in sugar mill and as raw material in paper mills for paper manufacturing.
  - c. Press mud is mainly used as fertilizer by the farmers.

## 9. **Raw Materials**

In India, sugar is produced only from sugarcane as the country's climatic conditions are suitable for cane cultivation. Sugarcane being an agricultural crop is subject to the unpredictable vagaries of nature, yielding either a bumper crop or a massive shortfall in its cultivation from year to year.

The quality of sugarcane improves with age, reaching a peak, and gradually declining. A rapid deterioration begins from the moment of harvest. To overcome this problem and to make the most of juice purity, cane has to be crushed within 8 to 10 hours of cutting.

The usual sugarcane constituents along with their content in sugarcane as a % of total weight are as given below:

Constituent	% of total weight
Water	69-75
Sucrose	8-16
Reducing sugars	0.5-2
Organic substances	0.5-1
Nitrogenous bodies	0.5-1
Ash	0.3-0.8
Fiber	10-16

Rainfall and temperature are the two important determining factors for the yield and quality of sugarcane. Although reduced level of rainfall can be substituted by irrigation or sprinkling of canal water.

Every ton of cane cultivation requires approximately 60-70 ton of water under controlled conditions. But under field conditions the water requirement for sugarcane varies with variations in soil and climatic conditions. The efficiency of water uptake and use varies with different varieties.

The location of the mill falls under West Champaran District of Bihar. Champaran is known to be the richest belt for sugar cane cultivation in Bihar. The soil and climatic condition of the area is suitable for cultivation of sugar cane and the area has history of sugarcane cultivation. Rainfall is heavier than most of the districts and is especially heavy in the terai region. The normal annual rainfall is about 56".

The unit's annual requirement of sugarcane for crushing at 100% capacity utilization is calculated as below:

Particulars	Quantum
Installed Capacity	10000
No. of days in season	160
Total Annual Requirement of cane (Quintals)	160,00,000

## 10 Sugarcane Availability & Its Future Prospect

### ( A ) Existing Sugarcane Availability :

The location of the mill falls under West Champaran District of Bihar. West Champaran is known to be the richest belt for sugarcane cultivation in Bihar. The soil and climatic condition of the area is suitable for cultivation of sugarcane and the area has a history of sugarcane cultivation. Rainfall is heavier than most of the districts and is especially heavy in the Tarai region of Himalayas where the sugar plant is located. The normal annual rainfall is about 40". River Gandak, which is a perennial river, flows right across the reserve area of the factory. So the water availability is high all year around, and the area along the large banks of the river can only grow sugarcane and any other crop is not suitable for that form of topology.

The farmers of this area have a culture of growing sugarcane for the last many decades and are highly skilled in growing and developing the sugarcane crop. After a takeover of the management in 2008, the company initiated extensive cane development programme and provided improved variety of seed, fertilizer and pesticides by way of loans and subsidies on year to year basis. Besides making prompt payment of cane price, the sugar mill arrange to provide the latest technology along with latest high yielding varieties of sugar cane. Also, the State administration took initiative and imposed restrictions on Kolhu, Crushers, which were operating in the reserved area of the sugar mill. All these measures have boosted the morale of the sugarcane grower. As a result, the area under cane as well as yield has increased considerably, as is evident from the figures given below :-

Sr. No.	Crushing Season	Total Cultivable Area (Hect.)	Area under Cane (Hect. )	Average Yield (Tonnes/ Hect.)	Total Cane Production (LMT)	Total Cane Crushed (LMT)	Crushing Days	Drawl %
1	2014-15	65587	23546	42	9.89	7.98	123	80.69
2	2015-16	65587	21558	42	9.05	7.47	109	82.54
3	2016-17	65587	22727	45	10.23	8.26	122	80.74
4	2017-18	76787	27594	50	13.80	11.38	154	82.46
5	2018-19	84987	35502	42	14.91	12.10	165	81.15
6	2019-20	84987	35267	40	14.11	10.68	147	75.69
7	2020-21	84987	35171	32	11.25	7.97	109	70.84
8	2021-22	84987	33174	35	11.61	8.19	116	70.54
9	2022-23	84987	31942	40	12.78	10.04	129	78.56
10	2023-24	84987	35695	40	14.28	10.04	136	70.31
11	2024-25	84987	36000	42	15.12	11.50	142	76.06
12	2025-26	84987	40794	48	19.58	15.10	150	77.12

**( B ) Future Prospects :**

At present the unit has access to 336 villages in traditional zone. The unit was having access to 295 villages in the traditional zone (earmarked villages) as per departmental letter no.2305 dated 24.09.2015 allocated for crushing season 2015-16 to crushing season 2019-20. These villages have cultivable area of about 65587 hectares where sugarcane plantation is undertaken. Beside, during the crushing season 2018-19, the Sugarcane Industry Department, Government of Bihar has allotted additional sugar cane area of 6 Blocks having 24 revenue villages having 11200 hectares cultivating sugar cane as main crop w.e.f. crushing season 2017-18, vide their letter no.1585 dated 20.09.2017 (enclosed herewith as Annexure- A) and Sugarcane Industry Department, Government of Bihar has allotted additional sugar cane area of 2 Blocks having 17 revenue villages having 8200 hectares cultivating sugar cane as main crop w.e.f. crushing season 2017-18, vide their letter no.1864 dated 19.12.2018 (enclosed herewith as Annexure- B)

These 24 & 17 villages have been continuously allotted as reserved zone of the factory during the crushing season 2017-18 & 2018-19. So, the total Cultivable area available to sugar mill is 84987 Hectare. With a view to improve the availability of sugarcane in the area by bringing more area under sugarcane besides improvement in the yield, the Company is regularly undertaking intensive cane development programme. Sugarcane Industry Department, Government of Bihar has allotted additional sugar cane area of Thakraha Block vide their letter no.1820 dated 08.11.2021. The company has also submitted to the Government of India, a proposal for soil testing laboratory to provide the Soil Card to the sugar cane farmers, which has been dully recommended by the State Government as well as Government of India. Keeping in view the above initiatives taken by the company for cane development in the operational area, the future sugarcane availability during the next 5 years will be as per details given below: -

Sr. No.	Crushing Season	Proposed Cane Crushing Capacity T.C.D	Total Cultivable Area ( Hect.)	Area under Cane ( Hect. )	Average Yield (Tonnes / Hect.)	Total Cane Production ( LMT )	Expected Cane Crushing ( LMT )
1	2022-23	8000	84987	31942	40	12.78	10.45
2	2023-24	8000	84987	35695	40	14.28	10.44
3	2024-25	8000	84987	36000	42	15.12	11.50
4	2025-26	10000	84987	40794	48	19.58	15.10
5	2026-27	10000	84987	42494	50	21.24	16.20

In order to cope with the increased sugarcane availability as is evident from the above position, it is considered expedient to further expand the crushing capacity to 10000 T.C.D. in the interest of sugarcane growers, the sugar factory as well as the Bihar State.

# 11. **Implementation Schedule**

Activity	Commencement	Completion
Acquisition of Land	Acquired	Acquired
Civil Works	July-24	Dec-24
Plant & Machinery		
-Order Placement	July-24	Oct-24
-Arrival	Oct-24	Mar-25
Installation Of Machineries	Mar-25	July-25
-Erection& Commissioning	July-25	Sep-25
Trial Runs	Oct-25	Oct-25
Commercial Production	Oct-25/Nov-25	



## 12. **Swot Analysis**

### **Strengths:**

1. Directors have a vast experience in sugar industry and other various kind of Business and already running the existing sugar mill since 2008.
2. Leadership quality of the promoters.
3. Innovation, commitment and vision of the promoters, with backward and forward integration planned right from beginning.
4. Professional and business-like approach of the promoters, with meticulous planning for speedy and successful implementation and operation
5. Adequate irrigation from river, canals within the cane area, as well as wells, ponds and tube wells, ensuring sustainable cane cultivation and availability on a long term basis.
6. Availability of sugar cane in the command area to ensure uninterrupted operation of the sugar plant as envisaged.
7. Favorable policy regime for sugar at the Central Govt. and in State of Bihar.
8. Additional employment generation due to expansion of crushing capacity and production.
9. Provides opportunities for small holder farmers to become micro-level entrepreneurs as provider of raw materials.
10. Reduces the volume of feedstock transport over a long distance.
11. Strengthen rural economies.

### **Weaknesses:**

1. Climatic conditions affect the growth of sugarcane for cane growers.
2. Timely supply of sugarcane to sugar mill as delay in supply after cutting crop reduces the moisture and also affect the recovery.
3. Increase in prices of procured sugarcane.
4. Changes in the Govt. policies related to sugar at Central Govt, level or at State Govt. Level.

### **Opportunities:**

- Excellent opportunity for expansion of standalone sugar plants and wheeling and banking of exportable power to third party consumers, for maximizing returns.
- Potential for trade of carbon credits from the project in the international market and increased returns.

### 13. Position of Plant & Machineries at different stages of project development up to Crushing capacity 8000 TCD.

#### a. At the time of take-over

At the time of acquisition of the company as a Sick unit from the erstwhile owners on 20<sup>th</sup> September 2008, the installed capacity of the unit was 2500 TCD. The plant was in a very poor condition requiring heavy repairs and replacement due to worn out machineries and equipment's. However, since the SS 2008-09 was approaching and there was not much time left for taking major repair and replacement work, the management carried out only the limited and necessary repair and replacement work. An expenditure of Rs. 349.16 lacs were incurred towards repairs & replacement machineries as per details given below:

Sl. No.	Particulars	Amount (Rs.in lacs)
<b>I</b>	<b><u>Repairs</u></b>	
1	Black Steel Tubes	15.67
2	Pipes, Valves, Bend, and other Fittings	18.53
3	Bearings	13.73
4	G.I. Sheets	12.72
5	M.S. Plates and other Iron & Steel	45.14
6	Welding Electrodes	8.70
7	Electrical Control Pannel	1.32
8	Paints	2.41
9	Cane Carrier Chain & Slats	5.80
10	Pumps & Motors	4.26
11	Electrical Items	7.24
12	Oil & Lubricants	8.41
13	Misc. Hardware Nuts, Bolts etc	24.00
14	Other Machinery Spares, Consumable etc	65.00
15	Contract Jobs	41.07
	Total (I)	274.00
<b>II</b>	<b><u>Replacement</u></b>	
	Juice Clarifier, Molasses Conditioner, O.C. Filter, Cane Unloader etc., Computers & Hardware, and other misc. fixed assets Total (II)	75.16
	Grand Total (I)+(II)	<b>349.16</b>

**b. Enhancement of capacity from 2500 TCD to 8000 TCD (Already completed).**

After close of SS 2009-10, the company took over the major work for modernization & expansion of the plant and incurred an expenditure of Rs.11628.05 lacs, out of which Rs. 1630.00 lacs were incurred for modernization and expansion of factory building during crushing season 2010-11 and 2011-12. The crushing capacity was increased from 2500 TCD to 5000 TCD by upgrading and installing various machineries and equipment's.

The crushing season 2012-13 was run on crushing capacity of 5000 TCD with the total cane crush of 50.61 lacs quintals in duration of 107 days against cane crush of 42.05 lacs quintals in duration of 127 days in season 2010-11.

<b>S. No.</b>	<b>Plant &amp; Machineries During 2012-13</b>	<b>Amount (Rs. In lacs)</b>
1.	DG Set 200 KVA	10.03
2.	Motor	18.47
3.	Centrifugal Machine 1750Centrifugal Machine 1750	35.68
4.	Sugar Dust Collection System	44.86
5.	Panel	23.49
6.	Bagasse Handling System	145.78
7.	New Roller	39.15
8.	Modification of Mill House	49.03
9.	Molasses Tank	267.16
10.	Insulation Work	5.98
11.	Vacuum Pump	5.54
12.	Evaporator	22.30
13.	Rack Elevator	22.72
14.	Rack Carrier	2.17
15.	Transformer	27.20
	<b>Total I</b>	<b>719.56</b>

S.No.	Plant & Machineries During 2013-14	Amount (Rs. In lacs)
	DG Set	10.90
	GRPF	153.43
	Mill Roller	20.57
	Juice Heater	30.27
	Sulphur Furnace (Burner)	52.89
	Motors	21.60
	Centrifugal Machine NK 1503	50.43
	Weighing Machine Mechanical 10 Ton	18.33
	Evaporator Modification	44.43
	Extension & Modification of Rack Carrier	8.15
	Instrumentation & Automation System	10.98
	Sulphur Furnace Modification	10.34
	Mud Mixture	17.49
	Centralized Lubrication System for Mills	5.29
	Molasses Tank	7.39
	Insulation Work	10.85
	Modification at Boiler	12.23
	Bagasse Elevator	6.84
	Pipes & Pipe Fittings	31.67
	Pump & Drive	5.56
	Staging Platform & Railing	2.38
	Pan Modification	2.87
	Centrifugal Machine Modification	2.25
	Vacuum Filter Modification	2.00
	Cabling Wiring and Electrical Installation	6.24
	<b>Total II</b>	<b>545.40</b>

S.No.	Plant & Machineries During 2014-15	Amount (Rs. In lacs)
1.	Air Cooled XLR 90 Ton	18.37
2.	Hot Water Line from Overhead Tank	4.07
3.	Hot Water Storage Tank	1.82
4.	Instrumentation at Mill	10.51
5.	Juice Heater	36.75
6.	Straightening of Cane Unloader	4.92
7.	Evaporation Station	132.65
8.	Primary & Inter Rack Carrier	2.60
9.	PRDS Station	34.46
10.	Boiler Chimney	20.81
11.	Molasses Tank	228.42
12.	Motors	23.55
13.	New Batch Type Centrifugal Machine 1750	61.39
14.	New Bio Compost	0.97
15.	New Centrifugal Machine 1503	30.17
16.	New Evaporator	103.09
17.	New Juice Sulphitor	13.26
18.	New PLC Panel Room for Boiling House	16.84
19.	New Vapour Line Juice Heater	23.65
20.	New PAN 80 Ton	165.70
21.	Panels	37.26
22.	Power House Building	36.11
23.	Pumps	80.27
24.	Rack for MBC & RBC	2.06
25.	New Semikestner	123.13
26.	New Vapour Cell	117.87
27.	Weighing Scale Additions	5.26
28.	Solar Panel 12v. 150 Watt with all accessories	0.63
29.	Microwave Brix Analyser	5.15
	<b>Total III</b>	<b>1341.74</b>

<b>S.No.</b>	<b>Plant &amp; Machineries During 2015-16</b>	<b>Amount (Rs. In lacs)</b>
1.	New ETP Plant	216.79
2.	Boiling House Modification	20.84
3.	Automation of Rotary Screen Tank (Mill House)	0.95
4.	New Cooling Tower	29.11
5.	Water Management for Discharge	24.16
6.	Gate & O/c Weighing Bridge	7.30
7.	Modification & Up gradation of IJT Boiler	31.23
8.	Tube well	5.00
9.	Centrifugal Machine Up-gradation	4.31
	<b>Total IV</b>	<b>339.69</b>

<b>S.No.</b>	<b>Plant &amp; Machineries During 2016-17</b>	<b>Amount (Rs. In lacs)</b>
1.	Auto Feed Control System	36.98
2.	Direct Contact Heater	146.88
3.	Mechanical Circulator	24.22
4.	Weighbridge	6.91
5.	Steam Saving & Automation in Boiling House	16.00
	<b>Total V</b>	<b>230.99</b>

<b>S.No.</b>	<b>Plant &amp; Machineries During 2017-18</b>	<b>Amount (Rs. In lacs)</b>
1.	Electrical Panel Room at Boiling House	11.57
2.	Panel Room at Mill House	31.15
3.	EOT Crane capacity 50 ton	64.60
4.	New ETP	81.58
5.	Workshop Machineries	80.26
6.	Electrical Installation at Power House	66.26
7.	Ulka CMR Mill	772.01
8.	Water management for 0 Discharge	9.77

9.	Mill House Machinery shed & Column Extension	68.46
10.	Mechanical Circular for PAN	156.91
11.	Straightening of Machineries Foundation Column	30.20
12.	Modification of Ash Handling System of Lipi Boiler	63.60
13.	Weighbridge	17.57
14.	Solar Panel	1.62
15.	Pumps	22.89
16.	Modification in New DCH	8.36
17.	Sugar Bag Conveyors	24.01
	<b>Total VI</b>	<b>1510.82</b>

<b>S.No.</b>	<b>Plant &amp; Machineries During 2018-19</b>	<b>Amount (Rs. In lacs)</b>
1.	Automation of Cooling Tower	7.31
2.	New ETP	162.13
3.	Water Management for 0 Discharge	23.73
4.	Motors	12.60
5.	Cane Unloader Trolley	12.45
6.	IJT Boiler Modification	33.49
7.	Molasses Tank No.5	245.13
8.	Molasses Tank No.6	243.67
9.	Modification of Molasses Tank No.2	16.71
10.	Molasses Tank No.7	250.19
11.	Molasses Tank No.8	243.99
	<b>Total VII</b>	<b>1251.40</b>

<b>S. No.</b>	<b>Plant &amp; Machineries During 2019-20</b>	<b>Amount (Rs. In lacs)</b>
1.	Solar Panel 110 KW	37.40
2.	Air Compressor kirloskar	23.17
3.	Sugar Weighing and bagging machines	29.22
4.	Rotary air blower for ETP	2.49
5.	Decanter for ETP	31.14
6.	New Vacuum Filter 14 x36' Universal Heavy Engg.	125.05
7.	IJT Boiler Dereator Automation	2.08
8.	ACC Modification	42.59
9.	Water Management System as per CPCB	3.51
10.	Fan Less Cooling Tower	3.69
11.	Paver tile plant	13.03
12.	Automation of Batch Type pan No-9	6.74
	<b>Total VIII</b>	<b>320.11</b>

<b>S.No.</b>	<b>Plant &amp; Machineries Expenses During 2020-21</b>	<b>Amount (Rs. In lacs)</b>
1.	Modification of Cane Unloader No-3	20.23
2.	Extension of cane Unloader Gantry at PCC by 30 Mtr.	38.89
3.	Air Compressor for Sugar Godown	0.34
4.	E-Boiler for steam economy, power saving 1200 KW	25.05
5.	Installation of 1No 1750 C/F machine of KCP-Five Calls	69.38
	<b>Total IX</b>	<b>153.89</b>



S. No.	Plant & Machineries Expenses During 2021-22	Amount (Rs. In lacs)
1.	3 MVA Convertor Transformer	28.50
2.	Tube well	9.02
3.	Weighbridge 100 Ton	35.60
4.	Water harvesting & Piezometer	3.48
5.	EOT Crane 5 Ton	23.25
6.	Electronic Weighing Machine 100 KG	0.09
7.	Rigour Sugarcane Juice Machine SS304 two machines	0.92
8.	Gas Powered Genset 30 KVA Mahindra	5.95
9.	HMT Semi-Automatic Lathe Machine	17.44
	<b>Total X</b>	<b>124.25</b>

S. No.	Plant & Machineries Expenses During 2022-23	Amount (Rs. In lacs)
1.	Automation of Cooling Tower	40.87
2.	1750 Centrifugal Machine Zuka	112.00
3.	Tube well	1.78
4.	Weighbridge 100 Ton	5.63
5.	Spray Pond	1447.76
6.	Curtain Condenser & Air Ejector	250.46
7.	Sewage Treatment Plant (STP) 150 KLD	56.79
8.	HCL Storage Tank for DM Plant	11.90
9.	ULKA Mill No.1 CMR 50" X 100"	978.08
10.	New Clarifier For ETP	1.44
11.	Hot Air Blower	0.06
12.	Bag Stitching Machine Conveyor Complete	5.55
13.	ERW Air Heater Tube OD63.5X2.64X6100 MM	23.23
14.	Portable Wooden Stacker 5 MTR Wide 650MM	5.45
15.	Diesel Tank Diameter 2.0x10.5 MTR	2.56
16.	Vertical Turbine Pump SVT450-40M For UGR	4.44
17.	Induction Motor 90KW/120 HP 4 Pole 415 V	2.57
	<b>Total XI</b>	<b>2950.31</b>

S.No.	Plant & Machineries Expenses During 2023-24	Amount (Rs. In lacs)
1.	Economizer Coils For Lipi Boiler	22.00
2.	Solar Panel	0.35
3.	Spray Pond	57.35
4.	Agriculture Equipment's for Sugarcane Farm	4.99
5.	Iron Weights - 50 Kg each	23.90
6.	SPM Analyzer and Data Acquisition System'	2.75
7.	Hydra model 20XWx66 Ft (CE Hyd. Mobile Crn)	25.56
8.	Hydraulic Cane Unloader For 5 TON SWL	69.75
9.	Vacuum Filter Station	277.19
10.	Milk Lime Station	87.61
11.	Curtain Condenser & Air Ejector New	108.36
12.	Weighbridge Cap. 100 Ton	28.01
13.	New Gate Smart Weighing System (Amity Weighing)	14.52
14.	AC VFD PANEL 37 KW	2.92
15.	AC VFD MODULE TYPE	24.30
16.	COMP MODULE INVERTOR	14.40
	<b>Total XII</b>	<b>763.95</b>

<b>Total Plant &amp; Machineries from I to XII</b>	<b>10252.36</b>
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#### 14. Plant & Machineries to be installed for Expansion of capacity from 8000 TCD to 10000 TCD

The company has decided to enhance the crushing capacity from existing 8000 TCD to 10000 TCD with an estimated cost of Rs.9467.50 including finance cost for construction of additional factory building (Foundations and other erection works) and to install the new required machineries and other equipment's and in the process of finalizing the orders for purchase of machineries & equipments and will install the same before start of crushing season 2025-26 and expecting the crushing season 2025-26 will be operated with enhanced capacity of 10000 TCD. The following major equipments ordered, to be ordered/purchased and will be installed are as under:

S.No.	Plant & Machineries to be installed	Qty	Estimated Amount	Promoter Contribution (Already Incurred)
<b>1</b>	<b>Clarifier</b>			
A	Clarifier (Dorr)	01 Set	251.00	251.00
B	Vacuum Filter 14' x 36'	01 Set	151.00	151.00
<b>2</b>	<b>Evaporator</b>			
A	Falling Film Evaporator ((FFE)	06 Lot	2,983.00	<b>869.05</b>
B	Plate type Heat Exchanger (PHE) - 2 Nos	01 Lot	40.00	
C	Cigar System	01 Lot	50.00	
D	CIP System	01 Lot	40.00	
E	Condensate Heater	07 Lot	280.00	
F	Sulphated Lime Juice Heater	02 Lot	60.00	
G	Direct Contact Heater (DCH)	03 Lot	45.00	
H	Lime Station	01 Lot	86.00	87.60
<b>3</b>	<b>Pan &amp; Crystallizer</b>			
A	Pans (80 T) & Mechanical Circulator	05 Lots	730.00	
B	Pans (60 T) & Mechanical Circulator	01 Lot	120.00	
D	Air Cooled Crystallizer	06 Lots	180.00	<b>18.00</b>
E	Existing Pan Condenser Modifications	07 Lots	53.00	53.00
<b>4</b>	<b>Vertical Crystallizer 300 and 500 Twin Type</b>	02 Lots	62.00	62.00
<b>5</b>	<b>Molasses Tank Storage</b>	02 Lots	494.00	255.00
<b>6</b>	<b>Electrical Panels</b>	01 Lot	150.00	
<b>7</b>	<b>Weighbridge</b>	01 Lot	200.00	200.00
<b>8</b>	<b>Civil Work (Mechanical &amp; Non-Mechanical)</b>		1,825.00	182.60
<b>9</b>	<b>Other Fixed Assets</b>		200.00	
<b>Total</b>			<b>8,000.00</b>	<b>2129.25</b>

Note: Finance/ Interest on Term loan will be borne by the company as per rate of interest applicable.

**Analysis of Proposal:**

**To provide the financial & social benefits with special emphasis on farmer's (cane growers), local people, including tribal population, if any, in the area: -**

1. To meet the increasing demand of **Sugar** and to utilize the surplus availability of Sugarcane in the area, the management of Tirupati Sugars Limited has embarked upon expansion of crushing capacity of its Existing Sugar Mill Project.
2. No power will be outsourced from outside agencies. Power requirement will be met by own captive power generation plant.
3. New employment opportunities will be generated due to proposed expansion activities.

**15. List of various statutory approvals and clearances**

1. Approval from Bihar State Pollution Control Board.
2. Environment clearance from Ministry of Environment and Forest / CPCB (Central Pollution Control Board).
3. Department of Civil Aviation (for Chimneys Height).
4. State Investment Promotion Board (Under Process).
5. Fire NOC
6. State Excise.
7. IEM for 10000 TCD (Applied and under process)

## 16. Environmental Management

### General

The pollutants in the form of solids, liquids and gases are generated from various technological units of sugar plant. Pollution of the environment not only adversely affects the human beings, flora and fauna but also shortens the life of plant and equipment. This vital aspect, therefore, has been taken into account while planning the plant and equipment for expansion and adequate measures have been proposed to limit the emission of pollutants within the stipulations of statutory norms.

During the process of sugar manufacturing there are chances of some activities which may cause pollution in some or other form i.e.

#### a. Solid waste:

Bagasse and press mud. These are the by-products. Bagasse is used as fuel for boiler to generate steam and press mud is a very strong source of compost for farmers and does not create pollution. Bagasse shall be fully consumed captively for generation of power.

#### b. Waste water:

Sugar cane is raw material for making sugar in crystalline form. All the intermediate products in processing are in liquid/fluid form. The source of effluent may be classified as:

1. Floor washing
2. Periodical cleaning
3. Boiler blow down
4. Cooling water

The quality of effluent mostly depends upon house-keeping and standard of maintenance. The spillage from tanks or leakage from glands of various pumps of sugar solution shall may affect badly the quality of effluent by mixing of high pollutant liquid (sugar solution).

The waste water from mill during operation is mostly contaminated with:

- i. Oil & greasy matter from the machinery
- ii. Suspended matter like small amount of bagasse, press cake.
- iii. Carbohydrates from sugar bearing liquids.

The company has efficient ETP with suitable capacity for its existing capacity and further proposes to install another ETP for expansion program to treat the waste- water and make the water most suitable for irrigation or in house use.

#### c. Air Pollution:

Source – Boiler chimney outlet. Pollution in air due to various emissions from boiler stake gas e.g. unburned solids, obnoxious gases is very much possible.

An efficient air pollution control plant is installed with new boilers to arrest the solids in flue gas and solids so separators are mixed with basic fuel for boiler. The company has taken various steps as per Instructions and Guidelines laid down by Ministry of Environment & Forests, Government of India, and Central Pollution Control Board, New Delhi. Further National Green Tribunal, has also issued several guidelines which are also followed by the sugar mills. The company is bound to install and adopt all the latest technologies in future which are required from time to time to minimize all type of pollution including Air Pollution.

## 17. Overall Market Outlook

ISMA is optimistic about the overall sugar market for the 2024-25 season. The projected opening stocks as of October 1, 2024, are estimated at 9.05 mt, with a gross sugar production of **33.3 mt**. The total availability of sugar during the year is expected to be **42.35 mt**, with domestic consumption estimated at **29.0 mt**. By September 30, 2025, the closing stock is projected at **13.35 mt**. Excluding the normative stocks of **5.5 mt**, the excess stocks are pegged at **7.85 mt**. These projections assume average rainfall and other optimal conditions for the remainder of the season.

The Indian sugar market is projected to experience a slight decline in production for the 2024-25 season due to reduced sugarcane acreage. However, sufficient excess stocks and improved water availability are expected to support a balanced market. Exporters can expect a stable and productive season, with optimistic projections for overall market health.

### The fair and remunerative price (FRP) system

The GOI establishes a minimum support price (MSP) for sugarcane based on recommendations from the Commission for Agricultural Costs and Prices (CACP), consultations with state governments, and consultations with sugar industry and cane growers' associations.

In MY 2009/10, the GOI announced a new Fair and Remunerative Price (FRP) system that links cane prices with miller's incomes<sup>9</sup>. Several state governments augment the FRP, typically by 20-35 percent, due to political populism rather than market pricing. Sugar mills are required to pay the "state advised price" (SAP) to sugarcane farmers irrespective of market prices. A forecast of a smaller cane crop normally forces millers to pay higher cane prices, thus inflating sugar prices, which exceed the MSP/FRP in most of the growing states.

The Cabinet Committee on Economic Affairs has approved the Fair and Remunerative Price (FRP) of sugarcane for the 2021-22 marketing year (October-September) at Rs 290 per quintal. A premium of Rs 2.90/quintal will be provided for each 0.1 per cent increase in recovery over and above 10 per cent. There will be a reduction in FRP by Rs 2.90/quintal for every 0.1 per cent decrease in recovery. There would be no deduction where recovery is below 9.5 per cent. Such farmers will get Rs 275.50 per quintal for sugarcane in ensuing sugar season 2021-22 in place of Rs 270.75 per quintal in current sugar season 2020-21. The cost of production of sugarcane for the sugar season 2021-22 is Rs 155 per quintal. The FRP of Rs 290 per quintal at a recovery rate of 10 per cent is higher by 87 per cent over production cost, thereby giving the farmers a return of much more than 50 per cent over their cost.

### Projected Sugar Output

The Indian Sugar Mills and Bio-Energy Manufacturers Association (ISMA) has projected the sugar output for the 2024-25 season at **33.11 million tonnes (mt)**. This estimate is slightly lower than the previous year's output of **33.995 mt**. The decline is attributed to reduced sugarcane acreage in critical states such as Maharashtra and Karnataka.

### Acreage and Production Insights

ISMA's projections are based on satellite images obtained in late June 2024, which estimate total sugarcane acreage at **5.61 million hectares (mh)**. This represents a six percent decrease from the previous year's **5.944 mh**. Despite this reduction, the sugar market is expected to remain balanced due to sufficient excess stocks supporting the Ethanol Blending programme and exports. In Uttar Pradesh, sugarcane acreage is estimated to decrease by three per cent to 2.332 mh. However, sugar

output in the state is projected to increase to **11.3 mt from 10.976 mt last year**. Maharashtra's sugarcane acreage is expected to decrease by 13 percent to **1.310 mh**, with an estimated sugar output of **11.102 mt**, down from **11.718 mt** last year. Similarly, Karnataka's sugarcane acreage is projected to decline by eight percent to **0.620 mh**, with sugar output expected to fall to **5.651 mt from 5.824 mt** the previous year. The reduction in these states is primarily due to last year's deficient rainfall in central cane-growing districts.

Despite the reduced acreage, rainfall in the current year has been abundant, approximately 30 per cent above average. The optimistic rainfall forecast for the remainder of the monsoon season is anticipated to enhance cane productivity and sugar recovery. This improved water availability is expected to mitigate the impact of the reduced cane area, resulting in only a minimal decline of 3-5 per cent in gross sugar production in Maharashtra and Karnataka.



## 18. Sugar Policy

Sugar policy division is responsible with policy making and to make amendments required from time to time w.r.t. Sugarcane (Control) Order 1966, the Sugar (Control) Order 1966 and the Sugars Price Control Order 2018. Further, Directorate of Sugar and Vegetable Oils is responsible to implement these orders. Various provisions given in these orders are as follows:

1. The Essential Commodities Act 1955
  - Sugarcane and Sugar are covered under the Act
  - Section 3 & 5 gives powers to regulate Sugar Sector
2. The Sugarcane (Control) Order 1966
  - Gives powers to fix FRP of sugarcane, ensure payment of cane dues to farmers.
  - Provisions to establish sugar factory.
3. The Sugar (Control) Order 1966
  - To regulate production, sale, packaging and international trade of sugar.
  - To release quota for sale, movement and export/import of sugar.
4. The Sugar Price (Control) Order 2018
  - To determine Minimum Selling Price (MSP) of sugar.
  - To inspect, entry search and seizure of sugar mills, godown etc.

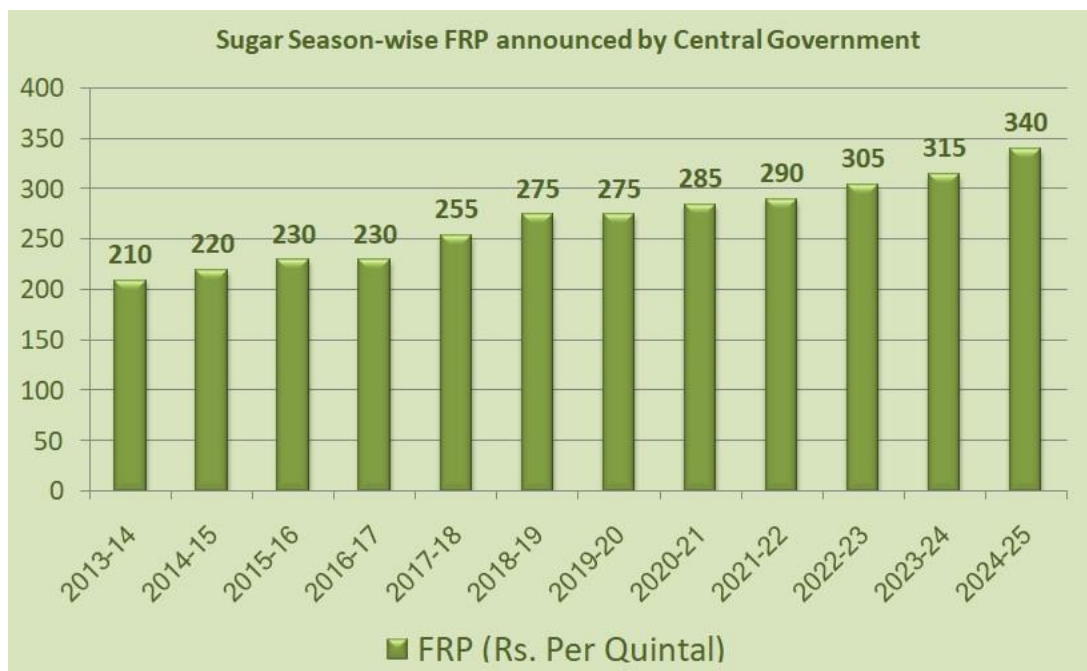
### Cane Price Payment to Sugarcane Farmers

With the amendment of the Sugarcane (Control) Order, 1966 on 22.10.2009, the concept of Statutory Minimum Price (SMP) of sugarcane was replaced with the 'Fair and Remunerative Price (FRP)' of sugarcane for 2009-10 and subsequent sugar seasons. The cane price announced by the Central Government is decided on the basis of recommendations of the Commission for Agricultural Costs and Prices (CACP) in consultation with the State Governments and after taking feedback from associations of sugar industry. FRP is the minimum price that sugar mills are supposed to pay to the farmers for purchase of sugarcane. However, some States determine their own State Advised Price (SAP) which is generally higher than FRP and it is announced by key sugarcane producing States namely Uttar Pradesh, Punjab, Haryana & Uttarakhand

Fair and Remunerative Price (FRP)	State Advised Price (SAP)
<ul style="list-style-type: none"> <li>➤ FRP of sugarcane is fixed before to ensure guaranteed price to sugarcane growers.</li> <li>➤ FRP is decided on recommendations of the Commission for Agriculture Costs and Prices (CACP) in consultations with State Governments and other stakeholders.</li> <li>➤ FRP is linked to a basic recovery rate of sugar, with a premium payable to farmers for higher recoveries, to ensure that higher sugar recoveries are adequately rewarded.</li> </ul>	<ul style="list-style-type: none"> <li>➤ 4 States viz. Punjab, Haryana, Uttar Pradesh and Uttarakhand announces SAP which is normally higher than FRP.</li> <li>➤ In Uttar Pradesh and Uttarakhand, Responsibility of cane payment at SAP is on sugar mills. Therefore, SAP puts additional burden on sugar mills of these States.</li> <li>➤ In Punjab, State Government pays SAP which is 100% in case of co-operative sugar mills and 2/3(66.6%) in case of Private Sugar Mills of differential amount exceeding FRP.</li> <li>➤ In Haryana, State Government provides subsidy to sugar mills based on recovery % to meet the gap between SAP and FRP.</li> </ul>

### Sugar Season-wise FRP announced by Central Government

FRP for ensuing sugar season 2024-25 has been fixed at Rs.340 per quintal linked to a basic recovery rate of 10.25% and reduction in FRP at the same rate for each 0.1% decrease in the recovery rate till 9.5%. With a view to protect interest of farmers the Government has decided that there shall not be any deduction in case where recovery is below 9.5%; such farmers will get Rs.315.10 per quintal for sugarcane. FRP announced by the Government during last 10 years is as below.



### Sugar Pricing Policy

With a view to protect the interests of farmers, concept of Minimum Selling Price (MSP) of Sugar has been introduced w.e.f. 07.06.2018 so that industry may get at least the minimum cost of production of sugar, so as to enable them to clear cane price dues of farmers. MSP announced by the Government is as follows:

S. No.	Date of Notification	MSP of white/refined sugar
1.	07.06.2018	Rs.29/kg.
2.	14.02.2019	Rs.31/kg.

MSP of sugar has been fixed after taking into account the Fair & Remunerative Price (FRP) of sugarcane and minimum conversion cost of the most efficient mills.

### Export-Import Policy

#### Export of Sugar

In order to prevent uncontrolled export of sugar & with a view to ensure sufficient availability of sugar for domestic consumption at a reasonable price, Directorate General of Foreign Trade (DGFT), Ministry of Commerce has also amended export policy in respect of sugar and covered it under restricted category w.e.f. June,22 for 2021-22 sugar season.

Government of India has extended 'Restriction' on export of Sugar (Raw Sugar, Refined Sugar, White sugar and Organic Sugar) until further orders vide (DGFT's Notification No.36/2023 dated 18.10.2023.

### **Import of Sugar**

Central Government has increased custom duty on import of sugar from 50% to 100% w.e.f. 06.02.2018.

Distribution of sugar through Public Distribution System (PDA) for Antyodaya Anna Yojana (AAY) families:

The Government of India has reviewed the Sugar Subsidy Scheme and it has been decided to give access to consumption of sugar as a source of energy in diet, for the poorest of the poor section of the society i.e. AAY families. Accordingly, it has been decided that the existing system of sugar distribution through PDS may be continued as per the following:

- a) The existing scheme of supply of subsidized sugar through PDS may be continued for restricted coverage of AAY families only, providing 1 kg of sugar per AAY family per month.
- b) The current level of subsidy at Rs.18.50 per kg provided by the Central Government to States/UTs for distribution of sugar through PDS may be continued for the AAY population. The States/UTs may continue to pass on any additional expenditure on account of transportation. Handling and dealers' commission etc. over and above the retail issue price of Rs.13.50 per kg to the beneficiary or bear it themselves.

Presently 26 states/UTs, are participating in the scheme.

Further, it has been decided that the existing scheme of supply of subsidized sugar to AAY families through PDS may be continued over the XVth Finance Commission (FC) cycle (i.e. from 2021-22 to 2025-26) with total financial outlay of Rs.1817.60 crore.

**19. Incentive policy of Sugarcane Industry Department, Government of Bihar, Patna**

- a. *Incentive policy of Sugarcane Industry Department, Government of Bihar, Patna vide Resolution No.593 dated 04.03.2014 enclosed as Annexure-1.*
- b. *Guidelines for implementation of the above scheme issued vide letter No.1/Regu. -7-7005/2012-2532 dated 31.10.2014 enclosed as Annexure-2.*

