

SUGAR



ENA

ETHANOL



# KBK Chem-Engineering Pvt. Ltd

Group Company of Shree Renuka Sugars Ltd.

(A Wilmar International Ltd. Subsidiary)

EPC solution and technology provider  
Bioethanol, Sugar & Allied Industries

# WE ARE:



## Establishment

A wholly owned subsidiary of Shree Renuka Sugars Limited (Under Management of Wilmar International Ltd.).



## Expertise

Distillery, Sugar, Power Plant, Edible Oil & Other Chemical plants.



## Execution

- **180** + projects across 5 continents
- 100 KLPD Distillery commissioned in record **8 months..**



## Innovation

- **1<sup>st</sup>** Cane Juice to ethanol plant.
- Executed Plant on low steam pressure of **1 bar(g).**

## Why KBK ?

We provide tailormade & customized solution on LSTK/EPC Basis for :



- Anhydrous Alcohol- Fuel grade (Ethanol)



- Rectified Spirit- RS & Export Quality Rectified Spirit- EQRS



- Extra Neutral Alcohol- ENA



- Industrial Grade Alcohol



- Ethyl Acetate, Acetic Acid & Chemical Plants

## Why KBK ?

- Engineering, supply, erection and commissioning as per ASME Standard
  - ✓ Sugar Plants
  - ✓ Static and rotary Equipment for fish meal and meat processing.
  - ✓ Edible oil Plants
- **Efficiency & Productivity** improvements of distilleries, sugar plants & refineries, Chemical plants.

# Reduction in Steam Consumption lit/lit of Ethanol

## Liquefaction

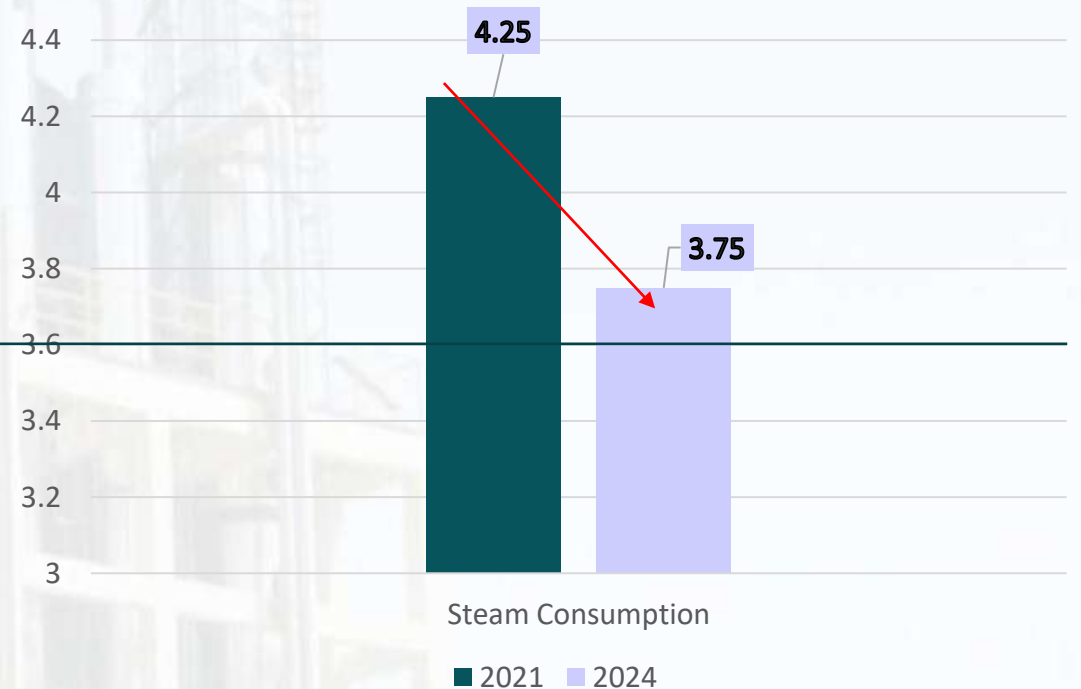
- Cold cooking of grain slurry.

## Distillation @ 1 bar g

- All Column Vacuum operation
- Vapour feed directly to MSDH

## Evaporation

- Zero Steam Evaporation





# Reduction in Water Consumption lit/lit

## Liquefaction

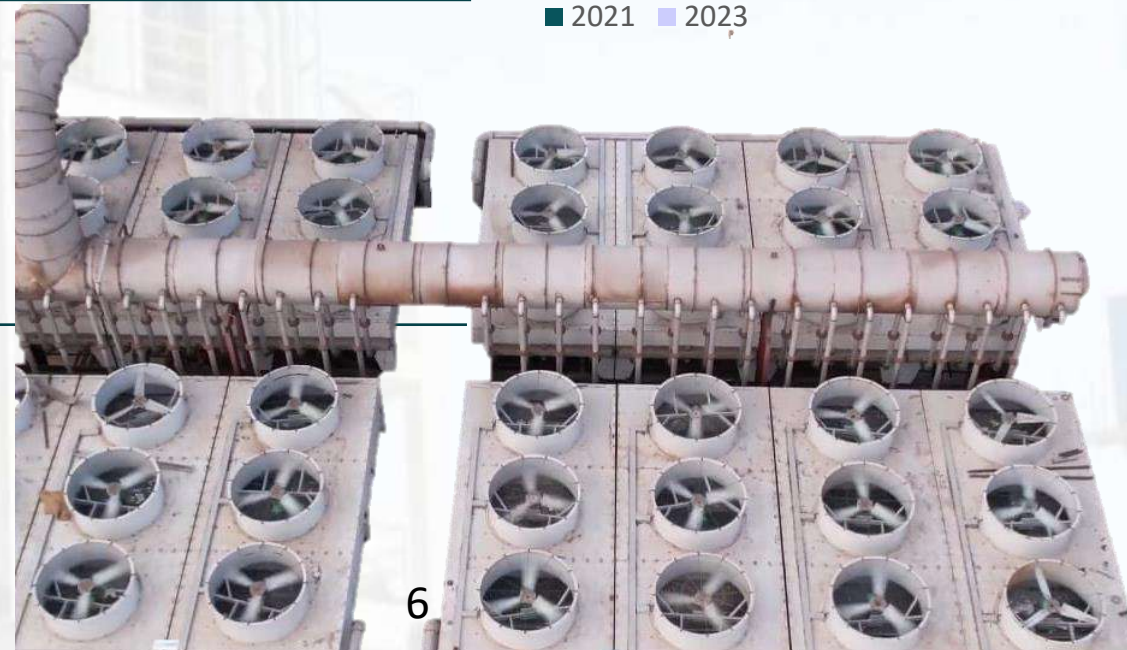
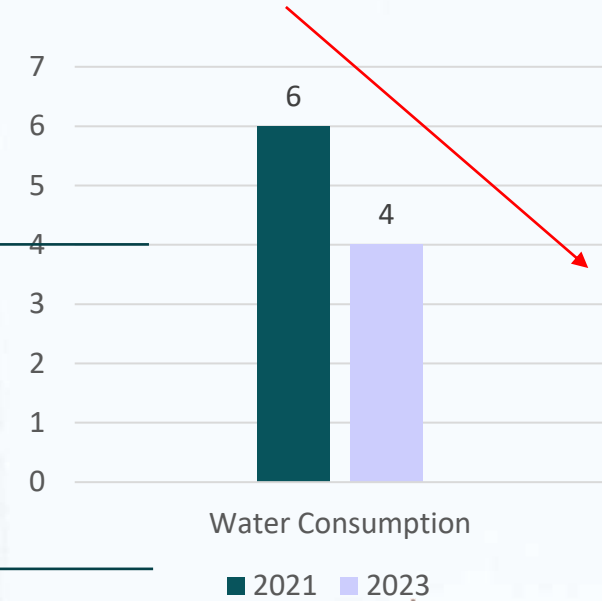
- Recycling of thin slop (22%>)

## Distillation & Evaporation

- Use of Air-cooled Condenser
- Zero Steam Evaporation.

## CPU

- Segregation of effluents based on Organic load & TDS
- Multiple Stage RO



# Zero Wastewater discharge

## Distillation

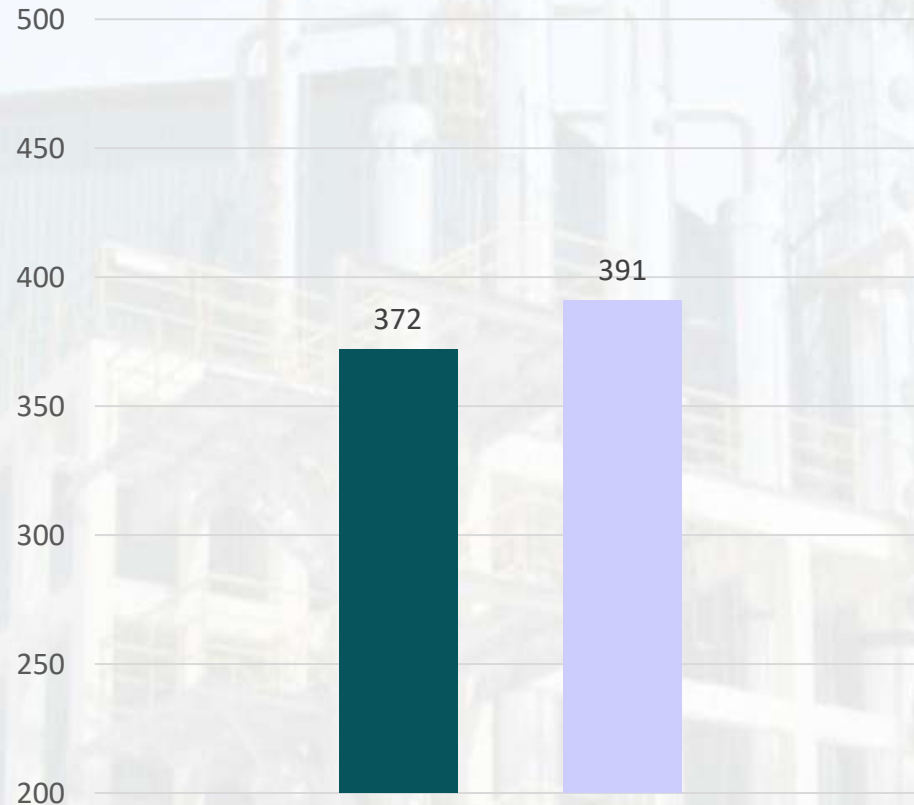
- Use of Air-Cooled Condenser

## Wastewater Recycle

- 100% Spent Lees recycle to Liquefaction
- 75% Process Condensate Recycle
- Dryer Condensate recycle
- Segregation of effluents based on Organic Load & TDS
- Multiple Stage RO



# Recovery Boost from Maize Itr/ton



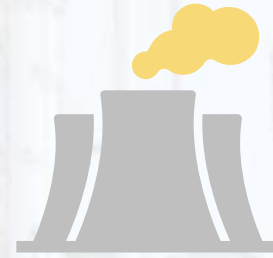
**Starch considered in  
Maize = 60% w/w**





## Fermentation

- ✓ 12% -14% v/v ethanol in wash
- ✓ Up to 93% efficiency
- ✓ Residual Sugar < 0.5%
- ✓ Residual Starch < 1.3%



## Steam Consumption :

- ✓ Wash to ethanol Mode incl. Dry-house
  - 2.5 Kg/lit on sugary feedstock
  - 3.7 kg/lit on starchy feedstock
- ✓ Wash to ENA Mode incl. Dry-house
  - 4.2 Kg/lit on sugary feedstock
  - 4.5 kg/lit on starchy feedstock
- ✓ Plant operation @ < 1 barg Steam Pressure



## Water Consumption w/o ACC / MVR

- ✓ 2.2 lit/lit – Syrup mode
- ✓ 3.6 lit/lit – Grain mode
- ✓ 95% of Condensate recycle possible.



## Power Consumption :

- ✓ <450 kWh/KL

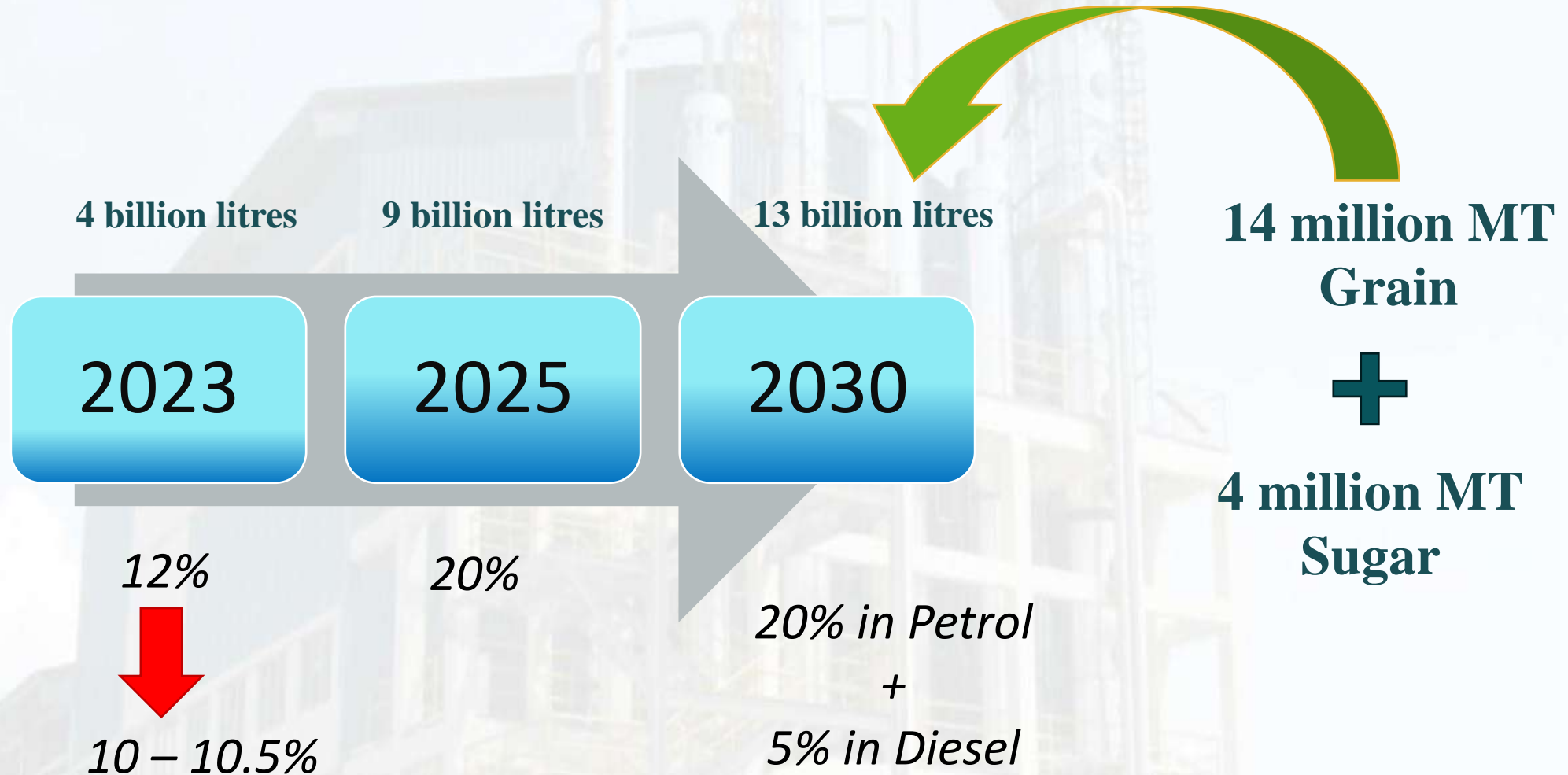


- ✓ 99% of ethanol recovery from min 1% v/v feed to 99.8% v/v matching **IS 15464:2022, AU, GB 18350-2013** as well as **EN 15376:2014**

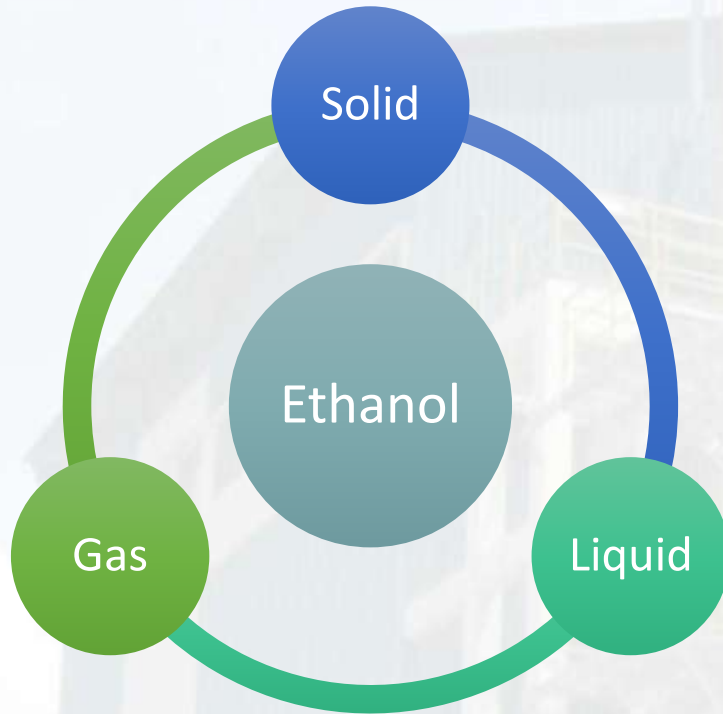
## Achievements

- First company to execute the projects on EPC basis in India in Distillery Segment.
- Successfully Executed project on steam pressure as low as 1 bar(g).
- Executed 700 KLPD distillery on Turnkey basis along with complete ZLD Plant.
- Introduced PKC as an alternative feedstock.
- Indigenous manufacturing of **DWGS dryer & GAC Column.**
- Reduction of biological load to increase **waste-water** recovery more than 95%.

# CURRENT ETHANOL BLENDING SCENARIO



**MATTER TO ETHANOL –**



9 - 10% ethanol in wash  
**Bamboo**



8 - 9% ethanol in wash  
**PKC**



**99.8%  
Ethanol**



**Sorghum**  
10 - 11% ethanol in wash



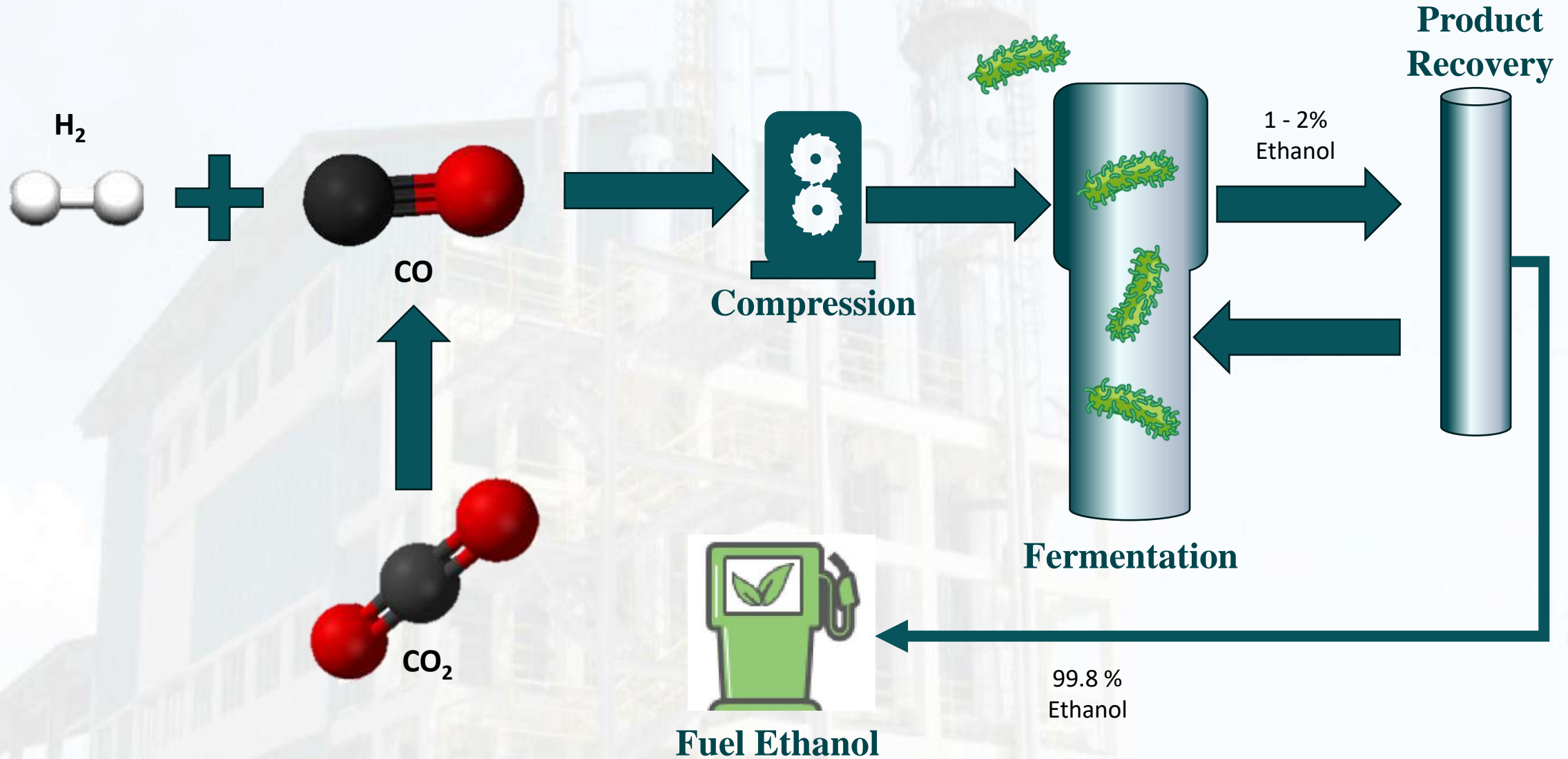
**Industrial  
Off Gas**  
1 - 2% ethanol in wash



**Juice**  
6 - 7% ethanol in wash



# FLOW DIAGRAM OF NEXT GEN ETHANOL



# OUR QUALITY:

We are following QMS and certified for the same.

Following are the primary deliverables to our clients:

- Quality Assurance Plans for both raw material & equipment
- Cause & effect Analysis
- HAZOP analysis
- Safe Operating procedure/Manuals



## OUR STRENGTHS:

- Professional & Experienced Team.
- Facilities to provide hands on training at our SRSL distilleries.
- Complete in-house Engineering & Design through Aspen, ChemCAD, Plant 3D/ SolidWorks, Navisworks, PV Elite, Sugars, Tekla & Staad Pro.
- In-house Quality control for in process manufacturing & final Product based on ASME, ASTM, TEMA, API, JIS standards.
- Working with international inspection agencies like TUV, SGS, Bureau Veritas etc.

## OUR STRENGTHS:

- **ISO 9001:2015** certified Manufacturing facility having processing capacity of **500 tons/month**.
- PED Certified for Europe
- Online troubleshooting.
- 3 manufacturing bays.
- Excellent Connectivity by Road, Rail, Sea & Air.
- Serving Wilmar manufacturing sites globally & maintaining international standards.



## OUR INFRASTRUCTURE:

We have a modern workshop equipped with latest machinery and competent manpower:

- Workshop Area: 50,000 Sq. Ft.
- Production Capacity: 500 Tons/Month
- Total Manpower Strength : 200 + nos.



*Pot Stills Supplied to Brigs & Burton*



# PROJECT HIGHLIGHTS



**Ekarat Pattana Co.  
Ltd, Thailand**  
**200 KLD ENA &  
Ethanol**



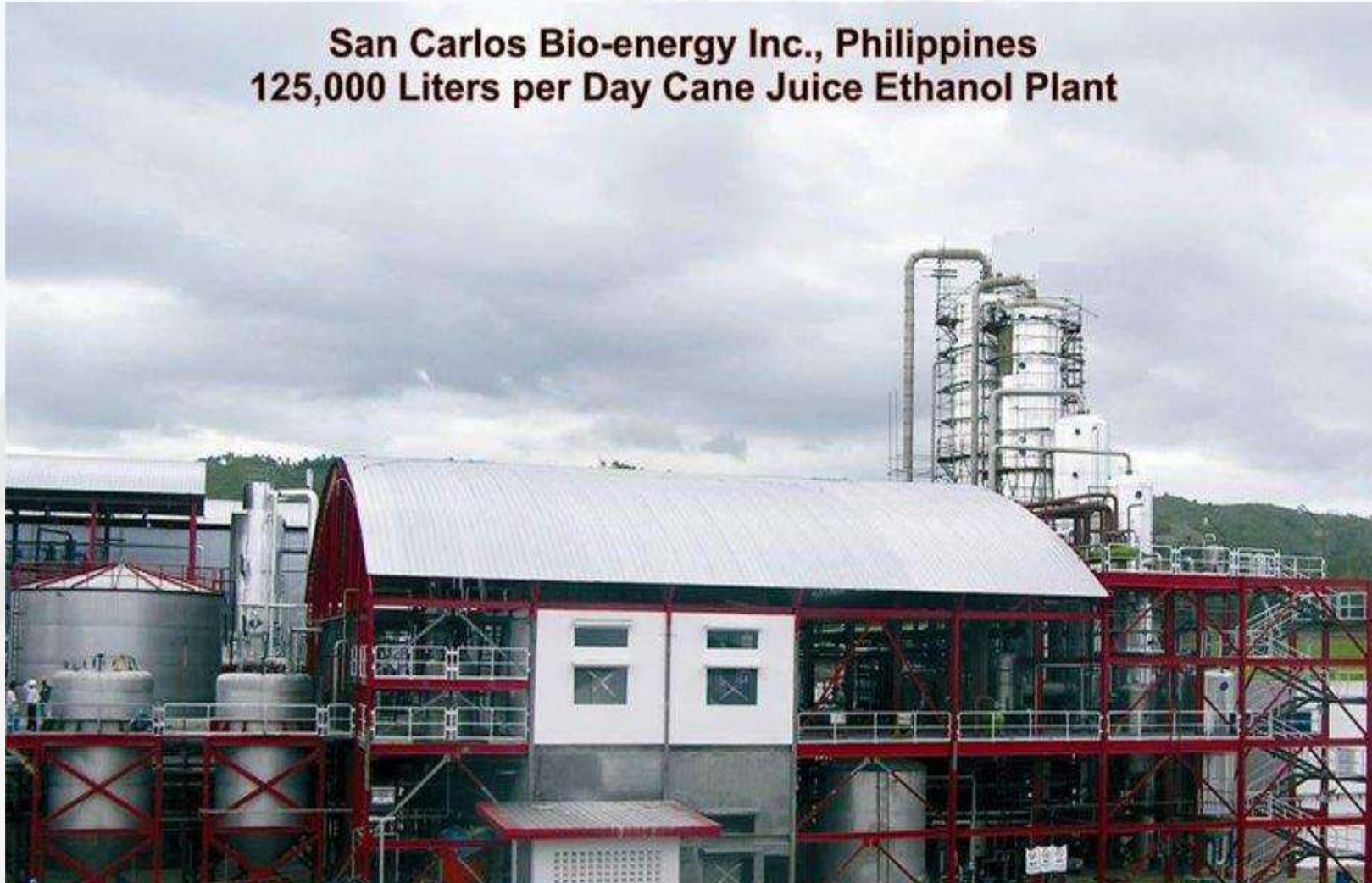


Roxol Bio-Energy  
Corporation, Philippines  
100 KLD ENA & Ethanol





**San Carlos Bio-energy Inc., Philippines  
125,000 Liters per Day Cane Juice Ethanol Plant**





# Kilimanjaro Bio-Chem Ltd, Tanzania.

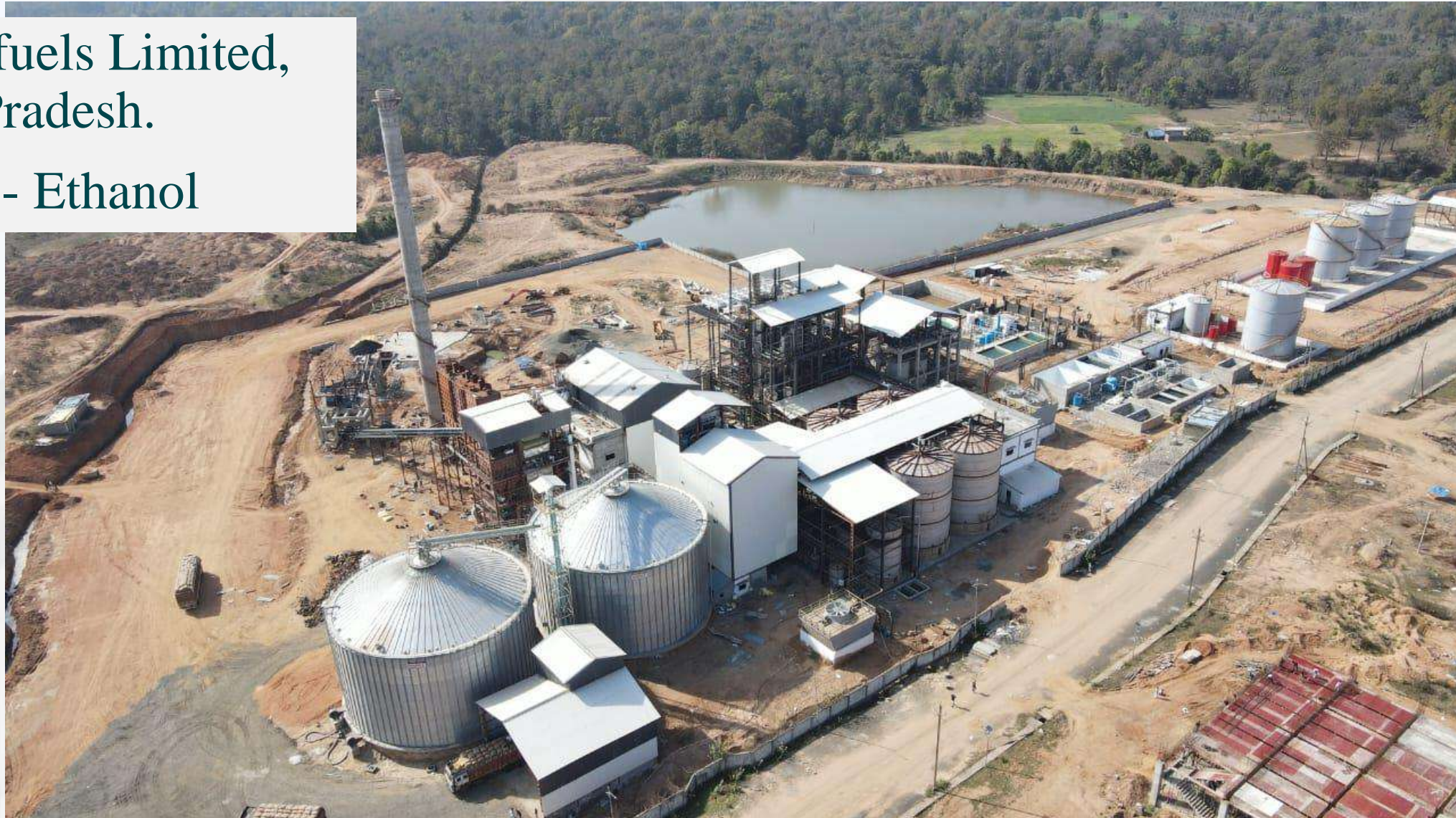
100 KLD - Ethanol





# Betul Biofuels Limited, Madhya Pradesh.

100 KLD - Ethanol





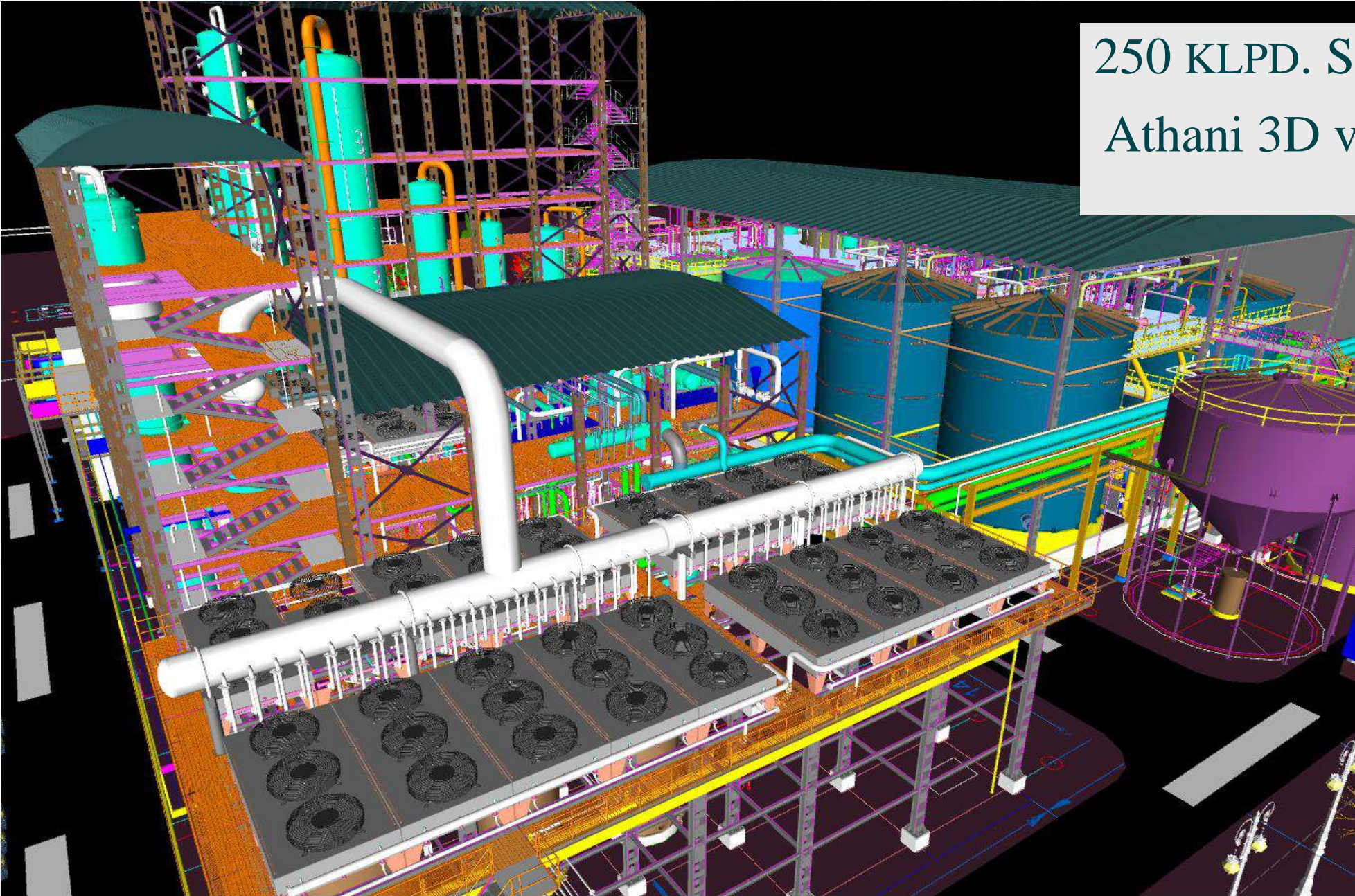


Mekalsuta  
Sugars Ltd,  
MP





250 KLPD. SRSL,  
Athani 3D view





## 250 KLPD. SRSL, Athani





## 250 KLPD. SRSL, Athani







**400 KLPD Cane Juice to Ethanol.  
SRSL, Munoli**



# BARAMATI AGRO LTD, BARAMATI. 100 KLD RS, ENA & Ethanol





## BMSW Evaporation Plant 1535 M3/Day





## 1200 m<sup>2</sup> DWGS Dryer





SRSL, Athani,  
Karnataka.  
2200 m<sup>3</sup>/day  
Evaporation  
Plant



# Vinasse Bio Digester for Roxel Bio energy Ltd , Philippines







Rotary Fish  
Meal Drier  
for Janata  
Fish Meal,  
Bangalore

# PROJECT PROFILE



## DISTILLARY PROJECTS:

ONGOING ETHANOL PROJECTS					
S. No.	Customer	Scope	Year	Products	Type of Construction
1	Mekalsuta Sugar Pvt. Ltd., Indore, MP	100 KLD Dual Feed Mode Distillery (Grain & Cane syrup/molasses)	2022-2023	ENA/Ethanol	PP
2	Nakshatra Biofules Pvt. Ltd., MP	200 KLD Grain based Distillery plant with ZLD	2022-2023	RS/Ethanol	PP
3	Shree Renuka Sugars, Munoli	2 * 350 KLD Molasses/cane SYRUP Distillery Plant with 75 TPH Incineration Boiler & 8.5 MW POWER PLANT & ZLD system	2021-2022	ENA/Ethanol	EPC
4	Shree Renuka Sugars, Athani	200 KLD Molasses/cane Juice Distillery Plant with ZLD system	2021-2022	RS/Ethanol	EPC
5	Chandrika Power Pvt. Ltd., Bihar	60 KLD Grain based Distillery plant with ZLD	2021-2023	RS/Ethanol	EPC
6	Betul Biofuel Pvt Ltd., MP	100 KLD Grain based Distillery plant with ZLD	2022-2023	RS/Ethanol	LSTK
7	Ethimale, Sri Lanka	15 KLD ENA Distillery	2021-2023	ENA/Ethanol	EPC
8	Vista Invest (P) Ltd, Zambia	600 m3/day Raw / BMSW / Thin slop spent wash Evaporation Plant	2021-2022	Evaporation	PP

\*PP : Process Plant

## COMPLETED PROJECTS:

### DOMESTIC PROJECT'S

#### KARNATAKA

1	Shree Renuka Sugars, Athani	400 KLPD Molasses/cane syrup Distillery Plant with 75 TPH Incineration Boiler & 8 MW power plant	2019	ENA/ETHANOL	Turnkey
2	Shree Renuka Sugars, Hawalga	400 KLPD Dual mode plant Grain / Molasses/cane syrup Distillery Plant with 75 TPH Incineration Boiler & 8 MW power plant	2020	ENA/ETHANOL	Turnkey
3	SCM Sugars Ltd., (NSL Sugars Ltd.) Mandya	60 KLPD Molasses Based Distillery Plant	2011	ENA	PP
4	Kartika Agro Industries Ltd., Bagalkot	60 KLPD Dual feed Grain + Molasses Based Distillery Plant with ZLD	2011	ENA	Turnkey
5	Shamanur Sugars Ltd., Harihar	60 KLPD Dual feed Grain + Molasses Based Distillery Plant with ZLD	2011	ENA	Turnkey
6	GMR Industries Ltd., Haliyal	45 KLPD Molasses Based Distillery Plant	2010	ENA	PP



## COMPLETED PROJECTS:

### MAHARASHTRA

1	Baramati Agro Ltd., Baramati	60 KLPD Molasses Based Distillery Plant	2008	ENA	PP
2	Victoria Agro Food Processing Pvt. Ltd., Latur	60 KLPD Grain based Distillery plant	2010	ENA	Turnkey
3	Sanjivani S S K Ltd., Kopergaon	60 KLPD Molasses Based Distillery Plant	2015	EQRS, ENA, ETHANOL	PP
4	Loknete Baburao Patil S.S.K.Ltd., Solapur	60 KLPD Molasses Based Distillery Plant	2018	Ethanol	PP
5	Dhaval Pratapsinha Mohite Patil Agro Industries Ltd., Akhuj	45 KLPD Grain Based Distillery Plant with ZLD	2012	ENA	Turnkey
6	Jubilant Organosys Limited, Neera	45 KLPD Molasses Based Distillery Plant	2012	ENA	PP
7	Natural Sugars Limited, Latur	45 KLPD Molasses Based Distillery Plant	2011	ENA	Turnkey
8	Loknete Baburao Patil S.S.K.Ltd., Solapur	30 KLPD Molasses Based Distillery Plant	2010	ENA	Turnkey
9	Ghodganga S.S.K. Ltd., Shirur	30 KLPD Molasses Based Distillery Plant	2011	ENA	PP
10	Pranav Agrotech Industries Ltd., Gangapur	30 KLPD Grain Based Distillery Plant	2013	ENA	PP

## COMPLETED PROJECTS:

ANDHRA AND TAMILNADU					
1	Empee Distilleries limited, Chennai	70 KLPD Grain based Distillery Plant	2010	ENA	PP
2	GMR Industries ltd, Vizag	50 KLPD Molasses Based Distillery Plant	2013	ENA	PP
3	Krishnaveni sugars ltd, Hyderabad	60 KLPD Dual feed Grain + Molasses Based Distillery Plant	2012	ENA/ETHANOL	PP
4	Kothari Sugars & Chemicals limited, Trichi	45 KLPD Molasses Based Distillery Plant	2012	ENA	PP
5	Gayatri Sugars Ltd, kamareddy	45 KLPD Molasses Based Distillery Plant	2007	ENA	PP
MADHYA PRADESH AND UTTAR PRADESH					
1	Dhampur Sugar Mills Ltd, Dhampur	180 KLPD Molasses based ENA plant	2006	ENA	PP
2	Gawlior Distilleries Ltd, Gawlior	130 KLPD Dual feed Grain + Molasses Based Distillery Plant	2007	ENA	PP
3	Dhampur Sugar Mills Ltd, Asmoli	105 KLPD Molasses Based Distillery Plant	2008	ENA	PP
4	Uttam Sugars Ltd, Bijnor	75 KLPD Molasses Based Distillery Plant	2008	ENA	PP
5	Kisan Sahakari Chini Mills Ltd, Kaymganj	20 KLPD MSDH Plant	2016	ETHANOL	PP



## COMPLETED PROJECTS:

PUNJAB AND BIHAR					
1	HPCL Lauria, Bihar	60 KLPD Cane Juice to Ethanol Distillery Plant with ZLD System	2012	ETHANOL	PP
2	HPCL Saugoli, Bihar	60 KLPD Cane Juice to Ethanol Distillery Plant with ZLD System	2012	ETHANOL	PP
3	Malbros International Ltd., Punjab	54 KLPD Molasses Based Distillery Plant with ZLD	2011	ENA	Turnkey
RAJASTHAN AND GUJRAAT					
1	GNFC Ltd., Bharuch	150TPD Ethyl Acetate Plant	2012	Ethyl Acetate	PP
2	Rajasthan State Ganganagar Sugar Mill Ltd., Rajasthan	30 KLPD Dual feed Grain + Molasses Based Distillery Plant	2015	EQRS	Turnkey

## SUGAR PROJECTS:

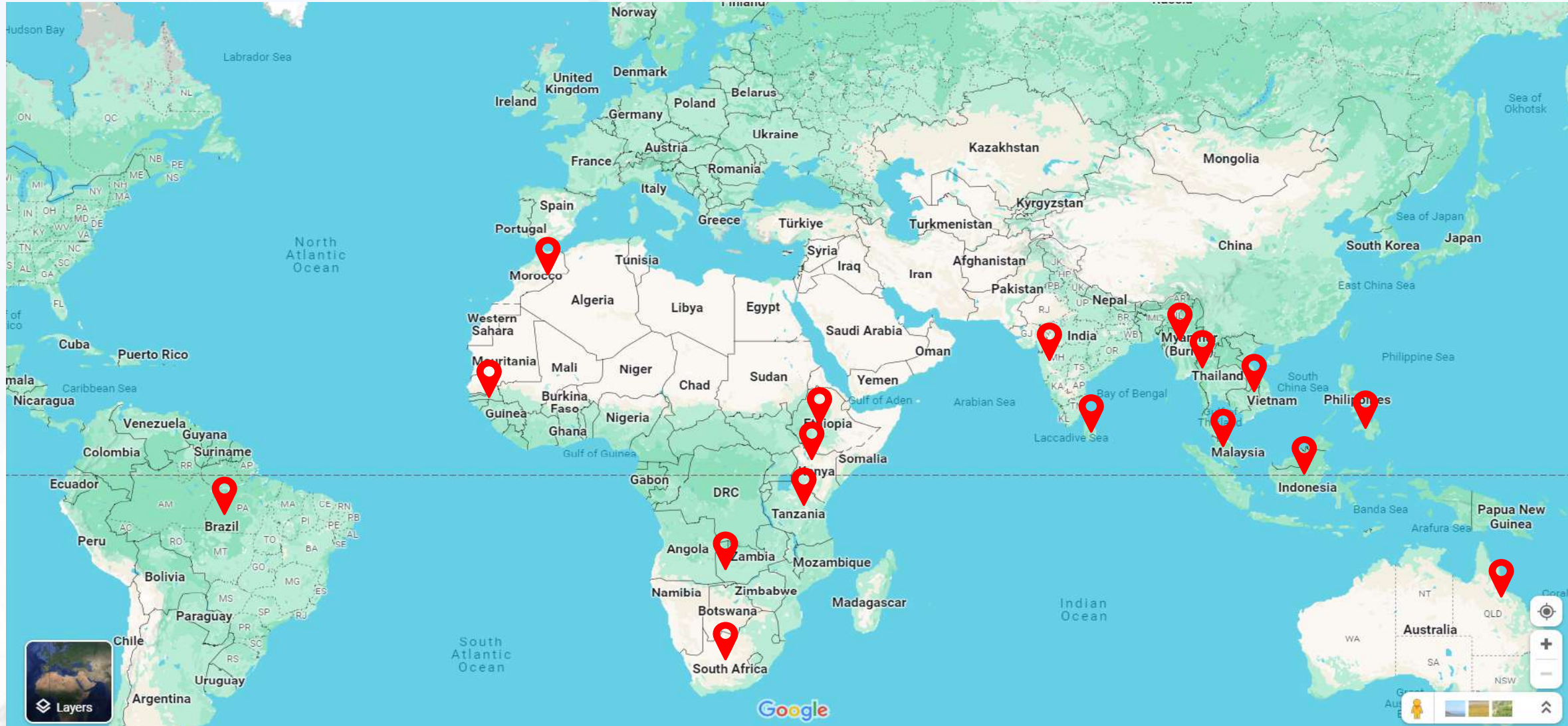
COMPLETED SUGAR PROJECTS				
S. No.	Customer	Scope	Products	Type of Construction
1	MSM Sugar Refinery JOHOR, Malaysia	Consultancy to improve the plant operation to achieve best energy saving and recovery.	Sugar	-
2	PT Jawamanis Refanasi Cilegaon, Indonesia	Supply, Fabrication, Erection & commissioning of Refinery for Capacity expansion to 1200 TPD	Sugar	EPC
3	Shree Renuka Sugars Limited Haldia, West Bengal, India 2500 TPD Sugar Refinery	Sugar Go downs supply, fabrication & erection.	Sugar	EPC
4	Shree Renuka Sugars Limited, Munoli, Karnataka India 10000 TCD Integrated Refinery	Expansion of boiling house to capacity by 3000 TCD.	Sugar	PP
5	Shree Renuka Sugars Limited, Pancha ganga, Maharashtra, India 5000 TCD Sugar Plant	Supply, Erection and Commissioning of boiling house equipment for increasing the plant capacity	Sugar	EPC
6	Gokak Sugars Limited, Kolavi, Karnataka, India 5000 TCD Sugar Plant	Supply, Erection and Commissioning of boiling house equipment for increasing the plant capacity	Sugar	EPC
7	Shree Renuka Sugars Limited, Kandala, Gujrat, India 3800 TPD Sugar Refinery	Supply, Erection and Commissioning of Conditioning Silos for Refined Sugar 4000 Tons Capacity	Sugar	EPC



## SUGAR PROJECTS:

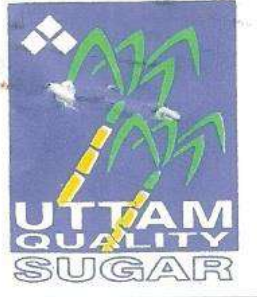
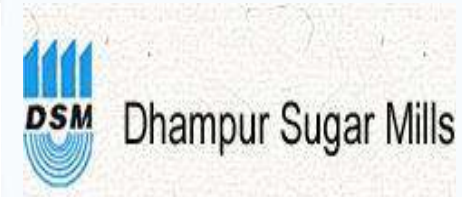
COMPLETED SUGAR PROJECTS					
S. No.	Customer	Scope	Year	Products	Type of Construction
1	Shree Renuka Sugars Limited Haldia, West Bengal, India 2500 TPD Sugar Refinery	Supply, Erection, Fabrication & Commissioning of Project	2013-14	Sugar	PP
2	Shree Renuka Sugars Limited Haldia, West Bengal, India 2500 TPD Sugar Refinery	Refurbishing of entire refinery & Power Plant affected due to cyclone.	2020 - 21	Sugar	PP
3	Shree Renuka Sugars Limited Havalaga, Karnataka, India 9000 TCD Sugar Plant	Complete Plant Expansion to 9000 TCD	2018 - 19	Sugar	Turnkey
4	Shree Renuka Sugars Limited, Kandala, Gujrat, India 3800 TPD Sugar Refinery	Supply, Fabrication, Erection & Commissioning of Plant Equipment's	2018 - 19	Sugar	PP
5	Shree Renuka Sugars Limited, Munoli, Karnataka India 10000 TCD Sugar Refinery	Supply, Fabrication, Erection & Commissioning of Sugar Plant Equipment for expansion and increase in Refinery capacity from 500 TPD to 1000 TPD. Expansion of power plant.	2018 - 19	Sugar	Turnkey

# KBK FOOTPRINTS





# OUR PETRONAGES



Baramati Agro Limited  
बारामती अॅग्रो लिमिटेड



## CONTACT US



**Gat No.540, At Post- Kasar Amboli,  
Urawade Road, Pirangut, Tal - Mulshi,  
Dist. - Pune - 412 111 Maharashtra, India**

Tel No. Phone: +9195611 55133, 70286 08980.

Email: [himanshu.gupta@kbk-chem.com](mailto:himanshu.gupta@kbk-chem.com) /  
[r.ramesh@renukasugars.com](mailto:r.ramesh@renukasugars.com) ;

URL: [www.kbk-chem.com](http://www.kbk-chem.com)