Ethanol capacities, supplies and targets: October 2020

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Sugar stocks

Sugar closing stocks are estimated to have averaged at a high of about 12 million tonnes during the past 3 sugar seasons (SS) 2017-18 to 2019-20. Closing stock was at its peak at 14.6 million tonnes during SS 2018-19 and thus the industry started the SS 2019-20 with an-all time high opening stock. Higher y-o-y sugar production during SS 2017-18 (60.1%) and SS 2018-19 (2.1%) and minimum sugar exports in SS 2017-18 resulted in huge carryover stocks in SS 2019-20.

Consequently to reduce sugar glut, the government announced export subsidy of Rs.10.4 per kg to sugar mills for expenses on marketing costs including handling, upgrading and other processing costs, costs of international and internal transport and freight charges in August 2019. The subsidy is applicable for exports of up to 6 million tonnes of sugar limited to Maximum Admissible Export Quantity (MAEQ) allocated to sugar mills for the SS 2019-20.

Recently, this export incentive has been extended till December 2020 for the sugar mills that have partially exported their MAEQ quota of SS 2019-20 till September 2020. So far, contracts of 5.7 million tonnes of sugar have been made and about 5.5 million tonnes of sugar have already been dispatched from sugar mills out of 6 million tonnes export target.

In addition to this, to abate the domestic sugar surplus, the government has been encouraging production of ethanol with an aim of increasing ethanol blend level with petrol to 7.5%-8% by 2020-21, 10% by 2022 and 20% by 2030 through its Ethanol Blended Petrol (EBP) Programme.

Questions raised on India's sugar export subsidies at WTO

The sugar export subsidies announced by the Indian government however have been questioned by various members of the World Trade Organisation (WTO) at the agriculture committee meeting in September 2020. Nevertheless, India mentioned that the subsidy is compliant with WTO's agreement and such export subsidy can be allowed till December 2023.

Considering this, the diversion of sugar towards production of ethanol is gaining importance. To support this, the government has extended soft loans of about Rs. 18,600 crore through banks to 362 projects of 600 crore litre capacity for enhancement and augmentation of ethanol manufacturing capacity as per a notification released by government in August 2020. For this, an interest subvention of around Rs.4,045 crore for 5 years is being borne by the government. Measures involving amount of about Rs.7,000 crore were announced in June 2018 and soft loans worth Rs.7,900 crore -

Rs.10,540 crore were approved by the government in March 2019 for advancement of sugar industry.

To understand domestic ethanol industry better, details on ethanol production capacities and ethanol supplied for attainment of EBP Programme is discussed in the report going ahead.

Ethanol manufacturing capacity and ethanol supply for EBP Programme in India

To reduce sugar glut and to increase diversion of sugar/sugarcane towards ethanol to attain the EBP Programme target and to provide support to the sugar industry that has high sugarcane arrears, the ethanol production capacity in India has almost doubled over a period of 5 years with capacity increasing substantially from Ethanol Supply Year (ESY) December 2017-November 2018 onwards. The capacity has grown at a strong CAGR of 17.8% from 222 crore litres in ESY 2015-16 to 427 crore litres in ESY 2019-20 as shown in table 1.

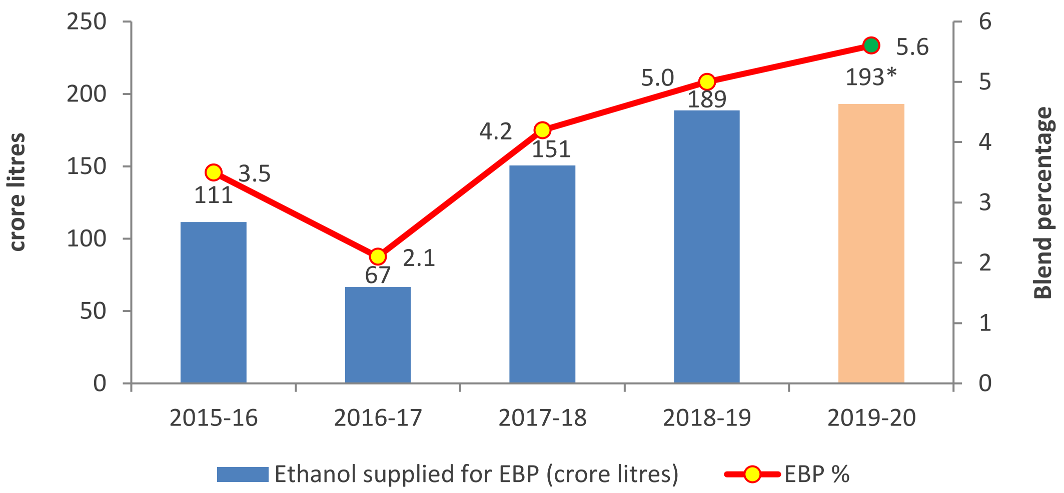
Table 1: Ethanol production capacity in India (crore litres)

ESY	Capacity
2015-16	222
2016-17	228
2017-18	278
2018-19	355
2019-20	427

Source: ISMA

Ethanol supply for EBP Programme for the current ESY 2019-20 is estimated at 193 crore litres (chart 1). This is based on the offers received so far from ethanol producers and the amount of ethanol contracted by Oil Marketing Companies (OMCs) for supply during the year. The OMCs have received 138.6 crore litres of ethanol up to 21 September 2020. 193 crore litres of ethanol supply are expected to result in 5.6% blending with petrol.

Chart 1: Trend in ethanol supplies for EBP Programme for procurement by OMCs

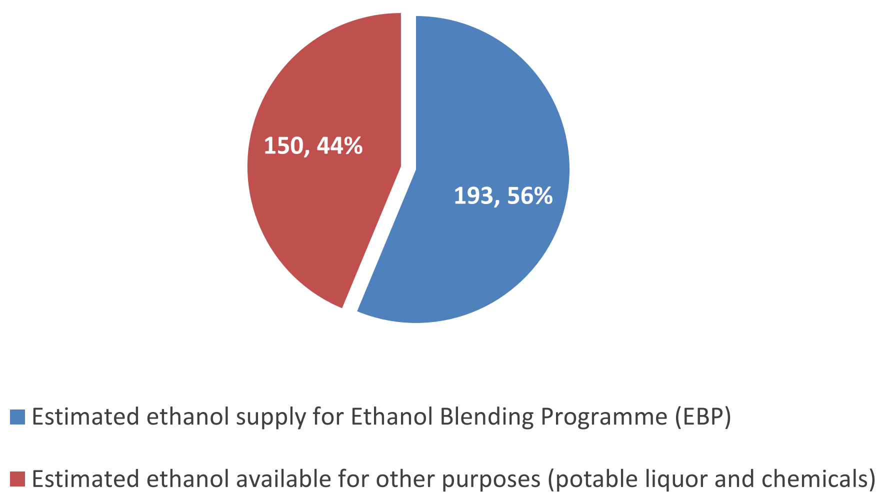


Source: Webinar organised by Ministry of Petroleum & Natural Gas
Note: * Ethanol supply numbers for ESY 2019-20 are estimates

It can be seen from the above chart that ethanol supplies for EBP Programme have increased in each of the ethanol supply years 2015-16 to 2018-19 except for 2016-17 where it declined by 40.3% y-o-y to 67 crore litres. Similarly, the blending percentage of ethanol with petrol has increased during 2015-16 to 2018-19 except for 2016-17. The EBP Programme has aims to increase ethanol blend level with petrol to 7.5%-8% by 2020-21, 10% by 2022 and 20% by 2030.

It is to be noted that while ethanol production capacity for ESY 2019-20 stands at 427 crore litres, ethanol supply for EBP Programme for the year is estimated at 193 crore litres based on the offers received so far from ethanol producers and the amount of ethanol contracted by Oil Marketing Companies (OMCs) for supply during the year. This is because produced ethanol is also used for other purposes that include potable liquor and chemicals. The quantity of ethanol estimated for this usage is around 150 crore litres.

Chart 2: Estimated usage of ethanol in India during ESY 2019-20 (crore litres)



Source: PIB, Webinar organised by Ministry of Petroleum & Natural Gas and CARE Ratings

Ethanol supplied for EBP Programme is produced by sugar mills and grain-based distilleries with majority of it coming from sugar mills. Consequently, the government encourages sugar industry to actively participate in ethanol supply as it will not only help the government attain EBP Programme target but also reduce sugar surplus in India. Moreover, sugar exports from India are likely to remain open for constant scrutiny by WTO members in the coming years (particularly after 2023).

Before we move ahead to discuss the capex/capacity plans for ethanol going forward, details on state-wise ethanol production capacity, ethanol supply Letter of Intention (LOIs), raw material-wise ethanol contracts and supplies for ESY 2019-20 and state-wise ethanol supply target fixed by the government of India for EBP Programme for ESY 2020-21 are provided in the section below.

State-wise ethanol capacities, supplies and targets and raw material-wise ethanol supplies

As per the Indian Sugar Mills Association (ISMA), the total Letter of Intent (LOIs) were issued for 183 crore litres of ethanol supplies during the ESY 2019-20 at all-India level with major contribution from Uttar Pradesh of 106 crore litres of ethanol supply followed by Maharashtra and Karnataka with ethanol supplies of 28 crore litres and 21 crore litres, respectively. Last year, the LOIs were issued for 85 crore litres of ethanol supply from Maharashtra.

It can be seen from table 2 below that Uttar Pradesh (150 crore litres), Maharashtra (128 crore litres) and Karnataka (78 crore litres) are the top 3 states accounting for about 83% of the total ethanol production capacity of 427 crore litres during ESY 2019-20 with other states contributing for only around 17% of the total ethanol output capacity in India.

For the ESY 2020-21, the government of India has fixed state-wise targets of ethanol production which advises each state’s sugar mills/distilleries to utilise at least 85% of their existing installed capacities to produce ethanol. Resultantly, the target fixed for ethanol supplies at all-India level is around 363 crore litres which is 85% utilisation of the existing capacities of 427 crore litres.

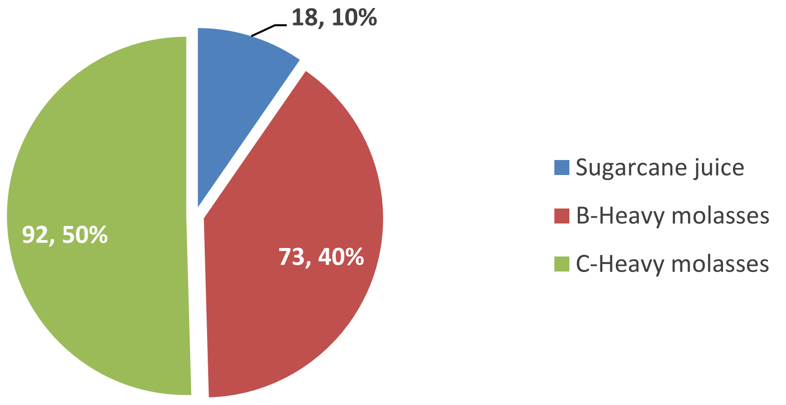
Table 2: State-wise ethanol supply, capacity and target (crore litres per year)

(crore litres per year)	State-wise ethanol supply LOIs (ESY 2019-20)	State-wise capacity (ESY 2019-20)	State-wise target by GOI (ESY 2020-21)
Uttar Pradesh	106	150	127
Maharashtra	28	128	108
Karnataka	21	78	67
Tamil Nadu	1	20	17
Bihar	9	12	10
Gujarat	4	11	10
Andhra Pradesh	2	8	7
Punjab	5	5	4
Telangana	1	5	4
Uttarakhand	4	4	3
Madhya Pradesh	2	3	3
Haryana	0	2	2
Total	**183**	**427**	**363**

Source: ISMA

The raw material base for ethanol production has expanded over the past few years with the government allowing procurement of ethanol from B heavy molasses and sugarcane juice in June 2018 for the upcoming ethanol supply years. Also, higher ethanol prices derived from sugarcane juice (Rs.59.5 per litre) and B heavy molasses (Rs.54.3 per litre) compared to C heavy molasses (Rs.43.8 per litre) have supported the diversion in raw material base for ethanol production.

Chart 3: Raw material-wise ethanol supply contracts for ESY 2019-20 (crore litres)



Source: ISMA

Subsequently, ethanol supplies from C-heavy molasses, B-heavy molasses and sugarcane juice are estimated to stand at 92 crore litres (50% of total ethanol supply contracts), 73 crore litres (40%) and 18 crore litres (10%), respectively, during ESY 2019-20.

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Ethanol – Way forward

With surplus sugar in India and sugar exports from India expected to remain open for constant scrutiny by WTO members (particularly after 2023), ISMA suggests that India needs additional molasses/cane juice based ethanol production capacity of 400-450 crore litres (at all India level) for sugar export reduction by 2 million tonnes every year till 2023, and increased diversion of equivalent sugar into ethanol every year over next 3 years to reduce 25% of all-India sugar surplus. Considering this, let us have a look at the progress of ethanol projects approved under interest subvention scheme announced by the government.

As per ISMA, 361 projects have received principle approval by Department of Food & Public Distribution (DFPD) and these projects are expected to add 13,464 kilo litres of ethanol per day (KL/day) which implies addition of 444 crore litres of ethanol per year. It is to be noted that capacity addition details of all projects is unknown.

Table 3: State-wise project status under interest subvention scheme

	In principle approval by DFPD		Sanctioned and disbursed	
	No. of projects	Addl. Capacity (KL/day)	No. of projects	Addl. Capacity (KL/day)
Uttar Pradesh	60	4,300	20	890
Maharashtra	182	7,280	19	775
Karnataka	64	---	5	---
Tamil Nadu	3	154	---	---
Bihar	6	330	3	170
Gujarat	7	---	---	---
Andhra Pradesh	7	595	1	0
Punjab	8	465	---	---
Telangana	2	75	1	30
Uttarakhand	10	---	3	---
Madhya Pradesh	7	---	1	---
Haryana	5	265	---	---
Total	**361**	**13,464**	**53**	**1,865**
Capacity (crore litres per year)		**444***		**62***

Source: ISMA

Note: --- indicates data is unknown and * is estimate by CARE Ratings

The count of 361 projects includes all projects for which scheme is sanctioned and disbursed, scheme is sanctioned but not disbursed, companies approached to banks but details are pending, companies which have not approached to banks and projects for which information is not received by the government. Also, the approvals are subject to cancellation if significant progress is not made and no information is given by companies. Therefore, details on number of projects for which scheme is sanctioned and disbursed is considered to understand progress of these projects. It can be seen from the table that schemes for 53 projects and 1,865 kilo litres of ethanol per day (62 crore litres of ethanol per year) have been sanctioned and disbursed. It is to be noted that details for all projects under sanctioned and disbursed section is unknown.

According to August 2020 government release, soft loans of about Rs. 18,600 crores are being extended through banks to 362 projects of 600 crore litre capacity for enhancement and augmentation of ethanol production capacity, for which an interest subvention of about Rs.4,045 crore for 5 years is being borne by the government. So far loans have been sanctioned to 64 project proponents and completion of these projects would increase ethanol distillation capacity by 165 crore litres in another 2 years. Thus the ethanol distillation capacity in the country would increase from about 427 crore litres per year to about 590 crore litres per year by 2022.

To achieve target of additional 400-450 crore litres ethanol production capacity till 2023, India will need to increase the current pace of ethanol capacity addition by 2.8-3.5 times in the year 2023.

Concluding remarks

- The raw material base for ethanol production has diversified with ethanol supplies from C-heavy molasses now estimated to account for about 50% (92 crore litres) of the total ethanol supply contracts, B-heavy molasses and sugarcane juice expected to contribute about 73 crore litres (40%) and 18 crore litres (10%), respectively, of the total ethanol supply contracts during ESY 2019-20.

- While the target to produce about 363 crore litres of ethanol in next ESY 2020-21 of the existing 427 crore litres capacity looks achievable, sugar mills and distilleries in each state will strictly need to adhere to the capacity utilisation levels of 85%.

- To achieve the target of additional 400-450 crore litres of ethanol production capacity till 2023, India will need to increase the current pace of ethanol capacity addition by 2.8-3.5 times in the year 2023.

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