



Challenges of Grain-based Dedicated Ethanol Plants (DEPs)

Presented to

Hon'ble Home Minister, Shri Amit Shah ji

Grain Ethanol Manufacturer's Association (GEMA)

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SUCCESS OF GOI'S BIOFUEL POLICY TO REACH E20 BLENDING



ESY 23-24 FEED STOCK	Supply upto 26.05.24	Supply upto 31.08.24	Received in 3 months
DFG	66.25	94.8	28.55
SFG	0.11	0.11	0
MAIZE	95.6	200.6	105
Total Grain Based	161.96	295.51	133.55
<i>Crore liter / Per month</i>	<i>23.14</i>	<i>29.55</i>	<i>44.52</i>
SCJ	55.98	58.7	2.72
BHM	81.81	121.6	39.79
CHM	27.58	50.8	23.22
Total SC Based	165.37	231.1	65.73
<i>Crore liter / Per month</i>	<i>23.62</i>	<i>23.11</i>	<i>21.91</i>
Total Grain + Sugar	327	527	199
<i>Crore liter / Per month</i>	<i>46.76</i>	<i>52.66</i>	<i>66.43</i>

- Grain Ethanol supplied in 10 months of ESY 23-24: **295.51 Cr Ltr.**
- Farmers are receiving MSP of maize.
- 60% of total supply is from grain.
- 200 Cr Ltr came from maize.
- Grain ethanol manufacturers took Financial Risk: Rs.40,000 crore
- Grain-based DEPs capacity nearing 600 Cr Ltr for EBPP in ESY 24-25.

WHY OMC'S ARE RECEIVING ETHANOL AT LOSSES TO INDUSTRY?



FEASIBILITY ANALYSIS OF ETHANOL PRODUCTION				
	Particular	Option 1 Maize	Option 2 DFG	Option 3 Shut Down
Notes:				
1(a)	DDGS Recovery Ratio from Grain	26.00%	15.00%	0
1(b)	DDGS Market Selling Price	11.00	14.50	0
2(a)	Ethanol Recovery Per BL	38.00%	45.00%	0
2(b)	Cost Per KG of Grain	27.00	28.00	0
A	OMC Procurement Price	71.86	64.00	0
B	DDGS contribution	7.53	4.83	0
	Revenue Per BL	79.39	68.83	0
C	Cost of Grains Consumed	71.05	62.22	0
D	Cost of Fuel (Husk/ Parali/Coal etc.)	5.80	4.80	0
E	Chemicals	2.20	2.00	0
F	Labour & Salaries	2.50	2.10	2.1
G	Other Cost	0.50	0.50	0.5
H	Transportation Difference	0.50	0.50	0
I	Loading Loss of Ethanol	0.36	0.32	0
J	Finance Cost incl. Int & EMI	5.75	4.75	4.75
H	Penalty for Non Supply	0.00	0.00	2.16
	Cost Per BL	88.66	77.19	9.51
	LOSS PER BL BEFORE DEPRECIATION & MARGIN	-9.28	-8.36	-9.51

- In all situations; plants are incurring losses
- Losses in keeping the plant shut are higher, than in supplying ethanol at losses.
- If plant is kept non-operational – Cost of manpower, establishment, finance & penalties of non-supply are FIXED.
- Plant capacity reduces by 20%, in maize as compared to DFG – This leads to higher fixed expense ratio in Maize.
- Total variable cost are higher in Maize as compared to DFG.
- Due to limited availability of DFG; industry has opted for maize, even though the losses are high – only to keep the plant running.

FEEDSTOCK SITUATION IN INDIA



- Grain-based DEPs will need **26 million MT (MMT)** of grain to produce **1000 Cr Ltr of fuel ethanol**
- In 2023-24 DEPs already procured 5.5 MMT of maize to produce 200 Cr liters of fuel ethanol in 10 months; balance grain ethanol produced from DFG
- **Indian farmers benefited substantially** with Maize market price trading much higher than the MSP in the past 12 months
- **Total Maize production** in India as of 2024 is **~ 37.6 MMT**
- **> 95% of maize** is booked with existing industry - feed (63%), food (23%), starch industries (12%), seed, breweries and miscellaneous uses (2%)
- **Total Rice production** in India as of 2024 **~ 138 MMT.**
- **17 MMT rice reported surplus by FCI as on 1st Sep, 2024;** after meeting all requirement of PDS, Free Distribution & Emergency stocks.

- **Input or Raw Material prices are not fixed** (which constitute ~ 76% of total cost of production)
- Fuel Ethanol is under **Administered Pricing Mechanism (APM)**, where ethanol (output) price is fixed by the OMCs and GoI
- Continuous **mis-match between Input and Output** is leading to **under recovery**.
- The **Industry in financial distress** and is unsustainable.

REQUEST TO Hon'ble HOME MINISTER



1. **Pricing formula** must be based on **total Input/raw material cost** including **MSP + Storage + Mandi Tax + Transport.**
2. **Supply Surplus Rice (SFG) from FCI** for the next 3-4 years till Maize production in India is increased substantially to meet the total demand from all industries.
3. There should be **uniform procurement price** of ethanol manufactured from all types of grain.
4. **Allocate equal or higher priority to Grain-Ethanol** over ethanol from Molasses/Sugar Syrup as it is more environmentally friendly.
5. **Roadmap for EBPP beyond 2025**, should be conceived to increase the ethanol consumption through flexi-fuel vehicles.

COST BREAK-UP TO PRODUCE MAIZE ETHANOL



Maize Ethanol Costing Rs./Ltr - Oct 2024



* COST OF MAIZE / KG	
*MSP 2024 Kharif	22.25
Mandi Tax @1.2%	0.27
Packing Cost	0.85
Mandi Handling	
Aarthi Commission @1%	
EX-Mandi /Pacs Cost of Maize/kg	23.37
Godown/Storage Cost	0.5
Interest on Storage @10% for 3M	0.8
Freight & Cartage	1.5
Maize cost to Ethanol Plant	26.17

ASSUMPTIONS:	
*Maize cost at plant - Rs./kg	26.17
Ethanol Yield on maize- Ltr/kg	0.380
DDGS rate - Rs./kg	10.00
DDGS Yield - kg/kg maize	0.26
Coal rate - Rs./kg	6.5
Coal to Steam ratio	4.00
Cost of steam - Rs./kg	1.63
Required Steam - KG/Ltr	4.50

COST OF ETHANOL / Litre	
Grain Cost	69
Steam	7.31
External Power	0.50
Chemicals consumed	1.90
Stores, R&M	1.95
Water @ 26.4/ m3	0.26
Salary & Admin	2.50
Freight difference	1.20
Material Cost of production	84.48
(-) DDGS	6.84
(-) CO2	NA
Operating Cost of Ethanol	77.64
(+) Interest on Investment	2.00
(+) Depreciation	2.50
Final Cost of Ethanol / Ltr	82.14
OMC Purchase price Jan'24	71.86
Delta - Profit - Loss / Ltr	(10.28)

- There is no parity in feedstock prices vs. ethanol procurement price.
- Very heavy loss at average procurement price of Maize Ethanol
- There is a revision in MSP of Maize
- Consequently there should be revision in Maize ethanol procurement price.
- DDGS is selling at low prices due to high aflatoxin levels in maize.

COST BREAK-UP TO PRODUCE DFG/ BROKEN RICE ETHANOL



DFG (Broken Rice) Ethanol Costing Rs./Ltr - Oct 2024



ASSUMPTIONS:	
DFG Rice - Rs./kg	28
Ethanol Yield on Rice - Liter/ kg	0.450
DDGS rate - Rs./kg	15.00
DDGS Yield - kg/kg rice	0.16
Coal rate - Rs./kg	6.5
Coal to Steam ratio	4
Cost of steam - Rs./kg	1.63
Required Steam - KG/Ltr	4.00

COSTING - Rs./Liter	Ethanol
Grain Cost	62
Steam	6.50
External Power	0.50
Chemicals consumed	1.70
Stores, R&M	1.70
Water @ 26.4/ m3	0.19
Salary & Admin	2.00
Freight difference on supplies	1.20
Material Cost of production	76.01
(-) DDGS	5.33
(-) CO2	NA
Operating Cost of Ethanol	70.68
(+) Interest on Investment	1.50
(+) Depreciation	2.00
Final Cost of Ethanol / Liter	74.18
OMC Purchase price 2023-24	64.00
Delta - Profit - Loss / Ltre	(10.18)

- Broken/ Reject rice has become very expensive around the year.
- Very heavy loss at average procurement price of DFG Ethanol.
- Availability of DFG is short due to the fact that entire paddy procured in 2023-24 has not been milled so far.
- DDGS is selling at a very low rate, due to over-supply in short period.

REPRESENTATION ON CHALLENGES OF GRAIN ETHANOL INDUSTRY



Thank You
for your support

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