6

STANDING COMMITTEE ON
PETROLEUM & NATURAL GAS
(2020-21)

SEVENTEENTH LOK SABHA

MINISTRY OF PETROLEUM & NATURAL GAS

REVIEW OF PROGRESS IN PRODUCTION OF NON-CONVENTIONAL FUELS
WITH SPECIFIC REFERENCE TO BIO-FUELS

SIXTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

March, 2021 / Phalguna, 1942 (Saka)

CP&NG NO.

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Presented to Lok Sabha on 10.03.2021

Laid in Rajya Sabha on 10.03.2021

LOK SABHA SECRETARIAT
NEW DELHI

March, 2021 / Phalguna, 1942 (Saka)

(iii)

COMPOSITION OF THE STANDING COMMITTEE ON PETROLEUM & NATURAL GAS (2020-21)

Sl. No.	Names of Members

LOK SABHA

Shri Ramesh Bidhuri - Chairperson

2 Shri Dibyendu Adhikari
3 Smt. Chinta Anuradha
4 Dr. Ramesh Chand Bind
5 Shri Pradyut Bordoloi
6 Shri Girish Chandra
7 Shri Topon Kumar Gogoi
8 Shri Naranbhai Kachhadiya
9 Shri Santosh Kumar
10 Shri Rodmal Nagar
11 Shri Unmesh Bhaiyyasaheb Patil
12 Dr. Kalanidhi Veeraswamy
13 Shri M.K. Raghavan
14 Shri Chandra Sekhar Sahu
15 Shri Dilip Saikia
16 Dr. Bharatiben Dhirubhai Shyal
17 Shri Janardan Singh Sigriwal
18 Shri Lallu Singh
19 Shri Vinod Kumar Sonkar
20 Shri Ajay Tamta
21 Shri Rajan Baburao Vichare

RAJYA SABHA

22 Shri Ripun Bora
23 Shri Narain Dass Gupta
24 Smt. Kanta Kardam
25 Shri Kanakamedala Ravindra Kumar
26 Shri Om Prakash Mathur
27 Dr. Bhagwat Karad
28 Vacant[1]
29 Shri K.K. Ragesh
30 Shri A. Vijayakumar
31 Ch. Sukhram Singh Yadav

SECRETARIAT

1	Smt. Abha Singh Yaduvanshi	Additional Secretary
2	Shri H. Ram Prakash	Director
3	Shri Vinay Pradeep Barwa	Deputy Secretary

[1] Since Shri Ahmed Patel passed away on 25.11.2020.

(iv)

INTRODUCTION

I, the Chairperson, Standing Committee on Petroleum & Natural Gas having been authorised by the Committee to submit the Report on their behalf present this sixth report on the subject "Review of Progress in Production of Non-Conventional Fuels with Specific Reference to Bio-Fuels".

2. The Committee took briefing and evidence of the representatives of the Ministry of Petroleum & Natural Gas at their sittings held on 22.07.2020 & 11.09.2020 and the Department of Financial Services/SBI/PNB on 11.09.2020 respectively. The Committee also heard the views of the Department of Agriculture, Cooperation & Farmers Welfare, the Department of Food and Public Distribution and the Ministry of New & Renewable Energy on 06.11.2020.

3. The Report was considered and adopted by the Standing Committee on Petroleum and Natural Gas on 08.03.2021.

4. The Committee wish to express their thanks to the representatives of the Ministry of Petroleum and Natural Gas/PSUs, the Department of Financial Services/SBI/PNB, the Department of Agriculture, Cooperation & Farmers Welfare, the Department of Food and Public Distribution and the Ministry of New & Renewable Energy for placing their views before them and furnishing the information desired in connection with examination of the subject.

5. The Committee also place on record their appreciation for the valuable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

New Delhi;
9 March, 2021
18 Phalguna, 1942 (Saka)

RAMESH BIDHURI,
Chairperson,
Standing Committee on
Petroleum & Natural Gas.

REPORT

PART - I

I. INTRODUCTION

Government has emphasized on achieving energy security of the country with a target of reducing import dependence i.e. usage of fossil fuels. The growing concern about the import dependence for fuel requirement in tandem with environmental pollution issues have driven the need for alternative fuels that have superior environment benefits and are economically competitive with fossil fuel. This envisages a strategic role for bio fuels in the Indian Energy basket. These resources include agriculture and forest residue, Municipal Solid Waste (MSW), cow dung etc. which can be used to convert into biofuels. The Government is committed to utilize these with the aim to reduce our dependence on import of crude oil, achieve foreign exchange savings, provide better remuneration for the farmers with a view to double their income, address growing environment issues owing to use of fossil fuels and burning of biomass/ waste, address challenges of waste management/agri-residues management in line with Swachh Bharat Abhiyan and promote “Make in India” campaign.

(a) Objectives of new National Policy of Biofuels, 2018

2. Government has notified the National Policy on Biofuels-2018 on 08.06.18 to encourage use of Bio-fuels. The Policy aims to increase usage of biofuels in the energy and transportation sectors, thereby increasingly substitute fossil fuels while contributing to National Energy Security, Climate Change mitigation, apart from creating new employment opportunities in a sustainable way. Currently the ethanol blending percentage in petrol is around 5.0% and biodiesel blending percentage in diesel is less than 0.1%. An indicative target of 20% blending of ethanol in petrol and 5% blending of biodiesel in diesel is proposed by 2030.

This is to be achieved by:-

(a) reinforcing ongoing ethanol/biodiesel supplies through increasing domestic production

(b) setting up Second Generation (2G) bio refineries

(c) development of new feedstock for biofuels
(d) development of new technologies for conversion to biofuels.
(e) creating suitable environment for biofuels and its integration with the main fuels.

3. As per Statistical Review of World Energy, 2020 by BP (69th edition), the share of bio-fuels (which Includes bio gasoline (ethanol) and biodiesel in the total primary energy consumption the country is 0.1%. (Primary energy consumption of 4.7 petajoules from biofuels in 2019 against total primary energy consumption was 34060 petajoules). The share of Biofuels is around 2% of the total primary automative fuel consumption of the country.

(b) <u>Sources of Biofuels</u>

4. The various sources of biofuels that are being developed are lignocellulosic biomass, non-food crops, industrial waste & residue streams, MSW, plastics & industrial waste, food waste etc.

In National Policy of Biofuels, 2018 many new additional raw materials for 1G ethanol production have been included like Sugarcane Juice, Sugar containing materials like Sugar Beet, Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes which are going to increase availability of 1G ethanol. Used Cooking Oil (UCO) is being promoted for Biodiesel production. Govt has also announced Sustainable Alternative Towards Affordable Transportation (SATAT) scheme for marketing CBG produced from waste".

5. When the Committee enquired about source of biofuels has greater potential in large scale production of biofuels, the Ministry replied as under:-

> "Agricultural waste/residue, sugarcane press mud, municipal solid waste, cattle dung, sewage treatment plant waste, used cooking oil and diversion of surplus sugarcane and food grains have a greater potential to be used in large scale production of alternative fuels".

6. The Committee noted that the policy on Biofuel involves coordination with many Departments and Ministries and their agencies. Asked about the role of other MInistries,

in connection with production of bio-fuels, the following replies were recevied from some of the Ministries:

"The Ministry of Agriculture in its written reply stated as under:

Ministry of Agriculture & Farmers Welfare (M/o A&FW) is a part of Inter Ministerial coordination. Government has notified the new National Policy on Biofuels-2018. As per clause 9.2 of the Policy a "National Biofuel Coordination Committee" (NBCC) has been set up under chairmanship of Hon'ble Minister of Petroleum & Natural Gas (M/o P&NG) to meet periodically to provide overall coordination, implementation & monitoring of biofuel programmes. Secretary (AC&FW) is member of NBCC. As per para 9.3 of the Policy a "Working Group" has been set up under chairmanship of Joint Secretary (Refinery), M/o P&NG to monitor the implementation of biofuel programmes. Representative from DAC&FW is member of Working Group.

National Policy on Biofuels-2018 expands the scope of raw material for ethanol production by allowing use of Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum, Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes, unfit for human consumption. The Policy also allows use of surplus food grains for production of ethanol for blending with petrol with the approval of NBCC.

Apart from C-heavy molasses, GoI allowed production of ethanol from B-heavy molasses & sugarcane juice route from the Ethanol Supply Year (ESY) 2018-19, whereas conversion of sugar & sugar syrup to ethanol was allowed from ESY 2019-20. DAC&FW conveyed no-objection to DFPD/ MoPNG to convert rice to ethanol for the surplus stock available with FCI. DAC&FW requested MoPNG to amend the National Policy on Biofuels (NPB)-2018 by adding rice in addition to broken rice in para 5.2 and consider conversion of rice to ethanol by removing the condition of surplus in case of foodgrains in view of excess stock of rice available in central pool. DAC&FW informed M/o PNG & DFPD to consider conversion of maize to ethanol production in view of severe stress in price of maize & favourable crop production scenario vide letter dated 27.10.2020.

The Department of Food and Public Distribution (DFPD) in its reply furnished the following information:

An Inter Ministerial Committee comprising Secretaries of Department of Food and Public Distribution; Ministry of Petroleum & Natural Gas; Department of Agriculture, Cooperation & Farmers Welfare; Department of Animal Husbandry and Dairying; Ministry of Environment, Forest and Climate Change; and Department of Financial Services has been constituted on 3rd Nov. 2020 to resolve issues relating to production and supply of ethanol. Further, in a meeting held on 28.11.2020 under the chairmanship of Cabinet Secretary on the subject, "Manufacturing, Sales, Utilization & Blending of Ethanol", it was inter-alia decided to constitute an expert group to finalize a road map to achieve year-wise ethanol blending targets for next ten years and also the various policy implications of such a plan. Accordingly, an

Inter-Ministerial Committee, under the chairmanship of Additional Secretary, NITI Aayog was constituted by MoPNG wherein Joint Secretary, Sugar from Department of Food & Public Distribution is also a member. Consultation is being done and is under process. The Committee is exploring the ways to resolve the constraints through a long term road map to achieve the production level of Ethanol required to meet the targeted blending percentage within the stipulated time period.

The Ministry of New and Renewable Energy "MNRE furnished the following reply:

The Ministry of New and Renewable Energy is a part of Biofuels Working Group under Integrated Monitoring and Advisory Council (IMAC) in connection with reduction of oil import dependency. The Ministry also participates in the meeting of Working Group on Biofuels (constituted under the National Policy of Biofuels-2018)."

7. Elaborating on the benefits of biofuel policy during the oral evidence, the representative of the MoPNG made the following submission:

"...बायो फ्यूल्स का जो विषय है, यह बहुत ही महत्वपूर्ण विषय है। जैसा कि सभापति महोदय ने भी कहा है कि किसानों से लेकर प्रोडक्शन तक बहुत से लोग इससे जुड़े हुए हैं। इसमें रोजगार सृजन और ऊर्जा सुरक्षा जैसे मुद्दे आते हैं। जहां यह विषय बहुत ही महत्वपूर्ण है, वहां मैं यह भी स्पष्ट करना चाहूंगा कि इस सेक्टर को प्रमोट करने के लिए इसमें तीन-चार मंत्रालय शामिल हैं। हमारा मंत्रालय लीड मंत्रालय है। लेकिन इसमें नवीन और नवीकरणीय ऊर्जा मंत्रालय भी शामिल है। वे सब्सिडी इत्यादि देते हैं। उनको सपोर्ट करने के लिए स्कीम्स वगैरह भी हैं। इसमें कृषि मंत्रालय भी शामिल है, क्योंकि इसमें फील्ड से जो रॉ मैटेरियल इकट्ठा होना है, वह उनके मंत्रालय से संबंधित है। इसमें पशुपालन विभाग भी शामिल है। इसके साथ ही साथ इसमें बैंक और खाद्य मंत्रालय भी शामिल हैं। वहां शुगर, एथेनॉल और सरप्लस फूड ग्रेन्स वगैरह डील किए जाते हैं। इसमें फूड कॉर्पोरेशन ऑफ इंडिया भी शामिल है। इसके लिए विभिन्न स्तरों पर कमेटियां बनी हुई हैं, जो इस पर कार्य कर रही हैं। इसमें मुख्य तौर से जो बायो फ्यूल्स है, उसमें एथेनॉल है। इसके बाद बायो डीजल है। इसके अतिरिक्त कम्प्रेस्ड बायो गैस और बायो एटीएफ है। इसमें लगभग ये चार मेन फ्यूल्स हैं, जिन पर हम चर्चा कर रहे हैं।

.....हम अभी एथेनॉल में 5 प्रतिशत तक पहुंचे हैं। हमारा टारगेट 20 प्रतिशत का है। एथेनॉल के जो दो मुख्य स्रोत हैं, जिससे हमें एथेनॉल मिलता है, एक तो वह शुगर बेस्ड है और दूसरा फूड ग्रेन्स बेस्ड है। अभी हम ज्यादातर शुगर बेस्ड पर निर्भर हैं। सभापति महोदय, आपने यह भी बताया है कि ब्राजील में शुगर जूस से किया जाता है, लेकिन हम शायद अभी वह नहीं कर पा रहे हैं। हम ज्यादातर मोलेसिज़ पर निर्भर हैं। माननीय समिति की सिफारिश के अनुसार हमने शुगर जूस के लिए भी अलाउ कर दिया है और उसका रेट भी डिक्लेयर कर दिया है। लेकिन उसमें प्रोक्योरमेंट कम है, क्योंकि जो शुगर मिल्स हैं, वह उन्हीं पर निर्भर है। अगर उनको शुगर बनानी है, तो वे शुगर बनाती हैं। यदि उनको लगता है कि एथेनॉल बनाना है, तो वे एथेनॉल बनाती हैं। इसके लिए उनको बाध्य नहीं किया जा सकता है। अभी जो वर्तमान स्थिति है, हम पिछले साल 5 प्रतिशत पर थे और हम इस वर्ष भी लगभग 5 प्रतिशत पर ही रहेंगे"।

8. Explaining the Progress and the planned targets for future for ethanol blending programme, the representative of the Ministry made the following submission during oral evidence:

> "…इथेनॉल का हमारा टारगेट 20 प्रतिशत है और अभी हम 5 प्रतिशत से कुछ अधिक तक पहुंचे हैं। अगले वर्ष में पूरी आशा है कि हमें इसमें एक अच्छी जम्प मिलेगी, क्योंकि अगले वर्ष तक, ये जो योजनाएं बनाई गई हैं, जिनमें शुगर बेस्ड इंडस्ट्री को आगे बढ़कर आना है और फूडग्रेन्स की भी कुछ डिस्टिलरीज आगे आएंगी। इस बारे में फूड मिनिस्ट्री से हमारी रेगुलर मीटिंग्स हो रही हैं और आज भी इसके ऊपर हमारी उनसे चर्चा होनी है। फूड मिनिस्ट्री का भी यही कहना है कि अगले वर्ष में शुगरकेन की बम्पर क्रॉप होने की आशा है, इसलिए हमें पूरी आशा है कि अगले वर्ष हमें इससे अधिक मात्रा मिल पाएगी। हमारे मंत्रालय की तरफ से हम प्रोक्योरमेंट करने को तैयार हैं, लेकिन प्रोडक्शन में हमारा इतना रोल नहीं रहता है, प्रोडक्शन में ज्यादा रोल अन्य मंत्रालयों का रहता है। शुगर बेस्ड इथेनॉल में अधिकतर रोल फूड मिनिस्ट्री का रहता है"।

9. A National Biofuel Coordination Committee (NBCC) headed by the Minister, Petroleum and Natural Gas and representatives of concerned Ministries are the Members of this Committee. The details of the notification are at APPENDIX-I.

The Committee note that the major component of Bio-Fuels are the following: 1) Ethanol Blended Petrol, 2) Bio-Diesel, 3) Compressed Bio Gas, 4) Bio -ATF. The policy intervention alongwith progress acheived and the steps taken to achieve the objectives set out in the National Policy of Biofuels are discussed in the following paragraphs:

II. ETHANOL BLENDED PETROL

(a) Ethanol Blended Petrol (EBP) Programme

10. Government has been implementing Ethanol Blended Petrol (EBP) Programme throughout the country except Union Territories of Andaman Nicobar and Lakshadweep islands, wherein OMCs sell petrol blended with 10% ethanol.

11. To increase indigenous production of ethanol the Government since 2014 took multiple interventions like:

- Re-introduction of administered price mechanism;
- Opening of alternate route for ethanol production;

- Amendment to Industries (Development & Regulation) Act, 1951 which legislates exclusive control of denatured ethanol by the Central Government for smooth movement of ethanol across the country;
- Reduction in Goods & Service Tax (GST) on ethanol meant for EBP Programme from 18% to 5%;
- Differential ethanol price based on raw material utilized for ethanol production;
- Extension of EBP Programme to whole of India except islands of Andaman Nicobar and Lakshadweep w.e.f. 01st April, 2019;
- Interest Subvention Scheme for enhancement and augmentation of the ethanol production capacity by Department of Food and Public Distribution (DFPD);
- Publication of Long Term Policy on ethanol procurement.

12. For the first time during ethanol supply year 2018-19, following raw materials apart from C heavy molasses were allowed for ethanol production viz. B heavy molasses, sugarcane juice, sugar, sugar syrup, damaged food grains like wheat and rice unfit for human consumption. Also, different ex-mill price of ethanol, based on raw material used for ethanol production, was fixed by the Government in case of sugarcane juice/sugar/sugar syrup, B heavy molasses and C heavy molasses. Additionally, OMCs fixed the ex-mill price of ethanol derived from damaged food grains. OMCs have also enhanced their ethanol storage capacity from 5.39 crore litres in November, 2017 to 26.72 crore litres in June 2020 thereby providing ethanol storage cover of 25 days at 10% blending levels at their depots.

13. The aforesaid actions helped in increasing ethanol procurement by PSU OMCs from 38 crore litres during Ethanol Supply Year (ESY) 2013-14 (December, 2013 to November, 2014) to 188.6 crore litres during 2018-19 (December, 2018 to November, 2019) thereby achieving average blend percentage of 5.00% in ESY 2018-19.

(b) <u>Ethanol supply and Blending Status</u>

The ethanol procurement and blending status over the years is tabulated below:

(Figures in crore litres)

Ethanol Supply Year	Quantity Tendered	Quantity Allocated	Quantity Supplied	Blending %age
2012-13	103.0	32.0	15.4	0.67%
2013-14	115.0	70.4	38.0	1.53%

2014-15	128.0	86.5	67.4	2.37%
2015-16	266.0	130.5	111.4	3.54%
2016-17	280.0	80.7	66.5	2.01%
2017-18	313.0	161.04	150.5	4.24%
2018-19	329.0	268.73#	188.6	5.00%

Out of this contracted quantity is 244.69 crore litres.

14. Under the EBP Programme, the target for ongoing ESY 2019-20 (December 2019 to Nov. 2020) is 7% which has to be progressively increased to 10% by ESY 2021-22.

15. The allocated contracted & receipt quantities under different categories of raw material for ongoing ESY 2019-20 as on 13.07.2020 is as under:

Raw material for Ethanol Production	**Allocated Qty (Cr lit)**	**Contracted Qty (Cr lit)**	**Receipt Qty (Cr lit)**	**Ex-mill price (Rs/lit)$**
Sugarcane juice / Sugar/ Sugar Syrup	15.06	12.70	9.58	59.48
B heavy molasses	74.92	69.82	50.30	54.27
C heavy molasses	87.34	78.57	36.79	43.75
Damaged food grains/Other source	15.16	11.59	7.25	50.36
Total	**192.47**	**172.68**	**103.91**	

$ - Ex-mill price increased over last ESY 2018-19 under all categories. Additionally, GST as per actual and transportation charges are payable to the suppliers.

16. As evident from the above table, 93.3% of the allocated ethanol quantities are from sugarcane and its derivatives. Major reasons cited by OMCs for lower offers/supplies during ongoing ESY 2019-20 are as under:

"a. Sugarcane crop in Maharashtra & Karnataka impacted by drought, flood, major maintenance and repair works etc. during last sugar season

b. Production not started by new distilleries who had participated in the tender

c. Certification challenges / Delayed / No permissions from the State Governments of Karnataka, Maharashtra & MP for Sugarcane Juice & B Heavy molasses based ethanol.

d. Damaged Food Grains based suppliers are not supplying to OMC due to increase in feedstock prices".

17. When asked by the Committee as to whether the Ministry /PSUs will be able to achieve the stated target of 10% blending of ethanol with petrol by the year 2021-22, the Ministry submitted in its written replies as under:

> "Ethanol Blending in petrol is subject to availability of ethanol in the domestic market. Government has undertaken multiple interventions, both on the demand and supply side which includes re-introduction of administered price mechanism, Opening of alternate route for ethanol production (Second Generation), Amendment to Industries (Development & Regulation) Act, 1951 which legislates exclusive control of denatured ethanol by the Central Government, Reduction in Goods & Service Tax (GST) on ethanol meant for EBP Programme from 18% to 5%, Notification of National Policy on Biofuels – 2018 which indicates a target of 20% ethanol blending in petrol by 2030, Increasing scope of raw material for ethanol procurement/production by allowing raw materials such as B heavy molasses, sugarcane juice, sugar, sugar syrup, damaged food grains like wheat and rice unfit for human consumption, surplus food grains and fruit and vegetable wastes, Fixing different ex-mill price of ethanol, based on raw material used for ethanol production, Department of Food and Public Distributions (DFPDs) Interest Subvention Scheme for enhancement and augmentation of the ethanol production capacity, Long term ethanol procurement policy to promote biofuels in the Country through structured programs.
>
> Ethanol availability for EBP programme is expected to increase significantly in view of the series of decisions taken to promote ethanol blending".

(c) <u>Procurement and Pricing of Ethanol</u>

18. Asked about the mechanism for coordination among OMCs, sugar mills and farmers for effective implementation of EBP programme, the Ministry submitted the following information:

> "BPCL is the overall coordinator for all the three OMCs with respect to ethanol procurement and is in turn coordinating with MoP&NG and ethanol Associations on behalf of OMCs. MoPNG is carrying out regular reviews with OMCs to monitor the progress of EBP Programme and to resolve any issues with the ethanol suppliers. MoPNG is also regularly interacting the Department of Food & Public Distribution (DFPD) under whose administrative control all the sugar mills and distilleries fall".

19. As directed by the Government, OMCs continue to accord priority for procurement of ethanol from 1) Sugarcane juice/sugar/sugar syrup, 2) B heavy molasses, 3) C heavy molasses, and 4) Damaged food grains / other sources in that order as was done in ESY 2018-19, which implies higher cost product being given higher priority.

20. When the Committee desire to know as to whether allowing diversion of B heavy molasses and sugarcane juice for ethanol production has incentivized sugar mills to produce greater quantity of ethanol, the Ministry gave the following written submission:

> "Govt. has been declaring remunerative prices for B heavy molasses and sugarcane juice which has incentivized sugar mills to produce greater quantity of ethanol from these feedstocks. During current ESY, the ethanol quantities from both B heavy molasses and Sugarcane Juice on OMC basis are as under:

Fig. in Crore Lit (Upto 25.08.20)

Raw material	Total LOI Qty	Total Contracted Qty
SCJ (100% Sugarcane Juice)	16.24	14.14
BHM (B-Heavy Molasses)	79.14	72.99

> The contracted quantity from both sugarcane juice and B-heavy molasses has increased from 17.6% during ESY 2018-19 to 47% of the total contracted quantity (185.82 crore litre) during current ESY".

Price of ethanol supplied to the OMCs

Feedstock	Price of ethanol (Rs./litre)		
	2019-20	2018-19	2017-18
Sugarcane Juice/sugar syrup/sugar	59.48	59.19	NA
B-Heavy molasses	54.27	52.43	NA
C-Heavy molasses	43.75	43.46	40.85
Damaged Foodgrains (unfit for human consumption)	50.36	47.13	NA

Prices of SDS / ENA

Years	Avg. all-India price of alcohol (approx. Rs./litre)	
	ENA (Extra Neutral Alcohol)	SDS (Specially Denatured Spirit) (Industrial)
2019-20	54	52
2018-19	51	49
2017-18	45	43

Note: Prices are indicative and provided by ISMA.

21. When the Committee wanted to know factors taken into consideration for calculating the benchmark price of ethanol, the Ministry stated as under:

"The prices of ethanol during an ESY, produced from all sugarcane based feedstock, is approved by the Government after recommendations of a Committee of Joint Secretaries from the Department of Food & Public Distribution, Ministry of Agriculture, Department of Expenditure and Ministry of Petroleum & Natural Gas.

The various factors which are taken into consideration are the projections on availability of sugarcane, molasses & sugar during the year, the FRP of sugarcane, the MSP of sugar, cost of raw material & cost of conversion which includes cost of utilities, pollution control measures, interest and depreciation etc."

22. Asked about the mechanisms adopted by OMCs for procurement of ethanol from sugar industry, the Ministry gave the following written reply:

"OMCs jointly invite ethanol offers through a public Expression of Interest (EoI) on an annual basis. These offers are invited periodically in 4 to 5 cycles during an Ethanol Supply Year (ESY) (1st December of the year to 30th November of the next year) to procure ethanol from indigenous sources.

The ex-mill price of ethanol derived from sugarcane based raw material is fixed by the Government before commencement of each ESY which is then communicated to the OMCs, whereas the price of ethanol produced from Damaged Food Grains (DFG) is fixed by OMCs. In addition, GST and transportation charges are paid extra to the suppliers.

MoP&NG has also published "Ethanol Procurement Policy on a long term basis under Ethanol Blended Petrol (EBP) Programme" on 11.10.2019 and OMCs have been directed to implement this Policy. In line with the above, OMCs have released a 5-year ethanol procurement EOI on 12.08.2020 for procurement of ethanol for the ESYs 2020-21 to ESY 2024-25".

23. When enquired about the existing challenges in the procurement of ethanol, the Ministry of Petroleum and Natural Gas submitted as under:

"The production of ethanol is entirely dependent on the availability of Sugarcane. This is affected during droughts as water for industrial use is restricted by District Authorities and floods during which there is large scale damage to sugarcane crop, disruption in supply chain, facilities etc.

Other challenges which OMCs face in ethanol procurement are:

- Non implementation/partial implementation of the amended provisions of Industries (Development & Regulation) (IDR) Act by States thereby still exercising controls on storage and movement of ethanol for blending in petrol. Only 13 States have implemented the amended provisions of IDR Act and other important states viz. Rajasthan, West Bengal, Telangana, Odisha, Kerala, Jharkhand, Uttar Pradesh and Delhi continue to exercise controls.

- Sugar mill owners prefer to supply ethanol to nearby OMC location and are hesitant to supply at distances.

Government has fixed different ex-mill price of ethanol in case of sugarcane juice/sugar/sugar syrup, B heavy molasses and C heavy molasses by linking it to Fair and Remunerative Price (FRP) of sugarcane and ex-mill price of sugar. Additionally, OMCs fix the ex-mill price of ethanol derived from DFG".

(d) <u>Ethanol Production</u>

24. When the Committee wanted to know as to whether any state wise priority has been fixed by the Government for supply of ethanol, the DFPD in a written reply stated as under:

"Oil Marketing Companies (OMCs) fix State wise requirement depending upon the availability of ethanol in that state and adjoining states. Sugarcane and ethanol is produced mainly in three states viz Uttar Pradesh, Maharashtra and Karnataka. Transporting ethanol to far flung States from these three states involves huge transportation cost. By bringing new grain based distilleries in the entire country would result in distributed production of ethanol and would save a lot of transportation cost and thus prevent delays in meeting the blending target & would benefit the farmers across the country".

25. When asked about the quantum of sugarcane juice that has been allowed for production of ethanol directly by Department of Food and Public Distribution (DFPD), the following reply was given:

"DFPD has amended the Sugarcane (Control), Order 1966 inter-alia permitting sugar mills for use of cane juice for production of ethanol. There is no restriction on production of ethanol from different feed stocks."

26. When the Committee wanted to know as to whether any study has been conducted and the action initiated for promoting the cultivation of such crops that can lead to production of ethanol, the DFPD submitted as under:

"No specific study has been conducted so far. However, during inter-ministerial meeting in respect of augmentation of ethanol production, department of Agriculture, Cooperation & Farmer's Welfare has been requested to explore increase in the acreage of crops, particularly maize, that can lead to production of ethanol. A modified scheme for extending financial assistance to project proponents for enhancement of their ethanol distillation capacity or to set up distilleries for producing 1st Generation (1G) ethanol from feed stocks such as cereals (rice, wheat, barley, corn & sorghum), sugarcane, sugar beet etc. is also

being introduced and this will promote the cultivation of other crops that can lead in production of ethanol".

27. Asked as to whether any incentive/subsidy is being offered to sugarcane farmers in order to promote ethanol production for early implementation of EBP, the DFPD in its written submission stated as under:

"Due to remunerative prices offered to sugar mills for production and supply of ethanol to OMCs, the farmers are otherwise benefited in getting cane prices by the sugar mills on time as the ethanol supply increases the liquidity of the sugar mills without substantial loss of time".

28. When the Committee enquired as to whether the Government is contemplating to introduce High Yielding Varieties (HYV) of sugarcane to increase production of ethanol, the DFPD stated as under:

"The State Governments are encouraged to introduce high yielding verities of sugar cane in their states, so that farmers get benefited. In past a variety of CO 238 was introduced to the farmers of Uttar Pradesh, which has high sugar content and productivity, benefiting the farmers of the state. This department has also requested all sugar producing states/UTs to encourage farmers to grow high yielding variety like CO238 and research institutions/sugar mills may also be encouraged to put efforts for development of better high yielding varieties of sugarcane. This will not only help the farmers but will also make the sugar sector more viable".

29. When the Committee sought to know steps taken by the Ministry in monitoring the sugar mills and distilleries under the EBP programmes, the DFPD furnished the following reply:

"Administering production of ethanol by the distilleries has come under the purview of this Ministry only in recent past. However, with all efforts, DFPD is actively monitoring the distilleries attached with sugar mills and other standalone grain based distilleries for augmentation and production of ethanol capacities in the country. In order to achieve the targeted blending percentage, creation of additional capacities after obtaining various clearances, including loans by banks are the major challenges before the industry".

30. Asked on the progress made under the scheme for enhancement and augmentation of ethanol production capacity, the DFPD gave the following reply:

"Till year 2014-15, ethanol distillation capacity of molasses based distilleries was only 215 cr. litres. In past 6 years, the capacity of molasses based distilleries have been doubled and are currently at 426 cr. litre. With a view to achieve blending

targets, Govt. is making concerted efforts to further double the ethanol distillation capacities of molasses based distilleries in the country by 2024 for which, Government opened a window of 30 days in September, 2020 inviting more applications from the entrepreneurs under the ethanol interest subvention schemes; 238 projects for a loan amount of about Rs. 16,000 crore have been approved by DFPD. Government will be bearing interest subvention @ 6% maximum per annum for 5 years against the loans availed from banks by entrepreneurs".

31. Explaining the role in the Ethanol Blended Petrol Programme, the representative of the Department of Food and Public Distribution during the oral evidence made the following submission:

"माननीय प्रधान मंत्री जी ने बायो फ्यूएल और इथेनॉल ब्लेंडिंग के ऊपर जिस तरह से फोकस किया है, उसकी प्रोग्रेस हमें वर्ष 2003 से नहीं देखनी चाहिए, उसकी वास्तविक प्रोग्रेस वर्ष 2013-14 से हुई है। उस समय इथेनॉल ब्लेंडिंग के लिए सिर्फ 38 करोड़ लीटर इथेनॉल प्रोड्यूस किया जाता था। अभी जो इंटर-मिनिस्ट्रियल ग्रुप बना है, इससे पहले विभाग उससे इनफॉर्मली मिलता था। उन सब के प्रयासों से यह ब्लेंडिंग की कपैसिटी वर्ष 2018-19 में 189 करोड़ लीटर पहुंची, जिसमें पाँच गुना बढ़ोतरी है।

अभी का जो टारगेट है, उसके हिसाब से वर्ष 2020-21 में यह 300 करोड़ लीटर हो जाएगी। इसमें आठ गुना वृद्धि हुई है। यह कैसे संभव हो पाया और इसके लिए आगे की क्या दिशा है, माननीय सदस्य ने एक बहुत ही महत्वपूर्ण प्वाइंट उठाया था कि अगर हम बी और सी मोलैसेस को लेकर केवल इथेनॉल बनाएंगे तो हम यह टारगेट अचीव नहीं कर सकते हैं, जो बिल्कुल सही बात है। इसी को देखते हुए डिपार्टमेंट ने मिनिस्ट्री ऑफ पेट्रोलियम और नेचुरल गैस के साथ मिलकर शुगरकेन के जूस से डायरेक्टली इथेनॉल बनाने के प्रोग्राम को सपोर्ट करना शुरू किया है। वर्ष 2018-19 में शुगरकेन जूस से इथेनॉल सिर्फ 0.68 करोड़ लीटर बनता था। अब यह बढ़कर करीब 15 करोड़ लीटर हो गया है। मिनिस्ट्री ऑफ पेट्रोलियम और नेचुरल गैस ने जो रेट तय किया, उसको देखते हुए उस दिशा में और ज्यादा तेजी से वृद्धि होगी। अगर आप आँकड़ों के हिसाब से देखें तो बी और सी मोलैसेस से जो इथेनॉल बनता था, उसमें भी बी मोलैसेस में वृद्धि हुई है। यह 32 करोड़ लीटर से 75 करोड़ लीटर पहुँच गया है। सी मोलैसेस जो शुगर बनने के बाद प्रोड्यूस होता था, उसमें शुगर बन जाती थी, उसमे भारी कमी आई है। वर्ष 2018-19 में 145 करोड़ लीटर था। अब यह घट कर 85 करोड़ लीटर रह गया है।

32. When the Committee enquired about the prospects of ethanol production from sources other than sugarcane, the DFPD relied as under:

"Government has fixed target of 10% blending of fuel grade ethanol with petrol by 2022 & 20% blending by 2030 (further proposed to be preponed to 2025). To achieve 20% blending by 2025, requirement of ethanol is 900 cr. Ltrs., out of which only 550 cr. Ltrs. can be met by molasses based distilleries / sugar industry by diverting surplus sugar of 60LMT & the remaining 350 cr. Ltrs. has to be met by grain based distilleries or other distilleries producing 1G ethanol".

33. When asked about other feed stocks for production of Ethanol, the Department of Food and Public Distribution (DFPD) furnished the following information:

> "With the envisaged production of ethanol from food grains like maize etc., it is expected that the ethanol will be produced through out the country as against the present scenario wherein ethanol production capacities are mostly located in few sugar cane growing states. This will reduce the transportation cost of carrying ethanol from one state to another and with the diversion of crop, it is expected that the prices of ethanol feed stocks like maize will increase substantially, boosting the farmers income".

34. When asked by the Committee about the alternate approaches that can be employed to reduce bio ethanol production costs, the following reply was given:

> "The bio-ethanol production costs can be reduced by improvising fermentation & distillation efficiencies as also the consumption of utilities. Converting waste to resource, particularly, utilization of spent wash in molasses based distilleries for producing value added products can help in reducing the cost of production".

35. During the oral evidence the representative of the MoPNG made the following submission regarding procurement of ethanol:

> "..... हमारे मंत्रालय का जो रोल है, हमारा मार्केटिंग कंपनीज़ के जरिये मार्केटिंग का मेन रोल होता है। जहां तक प्रोडक्शन का सवाल है, उसको फूड मंत्रालय देखता है, क्योंकि शुगर मिल्स उनके अधीन आती हैं। जो एथेनॉल प्रोड्यूस होता है, जो नार्मल डिस्टिलरीज़ हैं, जो अन्य कामों के लिए भी एथेनॉल बनाती हैं, वही डिस्टिलरीज़ फूड ग्रेन्स बेस्ड एथेनॉल बनाती हैं, जिसे हम प्रिक्योर करते हैं। हम जो टेंडर करते हैं, उसमें हम वही मात्रा लिखते हैं, जितना हमारे टारगेट के हिसाब से हमें चाहिए होता है। यदि हम आज 10 प्रतिशत लेने के लिए तैयार हैं, तो हम 10 प्रतिशत के हिसाब से ही टेंडर करते हैं। परंतु जो उनकी स्पेयर कैपेसिटी होती है, या उनके पास जितनी मात्रा उपलब्ध होती है, उसी हिसाब से प्रोड्यूस करने वाली जो कंपनीज़ होती हैं, वे बिड करती हैं। अल्टीमेटली उसी हिसाब से वे सप्लाई भी करती हैं। अभी उसमें थोड़ा गैप बचा हुआ है। अभी हाल ही में हमने इस विषय पर खाद्य सचिव के साथ बैठक भी की थी। अभी माननीय मंत्री जी ने भी हाल ही में दो-तीन बैठके की हैं कि इसमें क्या किया जाए। जब तक इसमें सभी का सहयोग नहीं मिलेगा, तब तक हमारा मंत्रालय कुछ नहीं कर पाएगा, क्योंकि जो भी प्रोडक्ट है, वह वहीं से आता है। हम इस वर्ष यह प्रयास कर रहे हैं कि हम 5 प्रतिशत से भी कुछ ऊपर जा सकें। लेकिन हम शुगर से 5 प्रतिशत से ऊपर नहीं जा पाएंगे, क्योंकि हमने अभी जो भी टेंडर्स किए हैं, हमें उस पर जो भी रिस्पांस मिला है, वह लगभग 170 करोड़ लीटर्स से थोड़ा-सा ऊपर है। अभी उससे अधिक उपलब्धता नहीं है। अब हम यह प्रयास कर रहे हैं कि क्या हम फूड ग्रेन्स से कुछ और ले सकते हैं। अभी सरकार ने फूड ग्रेन्स पर जो अनुमति दी है, वह केवल डैमेज्ड फूड ग्रेन्स पर दी है। इसमें जो राइस डैमेज्ड है, उसी से एथेनॉल बनाया जा रहा है। अभी मैज़ से अनुमति नहीं दी गई है। व्हीट से शायद ठीक तरह से नहीं बनता है। अभी हमारे पास केवल डैमेज्ड राइस ही बचता है। अभी सरप्लस फूड ग्रेन्स की बात हुई थी। एफसीआई के पास कुछ सरप्लस फूड ग्रेन्स था, लेकिन अभी प्रधान मंत्री गरीब कल्याण योजना में

खाद्यान्न का वितरण हो रहा है, इसलिए अभी हम सरप्लस पर रुके हुए हैं। अभी हम इसके लिए प्रयास कर रहे हैं। देश में डिस्टिलरीज़ में स्पेयर कैपेसिटी उपलब्ध है। एक रफ अनुमान यह है कि अभी डिस्टिलरीज़ में 75 करोड़ लीटर की स्पेयर कैपेसिटी उपलब्ध है, जो एथेनॉल फूड ग्रेन्स से बन सकता है। इसलिए हम इस वर्ष यह प्रयास कर रहे हैं कि हमें वहां से कुछ अधिक मात्रा मिल जाए, तो शायद हम 5 प्रतिशत से कुछ अधिक बढ़ पाएं।

महोदय, हमने अगले वर्ष के लिए कुछ तैयारियां की हुई हैं। हमने फूड मंत्रालय के साथ भी कुछ बैठकें की हैं और अपनी भी कुछ कैल्कुलेशन्स की हैं। हम अगले वर्ष के लिए यह तैयारी कर रहे हैं कि शुगर इंडस्ट्री से जो मात्रा आती है, वह किसी प्रकार से बढ़ सके। उन्होंने यह कहा है कि यह 300 करोड़ लीटर्स तक जा सकता है। महोदय, आपने ठीक ही कहा है कि बैंकों द्वारा लोन देना बहुत आवश्यक है। मुख्य तौर पर जो कठिनाइयां आ रही हैं, वह कुछ हद तक ही हैं। मंत्रालय द्वारा शुगर इंड्रस्टीज़ को कुछ सपोर्ट दिया गया था, ताकि वे अपनी एथेनॉल बनाने की कैपेसिटी बढ़ा सकें। यदि यह सब हो जाता है, तो शायद हम शुगर से भी कुछ आगे बढ़ पाएंगे। जो डैमेज्ड फूड ग्रेन्स हैं, हम अगले वर्ष उसके लिए भी यह प्रयास करेंगे कि इसमें हमारा प्रोक्योरमेंट का जो तरीका है, उसको और सरल बनाया जाए, ताकि हम जो भी प्राइस अनाउंस करें, वह थोड़े रियलस्टिक हों और हम जो भी प्रोडक्शन करें, हमारी ऑयल मार्केटिंग कंपनीज़ उसको उठाने के लिए तैयार रहें। हम अगले वर्ष यह प्रयास करेंगे कि हम इसमें कुछ आगे बढ़ सकें।

36. When the Committee wanted to know as to whether DFPD is participating in any international cooperation programme for research and development in the field of bio-fuels, the Department replied in the negative.

> "DFPD is not participating in any international cooperation programme for research and development in the field of bio-fuels".

III. ROLE OF DEPT OF FINANCIAL SERVICES IN THE BIO FUEL POLICY

37. The Department of Financial services (DFS) submitted in a written note the following about its role in the Bio fuel policy:

> **"A. Inclusion of Bio fuel under PSL:**
>
> Bio fuels includes compressed bio gas (CBG), ethanol, (incl. Compressed Bio Gas, Bio-Ethanol, Bio-diesel, Bio-jet fuel, and any other advanced Bio-fuels. The proposal of MoPNG for inclusion of CBG projects under priority sector lending was taken up with RBI. RBI has since issued revised PSL guidelines vide their circular dated 04th September 2020, which inter-alia includes projects for production of Bio fuel and CBG plants under the PSL, as mentioned in para 1 above.
>
> The revised guidelines on PSL issued by RBI on 04.09.2020, inter alia, includes the following under Agriculture Infrastructure category.

❖ Loans for construction of oil extraction/processing units for production of bio-fuels, their storage and distribution infrastructure

❖ Loans to entrepreneurs for setting up of CBG plants.

The above changes will facilitate financing of bio-fuel projects and CBG plants under priority sector lending mandated for agriculture sector.

B. Policy Initiatives:

a. *National Bio- fuel*has mandated blending of ethanol with the petrol to achieve 20% blending target by 2030 and it is understood to have factored in the Food Security Measures and Environmental Impact.

b. *Ethanol Blended Petrol (EBP) Programme:* Government has been implementing Ethanol Blended Petrol (EBP) Programme throughout the country except Union Territories of Andaman Nicobar and Lakshadweep islands, wherein Oil Marketing Companies (OMCs) sell petrol blended with 10% ethanol.

c. *Sustainable Alternative Towards Affordable Transportation (SATAT):* Sustainable Alternative Towards Affordable Transportation (SATAT) was launched on 1st October 2018 aiming to establish an ecosystem for production of CBG from various waste/ biomass sources in the country. SATAT has envisaged developing 5000 CBG plants with total CBG production capacity of 15 Million Metric Tonne Per Annum (MMTPA) i.e. equivalent to 54 MMSCMD of gas by 2023.

d. S*cheme for extending financial Assistance to sugar mills for enhancement and augmentation of the Ethanol Production capacity'*

C. Scheme for extending financial Assistance to sugar mills for enhancement and augmentation of the Ethanol Production capacity:

The Central Government in the Department of Food & Public Distribution (DF&PD) launched the subject scheme with a view to increase production of ethanol and its supply under Ethanol Blended Petrol (EBP) Programme. The Scheme was notified on 19 July 2018 and subsequent amendments were notified on 9 August 2018. A similar scheme was notified on 08.03.2019 to expand the scope of scheme notified on 09.08.2018.

This Scheme aims to create ethanol production capacity with maximum number of mills for not only utilizing the molasses but also for diversion of sugar for production of sugar in surplus seasons. To further optimise the ethanol production capacity, a Scheme for molasses based standalone distilleries was notified on 08.03.2019.

(a) Objectives

(i) To install new incineration boiler or by adopting any other method as approved by the Central Pollution Control Board (CPCB) for Zero Liquid Discharge (ZLD) in a distillery.

(ii) To set up new distilleries attached with sugar mills including expansion of the capacity of the existing distilleries attached with sugar mills.
(iii) To extend similar benefit for molasses based stand-alone distilleries.

(b) Financial Implications:

(i) Interest subvention @6% per annum or 50% of rate of interest charged by banks, whichever is lower, shall be borne by Central Government for five years including one-year moratorium period.

(c) Scheme guidelines

(i) DF&PD, after scrutinising the applications cum proposals, will accord it's in principle approval and recommend such approved proposals to the lending banks for considering sanction of loan.
(ii) Some of the parameters taken in account for in principal approval – Govt. dues, Cane price arrear, position availability of molasses, environment cleanness, indicative cost indicated by NSI, Kanpur, project cost etc.
(iii) Banks would be at liberty to sanction/release the loan as per their commercial norms/policies and in compliance with regulatory guidelines, including the restructuring guidelines, as notified by RBI from time to time.
(iv) Banks/ Financial Institution would appraise projects as per their guidelines /criteria for approval of such loans on the basis of DPR submitted by the sugar mill.

(d) Role of Department of Financial Services (DFS)

(i) Request banks to expedite the processing of applications received by them and take an early decision of the pending loan applications with them as per their commercial norms/policies and in complaince with regulatory guidelines, including restructuring guidelines.

(e) Progress of 102 loan proposal sent to Banks
(i) Out of the list of 110 proposals shared by Department of Food and Public Distribution, 68proposalshave been received by banks.
(ii) Other proposals are related to National Cooperative Development Corporation (NCDC), Indian Renewable Energy Development Agency (IREDA) and Privates Banks.

(iii) Consolidated progress of sanction of loans is as under

No. of applications actually received	No. of application sanctioned	Amount Sanctioned (Amt in Crore)	application loan Disbursed	Amount of loan Disbursed (Amt in Crore)	Applications rejected (NPA etc.)	Applications under process
68	**46**	**2150**	**41**	**1557**	**9**	**13**

(f) Some of the reasons given by banks for pending/ rejection of applications

(i) Applications declined due to weak financial status or NPA account of the mills.
(ii) Absence of clear collateral security for loan.
(iii) Borrowing capacity of sugar mills exhausted.

D. Escrow mechanism through Tripartite Agreement:

With a view to expedite sanction of loan under the scheme implemented by the DF&PD under the scheme implemented by DF&PD for enhancement and augmentation of the Ethanol Production capacity as mentioned above, the concept of tri-partite agreement (TPA) between producers of ethanol (sugar mills), buyers of ethanol (OMCs) and the lenders (banks) through an escrow account has been evolved. Under this arrangement, the banks can consider giving loans to sugar mill having even weak balance sheets. It has been conveyed by Ministry of Petroleum & Natural Gas (MoPNG) that the draft agreement has been examined in consultation with OMCs and it is agreed in-principle to have an arrangement among banks, ethanol supplier and OMCs wherein the payments towards ethanol supplies under EBP Programme shall be credited by OMCs into an escrow account for the purpose. Banks after deducting loan installment, will release balance money to sugarmill. During a recent review of the implementation of this scheme jointly by Secretary (DF&PD), Secretary (MoPNG) and Secretary (DFS) on 21.8.2020 with the representatives of leading banks and **Oil** Marketing Company (OMC), Principal Secretaries/ Cane Commissioners of Sugar producing States and sugar industry associations (ISMA, AIDA and NFCSF), Secretary (DFS) advised that the changed policy with TPA would be acceptable to all, including banks.

The proposed arrangement through the TPA is expected to provide a level of comfort to banks while extending loan to sugar mills under the scheme implemented by DF&PD for enhancement and augmentation of the Ethanol Production capacity'

The Ministry of Petroleum and Natural Gas has furnished the following information as some of the reasons in procurement of ethanol for delay in achieving the desired blending percentage".

IV. ISSUES IMPACTING PROCUREMENT AND SUPPLY OF ETHANOL

38. Some of the procedural/administrative hurdles impacting ethanol procurement and supplies by OMCs / ethanol suppliers are as under:

"a. Non implementation of the amended provisions of IDR Act

Government of India has amended the IDR Act vide notification No. 27 dated 14.5.2016. As per the amendment, the State Governments can legislate, control and / or levy taxes and duties on liquor meant for human consumption; and

denatured ethanol, which is not meant for human consumption, will be controlled only by the Central Government. Directive issued to all the Chief Secretaries of the States on 21st December, 2016 by DFPD followed by letter by this Ministry on 29th August, 2017. MoP&NG is regularly pursuing the matter with the States and 13 States had already implemented the IDR Act amendment which includes Karnataka, Goa, Maharashtra, Gujarat, Bihar, Chhattisgarh, Tamil Nadu, Andhra Pradesh, Punjab, Himachal Pradesh, Madhya Pradesh, Haryana and Uttarakhand till date.

The aforesaid matter was taken up with State Governments at multiple times at various levels in the Government including by PMO which has facilitated withdrawal of controls / import duty by States like Uttar Pradesh, Kerala, Delhi. However, till date Rajasthan, WB, Telangana, Odisha, Kerala, Jharkhand, UP and Delhi has not implemented the amended IDR Act".

39. Regarding the amendment to IDR Act, the representative of MoPNG stated the following during the oral evidence on 22 July, 2020:

"...एक मुद्दा यह भी आया था कि जो आईटीआर एक्ट है, उसको कुछ राज्यों ने नहीं लागू किया है। उसमें दिल्ली भी शामिल है। दिल्ली ने एक अच्छी चीज यह की है कि बाहर से जो भी एथेनॉल आता था, वह उस पर एक रुपया लेते थे, लेकिन उसमें कुछ ही दिनों पहले रिलैक्सेशन दिया गया है। अभी कुछ ऐसे भी राज्य हैं, जिन्होंने इसको नहीं लागू किया है। मेरे पास उन राज्यों की लिस्ट है। माननीय मंत्री जी ने सभी मुख्य मंत्रियों को पत्र लिखा है कि इस एक्ट को लागू किया जाए, ताकि जो एथेनॉल है, वह फ्रीली मूव कर सके। उत्तर प्रदेश में सबसे ज्यादा एथेनॉल प्रोड्यूस होता है। अगर राज्य को लें, तो हम वहां पर 10 प्रतिशत तक पहुंच जाते हैं। यदि हमको पूरे देश में 10 प्रतिशत तक पहुंचना है, तो हमको एथेनॉल को एक राज्य से दूसरे राज्य में लेकर जाना पड़ेगा, क्योंकि हर राज्य में एथेनॉल प्रोड्यूस नहीं होता है। इसलिए इसकी फ्री मूवमेंट बहुत आवश्यक है। सभी माननीय सदस्यों ने बहुत ही महत्वपूर्ण मुद्दा उठाया है। यदि इसमें राज्य सरकारों का सहयोग मिलेगा, तो शायद हम इसमें आगे बढ़ पाएंगे"।

40. On the issues arising out of non -implemantation of IDR Act by some states during oral evidence, the Ministry of PNG representative submitted the following observation:

"...आपने पूछा था कि आईआरडी एक्ट किन राज्यों में इंप्लीमेंट नहीं हुए हैं। इस आईआरडी एक्ट में चार चीजें हैं। पहला है एक्साइज़ कंट्रोल फॉर एथेनॉल मूवमेंट। एथेनॉल मूवमेंट के लिए एक्साइज़ से परमिशन लेनी होती है। दूसरा रिक्वायरमेंट फॉर स्टोरेज़ ऑफ एथेनॉल, एथेनॉल स्टोर करने के लिए एक लाइसेंस होता है और राज्यों के बीच में इंपोर्ट और एक्सपोर्ट होता है। ये राज्य हैं, जैसे दिल्ली ने दो रुपये रखे थे। फिलहाल दिल्ली ने इसे सस्पेंड कर दिया है, लेकिन हटाया नहीं है। इसके बाद राजस्थान है, यह एक रुपये इंपोर्ट ड्यूटी चार्ज करते हैं। इन सारी चीजों के लिए लाइसेंस की जरूरत होती है। तेलंगाना, पश्चिम बंगाल, ओडिशा, केरल, झारखंड और यूपी ने एक्सपोर्ट और इंपोर्ट ड्यूटीज़ हटा दी है, लेकिन एथेनॉल के मूवमेंट और स्टोरेज के लिए लाइसेंस लगता है"।

41. On the issue regarding movement of ethanol between states, the representative of DFPD made the following submission during the oral evidence on 6 November, 2020:

> "....दूसरा, हमारे सामने समस्या थी कि जो शुगरकेन बेस्ड डिसटलिरीज़ थीं, उनमें माननीय सदस्य जी ने बिल्कुल सही बताया कि राज्यों के बीच मूवमेंट के ऊपर दिक्कत आती थी। अब इस समय हमारी जानकारी के हिसाब से तीन या चार राज्य ऐसे हैं, जिनके साथ हम लगातार मीटिंग कर रहे हैं। वहां पर अभी भी मूवमेंट की दिक्कत है। राजस्थान उनमें से एक राज्य है। अभी भी वे मूवमेंट एलाऊ नहीं कर रहे हैं। वे वहां एक पर्टिकुलर लेवी लगाते हैं। हमने सबको सुझाव दिया है कि यह सबके हित में है, क्योंकि यह देश का प्रोग्राम है। अगर वह मोलेसस स्टैंड एलोन डिस्टलिरी को सप्लाई कर रहा है, जो स्टेट में नहीं है, क्योंकि इस समय जो हमारे गन्ने का उत्पादन है, वह करीब 80 पर्सेंट से ज्यादा सिर्फ तीन राज्यों में होता है। जो शुगर मिल्स हैं, वे भी उन्हीं राज्यों में लगी हुई हैं। जो मोलेसस प्रोड्यूस होगा, वह भी उन्हीं जगहों पर होगा। जो शुगरकेन होगा, वह भी महाराष्ट्र, यूपी और कर्नाटक में होगा। जो सरप्लस स्टॉक है, वह तो फिर स्टैंड एलोन डिस्टलिरी को स्टेट के बाहर जाना पड़ेगा, अगर आपको उसकी कैपेसिटी यूज करनी है, वरना वह आइडल पड़ी रहेगी। हमने इस पर राज्यों के साथ भी चर्चा शुरू की है। हमें उम्मीद है कि इस समस्या का समाधान हम लोग निकाल लेंगे"।

b. Release of credit by banks

42. It is seen that loan proposals for setting up new distilleries/ expansion of existing capacity are not being cleared by banks as financial institutions regard sugar sector as a high risk due to weak financial health of sugar mills.

c. Environmental Clearance (EC) for ethanol distillation capacity expansion projects approved by DFPD

43. MoP&NG has requested MoEF&CC to remove the condition of Certification by MoP&NG that the proposal is for the purpose of blending bio-ethanol with petrol. However, MoEF&CC has extended the validity of the notification till February, 2021 including the aforesaid deterrent condition. It may be noted that special dispensation is available only for those project proponent which submit MoP&NG certificate as mentioned in the aforesaid notification along with the EC application. Accordingly, MoEF&CC is granting the EC as per its normal procedure and is not providing benefit of notification to the project proponents yet.

V. <u>GST ISSUE</u>

44. When asked as to whether implementation of Goods and Service Tax (GST) has reduced the number of taxes levied on ethanol at various stages of supply chain, the Ministry of PNG submitted as under:

"Ethanol manufacturers use molasses as the key raw material for manufacturing of ethanol. Molasses is subject to higher rate of GST as against ethanol supplied to OMC for blending which attract GST @5%. GST paid on procurement of molasses is available as Input Tax Credit (ITC) to ethanol manufacturers; however, they are not able to utilize the full ITC of GST paid due to lower rate of tax on ethanol supplied to OMCs for blending. GST provisions allow refund of such unutilized ITC. Based on the feedback received from ethanol manufacturers this inverted duty structure leads to working capital blockage for them".

45. Regarding the GST issue, the representative of the DFPD during the oral evidence made the following submission:

" एक और समस्या जीएसटी की आ रही है। यह मूवमेंट से रिलेटेड ही है। मोलेसस के ऊपर अभी 28 पर्सेंट की ड्यूटी है और जो इथेनॉल है, उसके ऊपर 5 पर्सेंट की ड्यूटी है। जो रिवर्स क्रेडिट मिलना होता है, वह 23 पर्सेंट का बन जाता है। यूनिट्स का वह पैसा ब्लॉक हो जाता है। उसको रिफंड लेने में करीब 8 से 9 महीने का समय लग जाता है। इस विषय के ऊपर भी मंत्रालय के साथ, वित्त मंत्रालय और राज्यों के साथ, चूंकि जीएसटी काउंसिल राज्यों का विषय है, तो उनके साथ चर्चा शुरू की है। हम कोशिश कर रहे हैं की इसका भी समाधान निकाला जाए"।

VI. PRODUCTION OF ETHANOL FROM FOODGRAINS

46. When the Committee wanted to know as to whether the Government is planning to grant permission for production of ethanol from surplus food grains including rice, the Department of food and public distribution submitted the following in its written reply:

"The Government has already permitted production of ethanol from damaged food grains and rice available with FCI godowns and also from maize".

47. Regarding the use of maize, the DFPD stated as under:

"With the envisaged production of ethanol from food grains like maize etc., it is expected that the ethanol will be produced through out the country as against the present scenario wherein ethanol production capacities are mostly located in few sugar cane growing states. This will reduce the transportation cost of carrying ethanol from one state to another and with the diversion of crop, it is expected that the prices of ethanol feed stocks like maize will increase substantially, boosting the farmers income."

48. When asked about the Government's policy towards production of ethanol from damaged food grain such as wheat, rice, etc, the DFPD furnished the following in its written reply:

"Under the existing bio-fuel Policy, blending of ethanol with motor fuel under EBP programme is mandated for 10% by 2022 & 20% by 2030. The Government is considering to advance the target for achieving 20% blending in 2025. To achieve the target, Government has also permitted production of ethanol from damaged food grain, rice available with FCI and maize. During last three years, only damaged food grains were used for ethanol production under EBP. No ethanol was supplied by Grain based distilleries in ethanol year 2017-18. Grain based distilleries have produced and supplied ethanol to the tune of 9.5 cr. ltrs. during the ethanol year 2018-19 & 15.94 cr. ltrs. during the ethanol year 2019-20 from damaged food grains respectively".

49. The quantity of foodgrains that got damaged and became non-issuable due to various reasons during past three years under the custody of FCI is given below:

Year	**Offtake quantity (excluding DCP States) in Lakh tonnes**	**Damage Accrual in FCI (In Lakh tonnes)**	**% Damaged Food grain against Offtake Quantity**
2017-18	452.16	0.027	0.006%
2018-19	500.080	0.052	0.01%
2019-20	455.126	0.193	0.004%
2020-21 (as on 30.11.2020)	521.329	0.017	0.003%

50. When the Committee enquired about the cost of production of ethanol from damaged food grains and the quality of ethanol produced from damaged food grains meet the quality standards required for blending of petrol under EBP, the DFPD submitted the following:

"The cost of production of ethanol from damaged food grain is worked out at Rs. 51.55/ltr for 2020-21. The quality of ethanol to be supplied under EBP at different blending percentage remains similar as decided by BIS and accordingly the distilleries are maintaining the ethanol specification".

51. When the Committee enquired about the actual capacity added for enhancement and augmentation of ethanol production capacity, The DFPD in its written submission informed as under:

"Till year 2014-15, ethanol distillation capacity of molasses based distilleries was only 215 cr litres. In past 6 years, the capacity of molasses based distilleries have been doubled and are currently at 426 cr litre. With a view to achieve blending targets, Govt. is making concerted efforts to further double the ethanol distillation capacities of molasses based distilleries in the country by 2024 for which, Government opened a window of 30 days in September, 2020 inviting more

applications from the entrepreneurs under the ethanol interest subvention schemes; 238 projects for a loan amount of about Rs. 16,000 crore have been approved by DFPD. Government will be bearing interest subvention @ 6% maximum per annum for 5 years against the loans availed from banks by entrepreneurs."

52. A statement showing State-wise number of grain based distilleries along with their capacity is given at APPENDIX-II.

53. When the Committee wanted to know about how much capacity addition of grain based distilleries is required in the country to increase the production of ethanol for Ethanol blended programme in time with the blending targets fixed in the next five years, the DFPD in its written reply furnished the following:

"To achieve the target of 20% ethanol blending by 2025, total 350 Cr. ltr of ethanol would be required from grain based distilleries apart from 150 cr. Ltr for other usage. To reach 500 Cr. Ltr of ethanol/alcohol production, about 625 Cr. Ltr of installed capacity of grain based distilleries would be required. At present the total ethanol/alcohol capacity of grain based distilleries is 258 Cr. ltr. Therefore, further capacity addition of 367 Cr. Ltr in grain based distilleries would be required by 2025 to achieve 20% blending".

54. Asked about how much investments are envisaged and the employment generation potential from these new distilleries, the DFPD submitted as under:

"Normative cost for setting up grain based distilleries/ expansion, as assessed by National Sugar Institute, Kanpur, is about Rs 1.45 cr to create a capacity of 1 KLPD (3.3 Lakh ltrs per. annum on 330 working days basis). An approximate investment of around Rs. 40120 Cr would be needed to reach the 20% blending target. This investment will go in capacity expansion/creation of molasses as well as grain based distilleries, to convert single feed distilleries to dual feed distilleries and in installation of Molecular Sieve Dehydration in existing distilleries.

Setting up of new distilleries/ expansion of existing distilleries will generate employment as lakhs of workers would be employed in these distilleries and ancillary activities. Farmers and their dependents will also be benefited by this proposal. Many domestic manufacturing companies would receive orders. Hence, setting up of new distilleries will have significant employment generation potential".

55. Explaining the need for production of ethanol from foodgrains for blending purposes, the representative of the Department during the oral evidence made the following submission:

"...महोदय, आपने जो दिशानिर्देश दिया, उन्हीं को फॉलो करते हुए हम शुगरकेन को आगे लेकर जा रहे हैं। लेकिन, इसकी एक सीमा है, अगर आप पूरी दुनिया में देखें तो दुनिया में इथेनॉल ब्लेन्डिंग के लिए जो प्रोड्यूस होता है, वह करीब 10,000 करोड़ लीटर होता है। 10,000 करोड़ लीटर में से करीब 60 परसेंट फीड स्टॉक मेज का है। शुगरकेन तथा जिस प्रकार से पानी के ऊपर चर्चा हुई, करीब तीन गुना ज्यादा पानी का इस्तेमाल करता है। शुगर से इथेनॉल कन्वर्ट करना लॉन्ग रन में शायद सस्टेनेबल न हो। अभी तो हमारी जरुरत भी है और हमें करना भी चाहिए, क्योंकि जिसके रेट के ऊपर हमारी बात हुई है। यहाँ टेक्नोलॉजी और प्रोडक्टिविटी की बात आई, एग्रीकल्चर डिपार्टमेंट उसके ऊपर चर्चा कर रहा है। शुगर सेक्टर की जो समस्या है और हमें इथेनॉल की तरफ क्यों जाना चाहिए, हमारी करीब 60 लाख टन सर्प्लस शुगर प्रोड्यूस होती है। हमारी कोशिश है कि यह जो पूरा का पूरा 60 लाख टन सर्प्लस है, वह शुगर की तरफ न जाकर, सी मोलैसेस की तरफ न जाकर, डायरेक्टली शुगरकेन से यह बन जानी चाहिए। हमारी जो डोमेस्टिक डिमांड 260 लाख टन की है, वह पूरी मीट हो। उसमें हम ग्रोथ भी मीट कर पाएंगे।

महोदय, यह क्यों जरूरी है? यह इसलिए जरूरी है, क्योंकि हमारे गन्ना सेक्टर की प्रोडक्टिविटी कम है। इसकी वजह से इंटरनेशनल मार्केट में हम जो चीनी 31 रुपये में लेकर जाते हैं, उसका इंटरनेशनल मार्केट में करीब 21 रुपये दाम है। इसलिए हमारी चीनी एक्सपोर्ट भी नहीं हो सकती है। अगर उसे एक्सपोर्ट करना है तो हमें 10 रुपये प्रति किलो सब्सिडी देनी है। उस सब्सिडी के ऊपर भी डब्ल्यूटीओ के जो रूल्स हैं, इंटरनेशनल एग्रीमेन्ट्स हैं, जिसमें इंडिया भी भागीदार है। वर्ष 2023 के बाद विकासशील देश उसमें सब्सिडी भी नहीं दे सकते हैं। इसलिए इथेनॉल की तरफ जाना अत्यंत आवश्यक है। मैंने आपको बताया कि हम वर्ष 2020-21 में 300 करोड़ लीटर इथेनॉल देंगे। वर्ष 2013-14 में 38 करोड़ लीटर था और अब यह 300 करोड़ लीटर होने जा रहा है। हमारा जो टारगेट है, वह 550 करोड़ लीटर का है। जैसा यहाँ चर्चा में आया कि बाकी जो 450 करोड़ लीटर है, वह ग्रेन्स से आना है। इस साल मिनिस्ट्री और जो उनकी ऑयल मार्केटिंग कंपनीज हैं, उनको करीब 193 करोड़ लीटर की सप्लाई होनी थी। इसमें से 18 करोड़ लीटर ग्रेन्स से आना था, जो ग्रेन्स बेस्ड डिस्टिलरीज थीं, उससे करीब 11 से 12 करोड़ लीटर जा पाएगा। उसके लिए वे लोग ब्रोकन राइस का इस्तेमाल कर रहे हैं। यहाँ पर एक चर्चा आई, उसमें यह बताना बहुत आवश्यक है कि हमारा जो हजारों टन गेहूँ और चावल है, वह खराब हो जाता है। यह स्थिति आज से करीब 15 साल पहले थी। आज की तारीख में हमारा जो प्रकाशित डेटा है, वह वेबसाइट के ऊपर है। उसमें सिर्फ 0.004 परसेंट का फूड ग्रेन डैमेज होता है। करीब ढाई लाख करोड टन का हमारा जो स्टॉक है, उसमें से करीब 0.004 परसेंट है। जो भंडारण की कैपेसिटी है, उसके बढ़ने की वजह से ऐसा हुआ है। अभी हम जो ओपेन में देखते हैं, वह वास्तव में सिर्फ गेहूँ के लिए एक स्कीम है। इसको हम कैप कहते हैं। उसमें टेम्परेरी मूवमेंट के लिए गेहूँ होता है, जो प्रोक्योर किया गया, लेकिन उसका स्टोरेज नहीं होना है, बल्कि वह तुरंत डिस्ट्रीब्यूशन के लिए मूव हो जाना है। उसको कवर्ड एरिया प्लिन्थ में रखा जाता है। इसके लिए इस समय करीब 150 लाख मीट्रिक टन की कैपेसिटी है। जो टोटल कैपेसिटी है, वह करीब 816 लाख मीट्रिक टन की है।

महोदय, यहाँ पर एक तीसरा महत्वपूर्ण प्वाइंट उठा था कि हम इस स्कीम को कैसे ला रहे हैं। हमने जो ग्लोबल सिचुएशन देखी है, उसको देखते हुए यह अहसास हुआ कि हम गन्ने से 550 करोड़ लीटर ही इथेनॉल बना सकते हैं। यह जो 450 करोड़ लीटर है, यह हमें ग्रेन्स बेस्ड फीड स्टॉक को यूज करना है। अगर माननीय सदस्यों ने कल और आज का मेरा ट्विट देखा होगा तो हमारा जो राष्ट्रीय गन्ना संस्थान है, वहाँ पर जो टेक्नॉलजी की बात हो रही थी, उसके तहत कल ही हमने एक स्मार्ट यूनिट का उद्घाटन किया है। यह मल्टिपल फीड को यूज कर सकता है। वहाँ पर लेटेस्ट टेक्नोलॉजी को प्रयोग में लाया गया है। इससे

हम इंडस्ट्री को एजूकेट कर सकते हैं। उसमें हम ग्रेन और शुगरकेन को भी यूज कर सकते हैं। सीजन में जिस समय जो भी फीड स्टॉक उपलब्ध हो, उसको डिस्टिलरी इस्तेमाल करके आपको आउटकम दे देगी। अब हमारी कोशिश है कि जो ब्रोकन राइस है, उसको हम पहले इस्तेमाल करें। इस समय हमारी डिस्टिलरीज की कैपेसिटी करीब 260 करोड़ लीटर की है। हम 550 करोड़ लीटर शुगरकेन से करेंगे और जो 450 करोड़ लीटर है, उसमें से 260 करोड़ लीटर की हमारी वर्तमान कैपेसिटी है। बाकी बैलेंस कैपेसिटी हमें अभी बढ़ानी है।

56. Elaborating about the capacity expansion of sugar based distilleries for ethanol production, during the oral evidence, the representative of the DFPD made the following submission:

"...जिस स्कीम का जिक्र आपने किया था, वहां पर हमने सितम्बर में एक महीने के लिए विंडो खोली थी और उसमें करीब दो सौ एप्लीकेशंस आई हैं। इसके पहले जो हमारे पास एप्लीकेशंस आईं थी, उसमें से 70 प्रोजेक्ट्स एप्रूव हुए थे। उसमें जो इनवाल्व्ड लोन था, वह 3,583 करोड़ रुपये का था। उसमें से 1,700 करोड़ रुपये का लोन डिसबर्स हो चुका है। उसके माध्यम से करीब 114 करोड़ लीटर की कैपेसिटी ऐड हो जाएगी। पूरे देश में जो मैनुफैक्चरर्स हैं, जो डिस्टलिरीज़ की यूनिट्स को लगाने के लिए, इंस्टालेशन के लिए जो मशीनरी बनाते हैं, उनके साथ भी हमने चर्चा की है और उनको इसके लिए पहले से तैयार किया है की इस स्कीम के आने की वजह से इंडस्ट्री को भी मशीनरी, इक्विपमेंट सप्लाई करने में अपनी कैपेसिटी बढ़ानी होगी। उन लोगों ने यह आश्वासन दिया है की 1 साल के अंदर अपनी इस कैपेसिटी को करीब 50 पर्सेंट बढ़ा देंगे और हमारी सप्लाई की वजह से जो आपका ब्लेंडिंग का काम है, उसमें कोई रुकावट नहीं आएगी। जो हम कमटिमेंट दे रहे हैं, जो आपने अभी इंटरमिनिस्टीरियल कमेटी का जिक्र किया, वह इसी महीने में स्थापित हुई है, लेकिन इससे पहले भी इनफार्मल तौर पर उनकी आलमोस्ट हर 15 दिन में एक मीटिंग हो जाती है"।

VII. SECOND GENERATION (2G) ETHANOL

57. With an objective to augment ethanol supplies, the Government allowed procurement of ethanol produced from other non-food feedstock besides molasses, like cellulosic and lignocellulosic materials including petrochemical route.

58. In furtherance of this decision Oil PSUs have planned to establish twelve 2G Ethanol Bio-refineries in 11 states of the country with an overall capacity of 1100 Kilo Litre per Day (KLPD) with an overall investment of Rs. 14,000 crore. These plants are being set up as under:

Company	Location	Capacity (KLPD)	Feed Stock
IOCL	Panipat (Haryana)	100	Rice straw
	Gorakhpur (UP)	100	Rice Straw
	Dahej (Gujarat)	100	Cotton Stalk; MSW being explored

BPCL	Bargarh (Odisha)	100	Rice straw
	Bina (M.P.)	100	Wheat & Soya stalk
	Bhandara (Maharashtra)	100	Rice Straw
HPCL	Bhatinda (Punjab)	100	Rice straw/cotton stalk
	Badaun (UP)	100	Rice straw/bagasse
	Muzzafarpur (Bihar)	3 (Demo Plant)	Rice straw
	East/West Godavari (AP)	100	Rice straw/maize
NRL	Numaligarh (Assam)	185	Bamboo
MRPL	Davangere, (Karnataka)	60	Corn Cob

These projects are in construction stage and projects at Panipat, Haryana (IOCL), Bhatinda, Punjab (HPCL), Bargarh, Odisha (BPCL), Numaligarh, Assam (NRL) are in advance stages of progress.

59. Further, Government has launched “Pradhan Mantri JI-VAN (Jaiv Indhan-Vatavaran Anukool fasal awashesh Nivaran) Yojana” for providing viability gap funding to provide initial thrust to create 2G ethanol capacity in the country and attract investment in this sector. In this scheme, financial support to twelve Integrated Bio-ethanol Projects using lignocellulosic biomass & other renewable feedstock with total financial outlay of Rs 1969.50 crore for the period 2018-19 to 2023-24 will be provided along with support to ten demo projects for 2G technology.

60. Financial assistance to 4 commercial projects at Panipat, Haryana (IOCL), Bhatinda, Punjab (HPCL), Bargarh, Odisha (BPCL), Numaligarh, Assam (NRL) and one demonstration project of Indian Oil at Panipat, Haryana has been approved under this scheme.

61. Asked by the Committee about the progress in setting up 2G ethanol plants in various states of the country in general and NCR in particular, the Ministry of PNG in its written reply stated as under:

> "Detailed Feasibility Report (DFR) of some projects has been completed by Oil PSUs and Environment Clearance for some projects has already been obtained. These plants are expected to be completed in 3 to 4 years. Indian Oil Corporation Limited is setting up a 100 Kilo litre per day 2G ethanol project in Panipat, Haryana which is in NCR. Projects at Panipat (Haryana), Bathinda (Punjab), Numaligarh (Assam), Bargarh (Odisha) are in advance stage”.

62. During the oral evidence, the representative of the MoPNG submitted the following information regarding 2G ethanol plants:

"सर, दूसरा एक प्रश्न था कि 2-जी के जो प्लांट्स हैं, वे 11 राज्यों में 12 प्लांट्स लग रहे हैं। इसका विवरण है, जिसमें पांच प्लांट्स कंस्ट्रक्शन की बहुत उन्नत स्टेजेज़ पर हैं, जिसमें से एक पानीपत में आईओसीएल लगा रही है, भटिंडा में एचपीसीएल लगा रही है, बारगढ़, ओडिशा में बीपीसीएल लगा रही है। नुमालीगढ़, असम में एनआरएल नाम से हमारी एक कम्पनी है, वह लगा रही है।

यह इसकी प्रगति है। 12 प्लांट्स में धीरे-धीरे और कार्य हो रहे हैं, जैसे ईसी, लैंड लेना और बाकी काम हो रहे हैं। यह थोड़ा लम्बा प्रोजेक्ट होता है। इसमें तीन-चार साल लगते हैं।

....नुमालीगढ़ जनवरी, 2021-22 में पूरा हो जाएगा। बाकी भटिंडा, पानीपत दिसम्बर, 2022 तक पूरा हो जाएगा, क्योंकि उसमें लैंड के कुछ इश्यूज़ आ रहे हैं। जैसे भटिंडा में बीच में एक लैंड नहीं मिल पा रही है, जहां पर वाटर की पाइप लाइन जाएगी। उससे थोड़ा उसमें विलम्ब हो रहा है"।

63. Asked by the Committee about the research and development activities undertaken to augment the feedstock production potential in the country, the DAC&FW stated as under:

"It is informed that DACFW has been working with Indian Institute of Petroleum (IIP-CSIR) Dehradun which is doing research on deriving bio fuel from tree borne oilseeds. The selected species including jatropha, karanj, neem, mahua, nahor are being encouraged to be grown by farmers. Agri-Based Biofuel Stakeholders 'Consultative Workshop has been organized jointly by IIP-CSIR, Dehradun and DAC & FW, New Delhi at two different places; (i) New Delhi and Mohali, Punjab under SMAF scheme.

Bio-CNG & Bio- Ethanol can be made from bamboo including leftovers in the Bamboo processing centers. MoP&NG, one of the 14 partner Ministry/ Department under National Bamboo Mission provides technical support and policy frame work for development of bio-fuels and promote use of bamboo as raw material for bio-fuel. A bamboo based 2G ethanol plant is coming up at Numaligarh Refinery Ltd (NRL) Assam for which the plans for raising dedicated bamboo plantations are being worked out by NRL with NER States for e.g. Assam is setting up dedicated FPOs for the purpose

DAC and FW is implementing Sub-Mission on Agroforestry (SMAF under National Mission for Sustainable Agriculture (NMSA) since 2016-17 as part of the recommendation of the National Agroforestry Policy 2014 to promote plantation on farmlands. The scheme is being implemented in the 20 States and 2 UTs which have liberalized transit regulations for selected tree species. The mission interventions has main objectives to expand coverage under Trees Plantation suited to local agro -climatic condition, growing tress on farmlands, Peripheral and Boundary Plantations and Promoting various Agro forestry practices/models suited to different agro ecological regions and land use conditions that will enhance livelihood resources by creating additional income opportunities for farmers; Bio-diversity/Environmental protection and supplement to livestock farming; Help

facilitate Adaptation and Mitigation efforts in climate change and Productive use of waste and degraded lands".

64. Explaining the 2G ethanol plants planned by PSU's under MoPNG, the represntative of the MInistry made the following submission during oral evidence:

"...आईओसी तीन टू-जी एथेनॉल प्लांट्स बना रही है। बीपीसीएल के भी तीन प्लांट्स ओडिशा के बरगढ़, बीना और भंडारा, महाराष्ट्र में बन रहे हैं। एचपीसीएल के भी तीन प्लांट्स भटिंडा-पंजाब, बदायूं-यूपी, मुजफ्फरपुर-बिहार में बन रहे हैं, ये डेमो प्लांट्स हैं और ईस्ट-वेस्ट गोदावरी, आंध्र प्रदेश में बन रहे हैं। एनआरएल का प्लांट नुमालीगढ़ में बन रहा है और एमआरपीएल का प्लांट देवनगिरी में बन रहा है। ये पीएसयूज टू-जी एथेनॉल प्लांट्स लगा रहे हैं। एक प्रश्न यह था कि पानीपत में जो प्लांट बन रहा है, उसका फीड कितना होगा? वहां 100 केएल प्रति दिन एथेनॉल बन रहा है। उसकी फीड्स स्टॉक लगभग 700 टन प्रति दिन होगा, that is agricultural waste".

सर, यहाँ पर बैम्बू की बात हुई थी। That is 2G ethanol. असम में नुमालीगढ़ रिफाइनरी है, उसमें बायो इथेनॉल के प्लांट का काम ऑलरेडी शुरू हो चुका है और अगले साल तक कमीशन हो जाएगा। उसके रिजल्ट्स के बेसिस पर किसानों का बहुत फायदा रहेगा, क्योंकि उनको बहुत अधिक मात्रा में बैम्बू की सप्लाई चाहिए। उसमें असम, मणिपुर, मेघालय और मिजोरम से एमओयू हो चुका है। असम को बोला गया है कि आप एफपीओज गठित कीजिए, जो सिर्फ उन्हीं के लिए बाँस उगाऐंगे। उसमें बायो इथेनॉल की भी वायब्लिटी और इकोनॉमिक्स हो जाएगी और किसानों का भी फायदा होगा और पीएनजी मंत्रालय उसको और ज्यादा एक्सपेंड करेगा"।

VIII. IOC R&D BIOFUELS DEVELOPMENT ACTIVITIES IN LAST 5 YEARS

(a) 2G Ethanol Technology

65. DBT IOC Centre at IndianOil R&D Centre has developed an indigenous technology for conversion of Lignocellulosic biomass to 2G ethanol at 250 kg/day pilot plant scale. This pilot plant was commissioned with technical assistance from National Renewable Energy Laboratory (NREL), a US department of energy lab & global leader in second generation biomass to ethanol projects. The centre has optimized pretreatment process based on acid technology to minimize the cost of chemical w.r.t similar acid based technologies. DBT IOC Centre has integrated its pretreatment followed by Simultaneous Scarification and co-fermentation (SSCF) using indigenously developed low cost and efficient enzyme cocktail. The centre is putting up for integrated 2G ethanol demonstration plant of 10TPD (dry biomass basis) scale with onsite enzyme production at Panipat to establish process at higher scale by Q4 2021.

2G Enzyme Technology

66. DBT IOC Centre at IndianOil R&D Centre has developed a cost effective, high titer and high performance enzyme technology tailored for a given biomass pretreatment. The enzyme cocktail is based on a fungal platform and consists of all essential enzymes like endo-glucanases, exo-glucanases, Beta-glucosidases and relevant auxiliary enzymes. The enzyme production was scaled up in 5 Lit & 100 litre bio-reactor using optimized media and carbon sources at the centre. The enzyme technology has further been demonstrated and established successfully in 5000Lt bio-reactor at third party using commercial grade chemicals with excellent productivity (> 100 FPU/L/Hr) and activity (> 10 FPU/ml). The hydrolytic performance of DBT-IOC Centre enzyme at 12 TPD 2G ethanol demo plant is comparable to world's best commercial preparations. IOCL has planned onsite production of indigenous enzyme in the 10TPD Demo plant at Panipat. Based upon the success of demo plant, commercial plant for onsite production of enzyme would be set up.

Carbon Dioxide to high value lipids technology

67. DBT-IOC Centre for Advanced Bio-Energy Research at IndianOil R&D has developed a novel 3rd Generation Bio-fuel technology by integrating the LanzaTech USA anerobic gas fermentation technology to convert carbon dioxide into acetic acid and IOC (R&D) aerobic fermentation technology to convert acetic acid to lipids (algal oil) including highly valuable Omega 3-fatty acids (DHAs). The lipids are then trans-esterified to esters followed by separation of Omega 3-fatty acids (DHAs) esters as high value product & remaining lipid esters are used as biodiesel fuel. This makes the overall process economically feasible. DHAs esters are essential components of nutrient formulation for children, adults and shall help in combating childhood malnutrition. The DBT-IOC centre has put up world's first pilot facility at IOC R&D, Faridabad at 100 lt reactor scale to sequestrate about 10 kg/day of CO_2. Currently data is being generated in the pilot plant for Techno-economic Analysis.

Biomethanation Technology for conversion of organic waste/biomass residues to compressed biogas (CBG)

68. The biomethanation technology developed by Indian Oil Corporation R&D Centre, has the ability to utilize diverse range of waste as feedstock, from simple processed food waste to complex agriculture residue, to produce **higher biogas yields** having **high methane content** with significantly low retention times. The following activities have been undertaken at IOC R&D in last 5 years.

- Development of enviro-tolerant inoculant producing higher biogas with high methane and reduced CO2 content. The selective biocatalyst developed by IOC R&D has the following advantages.
  - Suitable for multiple feedstock (feed agnostic)
  - Higher biogas yields ,High methane content
  - *In situ* conversion of CO2 to methane
  - Can withstand wide range of pH and temperature
  - Can be retrofitted with any exiting process
- Further to that, IOC R&D developed an indigenous, efficient, economic biogas upgradation/purification technology for producing CBG from raw biogas
  - Cost effective method compared to existing technologies
  - Low energy requirement for CO2 separation
  - Economic benefit of CO2 through industrial applications
- The biomethanation technology has been demonstrated at various locations and different scales (50 kg to 200 TPD) as well as complete technology or retrofit to existing plant.
- A 5TPD CBG plant completely based on IOC R&D technology is in operation adjacent to R&D centre, Faridabad and following are the upcoming plants based on IOC R&D technology
  - 100 TPD two-stage CBG plant based on cattle dung at Jaipur
  - 200 TPD single stage CBG plant based on paddy straw at Gorakhpur

Electro-biocatalytic process for conversion of CO2 into fuels and chemicals

69. IOC R&D has developed a novel electro-biocatalytic process based on the electrode assisted biological method to convert CO2 into fuel molecules like methanol, ethanol, butanol etc. In this approach, bioelectrochemical system (BES) comprising of biofilm containing select group of specific microbes anchored at customized cathode surface i.e., biocathode are used as a transformation platform. Energy required for the reduction of CO_2 can be supplied through renewable sources like solar.

Advantages of the process

- CO_2 capture and conversion akin to plant photosynthesis
- Process requires low energy input without external hydrogen source

- Process is tailored for desired product slate i.e., mixture of alcohols/drop in fuels after separation of organic acids

70. To achieve the envisaged target of synthesizing 1 Kg product/h, IOC R&D has entered MoU with M/s VITO, Belgium. Major developments in the last 5 years in this project are as follows

- Developed potential microbial blend having ability to convert CO2 to Ethanol and Butanol through rigorous microbial selection process
- Established efficient process at lab-scale and obtained required data for up scaling.
- Designed world's first pilot scale BES stack in 3 different novel designs based on lab-scale data
- Installation and commissioning of the pilot scale BES stacks of 1 Kg product/h from CO2
- Operation of pilot stacks being carried out to achieve the envisaged targets and also to generate the data required for scale-up of the concept and TEA.

71. Explaining about the R&D efforts of IOC during the oral evidence, the representative of the PSU made the following submission:

> "....पानीपत रिफाइनरी में एक 2जी प्लांट तो लग ही रहा है, जैसा सेक्रेटरी, संयुक्त सचिव साहब ने बताया था, हम लोग एक 3जी प्लांट भी लगा रहे हैं। रिफाइनरी की जो वेस्ट गैसेज़ हैं, उससे यह बनेगा। यह देश में इस तरह का पहला प्लांट है।
>
> ..यह 600 करोड़ रुपये की इन्वेस्टमेंट का प्लांट है। सीओटू (CO2) जो रिफाइनरी से निकलती है और सीओ (CO) को मिलाकर इथेनॉल बनेगा, इसकी अगस्त, 2021 में कमीशनिंग होगी। यह एक बड़ा अचीवमेंट होगा, अगर ऐसा होता है तो सभी रिफाइनरीज में लगने के लिए इसका काफी स्कोप है। जो अभी चटर्जी जी ने कहा था, अबाउट ओखला प्लांट, उसकी मैं आपको एक समीक्षा देना चाहता हूँ कि यह 50 टन जो म्युनिसिपल सॉलिड वेस्ट है, आपका जो पॉइंट था, वह यह यूज करेगा और plasma enhanced gasification एक नई टेक्नोलॉजी है, इसके तहत यह प्लांट बनेगा। फर्स्ट प्लांट में हमने क्या किया है, एनटीपीसी के साथ मिलकर हम इलेक्ट्रिसिटी बनाएंगे, जो हम ग्रिड में डाल देंगे। अगर यह एक्सपेरिमेंट सफल होता है, हमें पूरी उम्मीद है कि यह सफल होगा, उसके बाद जो यह सिन गैस बनेगी, उससे लगभग 350 करोड़ लीटर्स, अगर हम 50 परसेंट इस देश का जो म्युनिसिपल सॉलिड वेस्ट है, अगर हम उसे टैप करें, केवल 50 परसेंट तो 350 करोड़ लीटर इथेनॉल बनेगा, जो पेट्रोल का लगभग 10 परसेंट रिक्वायरमेंट होगा। इसकी पोटेंशियल बहुत हाई है, इसीलिए हम इसमें पूरी तरह से आगे जा रहे हैं। रही बात हमारा एक और प्लांट आने की, वह गोरखपुर में आ रहा है, उसे आईओसी खुद लगा रहा है। वह गोबर वेस्ट पर आधारित है। वह गैस बनाएगा। वह प्लांट हमारी आरएंडडी टेक्नोलॉजी के तहत ही बन रहा है"।

"माननीय सभापति महोदय, आपके द्वारा यह भी कहा गया है कि कुछ कृषि विश्वविद्यालयों से भी टाईअप किया जाए, ताकि इसमें रिसर्च हो सके और हम इसमें कुछ आगे बढ़ सकें। हम उसके लिए भी बातचीत कर रहे हैं। इसमें ज्यादातर रोल कृषि मंत्रालय का है, क्योंकि इसमें प्रोडक्शन की बात है कि किस प्रकार से प्रोडक्शन होना चाहिए। परंतु हम उनके साथ भी बैठक करके इसको आगे ले जाने का प्रयास कर रहे हैं"।

72. Elaborating on the initiatives undertaken in the field of waste to energy, the representative of IOCL during the deposition on 11 September, 2020 submitted as under:

"म्युनिसिपल सॉलिड वेस्ट से संबंधति प्रश्न था। I am very happy to tell you कि एनटीपीसी आईओसीएल ने ज्वाइंट वेंचर बनाया है, along with South Delhi Municipal Corporation. हम लोग एक डेमो प्लांट लगा रहे हैं, जिसके लिए टेक्नोलॉजी का सेलेक्शन हो गया है। यह यूएस की कंपनी है - इनर सॉल। हम एक नई तरह की प्लाज्मा टेक्नोलॉजी से यहां बिजली बनाएंगे। That electricity will be utilised to put in the grid. यह एक्सपेरिमेंट सफल होता है, तो इससे हम लोग सीनगैस बना सकते हैं। सीनगैस से एथेनॉल गैस बनाने का भी पोटेंशियल है। Work already has started and within 1 ½ years, यह पूरा होने की संभावना है"।

IX. BIO DIESEL

Bio Diesel Blending Programme

73. MoP&NG announced a Biodiesel Purchase Policy which became effective 1st January 2006. On 10.08.2015, Government allowed direct sale of Biodiesel (B100) for blending with diesel to Bulk Consumers such as Railways, State Road Transport Corporations. On 29.06.2017 Government allowed sale of biodiesel to all consumers for blending with diesel.

Objectives of the Biodiesel Policy

74. The Biodiesel Purchase Policy of 2009 of the Ministry of Petroleum & Natural Gas is committed to taking forward the National Common Minimum Programme (NCMP) of the Government of India, stretching across the various focus areas identified therein, while ensuring the basic principle for governance of economic reforms with a human face. The Ministry is *inter-alia* committed to meeting the social objectives of NCMP and enhancing energy security. One of the critical elements for achieving the objective of energy security is the development of alternative sources of energy including bio-fuels.

Bio-diesel can be made from virgin or used vegetable oils and animal fats. Bio-diesel is an environment friendly fuel, which has almost no sulphur, no aromatics, and has about 10% built-in oxygen. Blending of bio-diesel with diesel would result in the reduction of un-burnt hydrocarbons, Carbon Monoxide and particulate matter in auto emissions, and will be in line with the objectives of the Auto Fuel Policy of the Government.

75. Government has notified Guidelines for sale of biodiesel for blending with High Speed Diesel for transportation purposes on 30.4.2019. Through this Notification Government has granted permission exclusively for sale of biodiesel (B-100) only and not for any mixture thereof of whatever percentage.

OMCs have procured 10.56 cr. liters of Bio-diesel for blending with HSD during the period April, 2019 -March, 2020.

76. Presently, bio-diesel is being produced in the country primarily from imported palm stearin oil. In order to phase-out palm stearin, and as a measure towards import substitution, it has been decided to promote domestically available used cooking oil (UCO) as the feedstock.

77. UCO has been identified as a potential raw material for biodiesel production in National Policy on Biofuels-2018. UCO can be collected from Bulk Consumers such as hotels, restaurants, canteens, etc. for conversion.

78. Oil Marketing Companies (OMCs) have floated an Expression of Interest (EoI) for procurement of Biodiesel produced from UCO across 200 locations in the country. Till 01.07.2020, 30 EoIs have been received by the OMCs for setting up 49 Biodiesel plants with a capacity of 1015 MT/day. Under the scheme, OMCs will pay biodiesel producers ₹51 per litre in the first year, ₹52.7 per litre in the second, and ₹54.5 per litre in the third year (excluding transportation and GST)

79. When the Committee asked as to whether there is any proposal to use tallow (animal) fat along with palm oil and cooking oil for production of bio-fuels, the Ministry submitted the following:

"At present, OMCs are not involved in in-house production of Biodiesel. All type of Biodiesel is being sourced through industry tender from existing domestic producers. Currently most of the biodiesel plants are being operated on multi-feedstock".

80. Asked about the of jatropha plantation that was to be used for biodiesel, the following reply was given by the MoPNG:

"Due to viability issues (low yield), all Jatropha plantation projects have already been closed by OMCs.

Details of various sources of Biodiesel along with their yields

Biodiesel can be produced from non-edible vegetable oils (jatropha, karanjia), Palm stearin, used cooking oil. According the various reports available on the various websites following table depicted the source wise conversion percentage of biodiesel.

Feed Stock	**Conversion % ***
Tree born oil seeds	25-43
Acid oil	90-95
Palm Stearin Oil	95-98
Animal Tallow	98-100
Used Cooking Oil	90-95

**Source: OMCs*

81. When the Committee desired to know the progress of biodiesel production from Used Cooking Oil (UCO) by OMCs, the following reply was given:

"UCO has been identified as a potential raw material for production of biodiesel. OMCs have floated Expression of Interest (EoI) for procurement of Biodiesel produced from UCO across 200 locations in the country. Under this initiative, a total of eleven EOIs are being floated by the OMCs from 10.08.2019 to 09.11.2020. So far, OMCs have received offers for setting up 60 biodiesel plants from entrepreneurs for a cumulative annual capacity of 47 Core litres".

According to the Biodiesel Association of India (BDAI) few plants have been functional in India since 2003.

82. Elaborating on the bio diesel programme, the representative of the Ministry submitted the following during the oral evidence:

"बायोडीज़ल के बारे में मैं थोड़ा सा बता देता हूँ कि बायोडीज़ल में भी हमने एक टारगेट पांच पर्सेंट लिया है, लेकिन अभी बायोडीज़ल कम्पलसरी नहीं हुआ है। जहां तक एथेनॉल है, उसका तो हमने कहा है कि हमारी ऑयल कम्पनीज़ को लेना ही लेना है। लेकिन बायोडीज़ल अभी कम्पलसरी नहीं हुआ है। बायोडीज़ल का जो इस समय हमारे पास मेन सोर्स है, जिससे बायोडीज़ल आ रहा है, वह यूज़्ड कुकिंग ऑयल है, सबसे बड़ा जो सोर्स है। परंतु उसकी भी लिमिटेशंस हैं। उसमें जो हम चाह रहे हैं कि हम ज्यादा पर्सेंटेज पर जाएंगे, वह नहीं हो पा रहा है, क्योंकि बायोडीज़ल में अभी हमारी उपलब्धता बहुत कम है, बहुत ज्यादा आगे हम बढ़ नहीं पाए हैं। बाकी जो बायोडीज़ल बनाने के तरीके हैं, उसमें थोड़ी सी कॉस्ट ज्यादा आ रही है। जो एग्रीकल्चर रेसिड्यू से बायोडीज़ल बनता है, उसमें कॉस्ट ज्यादा आ रही है। एग्रीकल्चर रेसिड्यसू से जो सबसे अच्छी और ठीक कॉस्ट से बनती है, वह कम्प्रेस्ड बायोगैस ही है। कम्प्रेस्ड बायोगैस सबसे इकोनॉमिकली वायेबल और ऐसा प्रोडक्ट है जो कि किसानी से बन सकता है। इसमें मल्टीपल टाइप्स ऑफ वीड्स लग सकते हैं। इसमें हम चाहे गोबर से ले लें या एग्रीकल्चर रेसिड्यू से ले लें, कई चीज़ों से यह कम्प्रेस्ड बायोगैस बन सकती है, लेकिन बायोडीज़ल की अभी तक जो भी रिसर्च हुई है, उसके हिसाब से कुछ लिमिटेशंस हैं और उसका प्राइस भी अधिक आ रहा है। हमारी कुछ ऑयल मार्केटिंग कम्पनीज़ तो प्लांट्स लगा रही हैं, लेकिन जिस लैवल पर हम जाना चाहते हैं, उस पर हम जा नहीं पा रहे हैं। माननीय सदस्य महोदय ने बताया था कि अब जो एनिमल टैलो है, वह एक और बहुत अच्छा सोर्स है बायोडीज़ल बनाने के लिए। परंतु शायद जो हमारा सपोर्ट प्राइस है, वह कुछ कम है। यूरोप में बायोडीज़ल मंहगा बिकता है, इसलिए यह ज्यादा जो टैलो है, यह एक्सपोर्ट हो जाता है। एक्सपोर्ट पर हमारी कोई रिसट्रिक्शन नहीं है। एक्सपोर्ट ऑफ बायो डीज़ल पर हमारी रिस्ट्रिक्शन है। अभी जो इंडस्ट्री है, वह कह रही है कि या तो आप रॉ मटीरियल का एक्सपोर्ट भी बंद कीजिए या हमको ही एक्सपोर्ट अलाऊ कर दीजिए तो कम से कम इंडिया में इंडस्ट्री ज्यादा आ जाएगी तो यह भी एक मुद्दा है। परंतु आज जो सिचुएशन है, उसमें बायोडीज़ल को बनाने में जो कॉस्ट आ रही है, वह थोड़ी अधिक है, इस वजह से इसमें बहुत ज्यादा अभी प्रोग्रेस हुई नहीं है। क्योंकि ऑयल मार्केटिंग कम्पनीज़ भी एक लिमिट तक ही प्राइस दे सकती हैं। उनको भी कम्पेयर करना है कि जो उनका प्रोडक्ट है, वह कितने में बिकता है और उस पर टैक्सेज़ क्या हैं और किस प्रकार से वह बिक पाएगा, उसी हिसाब से वे प्राइस दे पाती हैं। वे बहुत अधिक प्राइस देंगी तो फिर वह भी सस्टेनेबल नहीं हैं। उसको देखते हुए बायोडीज़ल अभी थोड़ा सा हमारे लिए एक चैलेंज बना हुआ है"।

83. Elaborating further on used cooking oil as a source for bio diesel, the representative of the MoPNG made the following submission:

"सर, यूज्ड कुकिंग ऑयल का भी सतत की तरह एक यूआई प्रारम्भ किया गया, जो 200 शहरों में लगाया गया है। लेकिन यूज्ड कुकिंग ऑयल में सबसे बड़ी चैलेंज कलेक्शन की आ रही है, इको सिस्टम नहीं है। पहले हम लोगों ने दस टन की एक लिमिट रखी थी, उससे नीचे वालों को अलाऊ नहीं किया था। लेकिन बाद में हम लोगों ने हटा दिया, क्योंकि इससे क्या हो रहा था कि जैसे छोटे एन्टरप्रेन्योर्स हैं, वे नहीं आ पा रहे थे, तो वे भी आने लगे हैं। यह पिछले साल अगस्त में शुरू की गई थी। इसमें करीब 50 यूआई आ चुकी हैं। उसका पोटेंशियल करीब 38 करोड़ लीटर है"।

X. COMPRESSED BIO GAS (CBG)

84. Bio-gas is produced through a process of anaerobic decomposition from waste / bio-mass sources like agriculture residue, cattle dung, sugarcane press mud, municipal solid waste, sewage treatment plant waste, etc. After purification, it is compressed and called Compressed Bio-Gas (CBG) which has more than 90 % methane content and the same can be utilized as an environment-friendly fuel in usage of transport & industrial/commercial sector.

85. Conversion of waste/ bio-mass into CBG multiple benefits viz. reduction of natural gas import, reduction of GHG emission, reduction in burning of agriculture residues, remunerative income to farmers, employment generation, effective waste management etc.

Sustainable Alternative Towards Affordable Transportation (SATAT)

86. Sustainable Alternative Towards Affordable Transportation (SATAT) was launched on 1st October 2018 aiming to establish an ecosystem for production of CBG from various waste/ biomass sources in the country. SATAT has envisaged developing 5000 CBG plants with total CBG production capacity of 15 Million Metric Tonne Per Annum (MMTPA) i.e. equivalent to 54 MMSCMD of gas by 2023.

I. Under SATAT, Oil and Gas Marketing Companies IOCL, BPCL, HPCL, GAIL and IGL have been advised to invite Expression of interest (EoI) to procure Compressed Bio Gas (CBG) from potential CBG plant entrepreneurs. This initiative has offers a potential for investment of about Rs. 1.75 lakh crores (5000 Plants) and generating about 75,000 direct employment opportunity. CBG plants will also produce a by-product i.e. bio-manure and the same can be utilized in farming sector.

II. Till June 2020 Oil and Gas Marketing companies have issued 515 Letters of Intent (LoIs) to entrepreneurs for production and supply of CBG across the country. At present, 3 CBG plants located at Pune & Kolhapur in Maharashtra and Salem / Namakkal, Tamil Nadu are operational and producing CBG.

87. Asked by the Committee about the steps being taken by Ministry/OMCs to promote Compressed Bio Gas (CBG) plants in the country, the Ministry of Petroleum and Natural Gas made the following submission:

"Ministry/ Oil Marketing Companies have taken following steps to promote consumption of CBG in the country:

A. The Ministry has launched Sustainable Alternative Towards Affordable Transportation (SATAT) scheme under which Oil and Gas Marketing Companies (OGMCs) are inviting Expression of Interest from potential Entrepreneurs to set-up CBG plants and offer CBG to OGMCs for marketing through their RO network.
B. For promotion of production and consumption of CBG following enabling mechanism/ steps has been provided under SATAT:

i. Oil & Gas marketing companies are executing long term agreements for off-take of CBG.
ii. Oil & Gas Companies have offered an assured floor price for procurement of CBG with periodic upward revision in procurement price for the period from 1.4.2024 to 31.3.2029.
iii. Bio manures produced from CBG plants has been covered as "Fermented Organic Manure" under Fertilizer Control Order (FCO) 1985 vide notification published on 14th July 2020. Inclusion of Bio slurry under FCO is under consideration with Ministry of Agriculture and Farmers Welfare.
iv. Governor, Reserve Bank of India in his statement on Monetary Policy dated 6.8.2020 has stated that Priority Sector Lending status is also being given to Compressed Bio Gas plants.
v. SBI is working on finalizing a Bank policy for debt funding of CBG projects under SATAT along with IOCL.
vi. Possibilities are also being explored to arrange soft loans for CBG projects from banks and international financial institutions.
vii. Ministry of New and Renewable Energy (MNRE) has extended Central Financial Assistance (CFA) Scheme for FY 2020-21. MoPNG is pursuing with MNRE for phased release of CFA.
viii. MoPNG is also pursuing with Central Pollution Control Board and Ministry of Environment, Forest & Climate Change for categorization of CBG Projects under 'White Category'.
ix. MoPNG is also coordinating with State Government for expediting the progress of SATAT initiative. State Level Committee for implementation and monitoring of SATAT initiative has been constituted in States of Haryana and Punjab.
x. To create awareness among stake holder roadshows, workshops, meetings media campaign etc. are also being conducted by OMCs".

88. When asked by the Committee to spell out the objectives of Sustainable Alternative towards Affordable Transportation (SATAT), The Ministry in its written reply submitted as under:

"SATAT' (Sustainable Alternative Towards Affordable Transportation) scheme for CBG was launched by Ministry of Petroleum & Natural Gas on 1.10.2018. The scheme envisages production of CBG and Bio manure from waste / bio-mass

sources like agriculture residue, cattle dung, sugarcane press mud, municipal solid waste, sewage treatment plant waste, etc.

Production of CBG will boost availability of more affordable transport fuel and also increase the green energy mix, reduce import dependence, create employment, especially in semi urban & rural areas and reduce pollution. This will create value and employment in the rural economy across the supply chain from biomass collection to plant operation.

Usage of CBG shall assist in achieving climate change goals of India as per the Paris Agreement 2015. This shall also be in alignment of flagship schemes of Government of India like Atmanirbhar Bharat, Make in India, Skill India, Swachh Bharat Mission and doubling farmer's income.

89. The Committee sought to know as to whether the Ministry of Agriculture and Farmers welfare has developed any mechanism in place to create awareness among farmers regarding importance of bio-fuels in the country, the Ministry submitted the following:

"Under ATMA program adequate extension is provided to the farmers at grass root level about various agricultural development activities including bio fuel programme. DAC&FW will explore the possibility for engagement of farmers for biomass supply and identification of land for biomass storage and creation of awareness programmes through extension machinery, in consultation with M/o PNG. Efforts would also be made to encourage FPOs and Cooperative societies to set up CBG plants. DAC&FW would also like to be associated in the State Level Coordination Committees for implementation of various initiatives being taken by M/o P&NG".

90. When asked about the incentives provided to farmers for cultivation of feedstocks for biofuel plants in the country currently, the DAC&FW submitted the following its written reply:

"The Department under the Scheme 'Sub-Mission on Agricultural Mechanization (SMAM)' is providing subsidy @ 40% of the cost for purchase of balers which is used for collection of straw in the form of bales that makes transportation and storage easier. During the last 5 years, the Government of Punjab has supplied 188 balers and the Government of Haryana has supplied 190 balers. Considering the requirement to promote the ex-situ uses of paddy straw, the balers have also been included in the revised crop residue management scheme w.e.f. 2020-21 and during the year 2020-21, the State Governments of Punjab, Haryana and Uttar Pradesh have supplied 406, 721 and 138 Balers and Rakes, respectively".

BIO- MANURE / ORGANIC FERTILISER

91. The government has proposed the inclusion of bio–slury under Fertilizer Control Order (FCO) 1985 and bio- manure produced from compressed Bio- Gas (CBG) plants as fermented organic manure under FCO.

92. When asked by the Committee to provide details along with the benefits that may arise out of this order, the Dept of agriculture cooperation and Farmers Welfare submitted the following in its written reply:

> "Indian soils are deficient in organic carbon. Bio-manures are good source of organic carbon and also contain NPK primary nutrient. Specifications of these products are included in the Fertiliser (Control) Order, 1985 (FCO) in order to deliver good quality fertilisers to farmers.
>
> M/s. Indian Oil Corporation had submitted a proposal for inclusion of organic manure in FCO. It was stated in the proposal that M/s Indian oil has developed a technology to produce Compressed Bio gas from Waste/ Bio mass source like agricultural residue, cattle dung, sugarcane, press mud, municipal solid waste and sewage treatment plant waste, chicken litter etc. through an anaerobic process. During the process organic bio manure is produced as a by product.
>
> The above proposal was examined in this Ministry and the organic manure generated through CBG process as fermented organic manure has been incorporated in FCO".

XI. WASTE TO ENERGY PROGRAMME OF MNRE

93. The Ministry of New and Renewable Energy has given the following information:

1. Programme: Ministry is implementing a Programme on Energy from Urban, Industrial, Agricultural Wastes/ Residues and Municipal Solid Waste for recovery of energy in the form of Biogas or BioCNG or Power from Urban, Industrial and Agricultural Waste / Residues such as MSW, vegetable and fruit market wastes, slaughterhouse waste, agricultural residues and industrial wastes & effluents for meeting certain niche energy demands of urban, industrial and commercial sectors in the country.

2. The current scheme was notified on 30.07.2018 and revised on 28.02.2020 where the total budget outlay was increased form Rs. 78 Cr to Rs 480 Cr. The scheme is valid till 31.03.2021.

3. Under the Programme, financial assistance of Rs 4.0 Crore per 4800Kg/day for BioCNG generation (including setting of Biogas plant) in the form of back-ended capital subsidy is provided to CBG projects developers.

4. Salient features of the Programme is given as below:

a) All proposals to be forwarded through Lead bank/ FIs.
b) CFA to be back-ended to CBG projects developers after successful commissioning of the plant.
c) CFA for Expansionary Projects will be considered only for the latest capacity addition.
d) Claims of non-commissioned projects only are considered.
e) Projects which have availed loan will only be considered for grant of CFA (exempted for Govt. entities).
f) CFA will be released to the loan account maintained with the Lead FI.
g) Project Advisory Committee (PAC) to evaluate all proposals.
h) Performance inspection to be done by concerned SNAs.
i) Periodic monitoring of the projects to be carried out by a team comprising representatives from SNAs and experts appointed by MNRE.

5. Procedure for availing the financial assistance

- The developers seeking Government support for their projects will submit proposals to Ministry through Bank/Financial Institutions (on BIOURJA portal: https://biourja.mnre.gov.in).

- A Project Advisory Committee (PAC) for Waste to Energy projects constituted with the approval of Secretary, MNRE under the Chairmanship of Joint Secretary (In-charge), MNRE. PAC will evaluate and recommend the project proposals for financial support.
- The Ministry after necessary financial concurrence issues sanction with the approval of Secretary, MNRE. Based on this sanction/approval the developer can complete their projects as per guidelines of the scheme. The time period for completion of the Bio CNG projects is 24 months.
- The entire CFA will be released to the developer's loan account in the lending financial institution/banks for the purpose of offsetting the loan amount only after successful commissioning of the project.
- The condition of successful commissioning of the Waste to Energy project would, inter-alia, imply operation of the project for three months, including continuous operation for at least 72 hours at minimum of 80% of rated capacity as applicable.

94. On being enquired on the current status of Waste to Energy programme and number of projects set up since the inception of the scheme, the Ministry of New & Renewable Energy, in their written reply stated as under:

"Ministry is implementing a Programme on Energy from Urban, Industrial, Agricultural Wastes/ Residues and Municipal Solid Waste for recovery of energy through Waste To Energy projects in the form of Biogas, Bio CNG, Power, Syngas/Producer gas from Urban, Industrial and Agricultural Waste / Residues such as MSW, vegetable and fruit market wastes, slaughterhouse waste, agricultural residues and industrial wastes & effluents for meeting various applications such as fuel for vehicles, industries for captive energy needs, cooking etc besides generating bio-fertilizers.

The scheme was notified on 30.07.2018 and amended on 28.02.2020 with total outlay of Rs 478 Crores and physical target of 257MWeq. The scheme is valid till 31.03.2021.

As on 31.01.2021, under this scheme, this Ministry has received 62 proposals for seeking CFA under the new Waste to Energy guidelines for installation of cumulative capacity about 295 MWeq projects for generation Biogas, BioCNG and Power. Out of that, sanction of CFA to 16 Waste to Energy projects with cumulative installed capacity of 15.12 MWeq projects have been issued so far whereas 14 projects having total installed capacity of 80 MWeq are under consideration for grant of CFA amounting to Rs 269 Cr. These projects are currently at various stages of implementation".
Sanctioned projects include**:**

Type	**Number of Sanction Project (Nos)**	**Cumulative Capacity (MWeq)**
Biogas Generation	3	3.92
BioCNG Generation	12	10.57
Power generation	1	0.64

95. On being asked to provide the details of new technologies, innovations or best practices that have been developed/supported to treat municipal solid waste into energy, the MNRE, in their written reply submitted as under:

"Ministry supports recovery of power through Incineration / Gasification / Pyrolysis process and energy in the form of biogas through biomethanation process to treat municipal solid waste (MSW) into energy/power. Ministry also supports any new technology as approved by MNRE to treat MSW. However, the State Governments and Urban Local Bodies (ULBs) can choose any technology or method that is best suited to them for processing of solid waste depending upon their geographical expanse, population, waste generated per day, climatic

conditions, resources available like number of Municipal staff, funds, vehicles, etc. to process the Solid Waste generated in the Municipalities."

XII. ROLE OF DEPARTMENT OF FINANCIAL SERVICES (DFS) IN CBG PROJECTS

96. When the Committee wanted to know as to what steps have been taken by the PSU banks under the DFS towards loan to SATAT Projects, a written submission was made by SBI as under:

"SBI Initiatives:
SBI has formulated a Policy for Funding of CBG Projects to take care of the funding requirement of entrepreneurs. The policy has been formulated in consultation with the Ministry of Petroleum and Natural Gas (MoPNG) and the Oil Marketing Companies (OMCs). Key features of our CBG Funding Policy are as under:

- Outlay Rs. 5000 crore for funding CBG Projects under the SATAT Scheme
- Funding will be available to selected entrepreneurs granted LOIs by OMCs subject to Bank's usual due diligence.
- Off take support available from OIil Marketing Companies
- Working with International Agencies to further reduce interest rates
- Debt: Equity of 70: 30 based on project viability.□
- Loan Tenor of 10-12 years with one-year moratorium to take care of initial operational issues the project may face.

Key Enablers for Lending;
Ministry of Petroleum & Natural Gas (MoPNG) to support in:

- Empanelment of Suppliers who will provide the technology for converting Bio-mass to CBG.
- Empanelment of Suppliers of plant and machinery.
- Standarisation of technical specification of plant and machineries.
- Bench marking of cost of equipments to help lenders standardise project cost

Other Enablers
➢□Strengthening Supply chain to ensure round the year supply of bio-waste.
➢□MNRE subsidy to be front-ended to help in smooth implementation of the projects.

97. Explaining the steps taken by the Ministry towards SATAT programme, the representative of the MoPNG submitted the following during the evidence:

"सर, सतत के अंदर हम लोग वेरियस आर्गेनिक मटेरियल यूज करके कम्प्रैस्ड बायो गैस बनाते हैं, जो कि हम ट्रांसपोर्टेशन में यूज कर सकते हैं। इसके अंदर म्यूनिसिपल सॉलिड वेस्ट भी हो सकता है, *एग्रो-*

रेजिड्यूज़ भी हो सकते हैं, *प्रेस मड* भी हो सकता है। इस प्रकार के एग्रीकल्चरल रेजिड्यूज़, यह सब जितना वेस्ट मटेरियल है, इसको यूज करके कम्प्रैस्ड बायो गैस बना सकते हैं।

हमारा प्लान करीब 5000 प्लांट्स वर्ष 2024 तक बनाने का है। आज के दिन हमारे पास करीब 515 एलओआईज़ वेरियस ओएमसीज़ और गैस मार्केटिंग कम्पनीज़ के पास आ गए हैं। उसमें कुछ में जमीन मिल गई है, कुछ में फाइनेंशियल क्लोजर हो गया है। इनके प्लांट्स को लगने में करीबन दो-ढाई साल लगते हैं। इमीजियटली नहीं लगेगा, इसका प्रोडक्शन थोड़े समय के बाद चालू होगा। तीन-चार जगहों पर आईओसीएल ने स्वयं प्लांट्स लगाए हैं। पूना में लगाया है, कोल्हापुर में लगाया है, नामक्कल में लगाया है। इनके आज के दिन कम्प्रैस्ड बायो गैस के सात रिटेल आउटलेट्स हैं। ये लोग बिक्री कर रहे हैं।

जैसे सेक्रेटरी सर ने कहा था as per the requirement of the industry, जो कि पहले कहा था कि बैंक से फाइनेंस मिलने में मुश्किल होती है। हम लोगों ने आज कल एग्रीमेंट आंत्रप्रेन्योर्स से जितने भी हैं, जो पहले तीन साल, चार साल होता था, सारी ओएमसीज़ ने, गैस मार्केटिंग कम्पनीज़ ने बढ़ा कर अब दस साल के लिए कर दिया है। इसके अलावा इन्होंने मिनिमम बेस प्राइस भी फिक्स किया है कि उससे कम नहीं होगा, उससे ऊपर ही जाएगा। If the OMCs and entrepreneurs are agreed on mutually decided agreeable terms, they can go beyond ten years also. That is one thing.

दूसरा, कम्प्रैस्ड बायो गैस के साथ-साथ एक दूसरा बाय प्रोडक्ट आता है, वह आता है बायो मेन्योर। यह हम लोगों ने मिनिस्ट्री ऑफ एग्रीकल्चर के साथ टेक अप किया था कि बायो मेन्योर को भी फर्टिलाइजर कंट्रोल ऑर्डर के तहत लाया जाए, ताकि उसकी कमर्शियल सेल हो सके।

सर, 13 जुलाई को मिनिस्ट्री ऑफ एग्रीकल्चर ने भी बायो मेन्योर को भी फर्टिलाइजर कंट्रोल आर्डर के अंदर नोटिफाई कर दिया है। अब जितने भी कम्प्रैस्ड बायो गैस के प्लांट्स आ रहे हैं, ये गैस के अलावा बायो मेन्योर भी जो बाय प्रोडक्ट आता है, उसकी भी सेल कर सकते हैं।

सर, उसके अलावा मिनिस्ट्री ऑफ न्यू एंड रिन्यूअल एनर्जी की सेंट्रल फाइनेंस असिस्टेंस की स्कीम है। उसके अंदर भी हम लोगों ने इस सतत स्कीम को डाला है कि अगर कोई आदमी प्लांट लगा रहा है, उसको उसके लिए थोड़ी सी मदद मिल सके। मिनिस्ट्री ऑफ न्यू एंड रिन्यूएबल एनर्जी ने भी यह सेंट्रल फाइनेंस असिस्टेंस वाली स्कीम एक्सटैंड की है। इंडस्ट्रीज़ की थोड़ी डिमांड यह भी थी कि प्लांट लगने के बाद मदद मिलने के बजाय यह हो कि फेज़-वाइज मिल जाए। जैसे-जैसे प्लांट बन रहा है तो वह भी इस समय एमएनआरई कंसिडर कर रही है।

सर, दिल्ली का स्टेटस पूछा था। दिल्ली में सात एलओआईज़ इश्यु हुए हैं, जिसमें आईजीएल चार प्लांट्स लगा रहा है, जो कि काउ डंग और फूड वेस्ट पर आधारित है। रिसेंटली एक आईओसीएल, एनटीपीसी और एसडीएमसी के साथ मिलकर इन्होंने ओखला में वेस्ट टू पावर का पायलेट प्रोजेक्ट चालू किया है। ये लोग द्वारका के अंदर जमीन लेकर एक और इस तरह का एग्जामिन कर रहे हैं। वहां पर अगर एमसीडी के साथ कुछ हो सके"।

98. Elaborating further on bio gas plants based on cow dung, the representative of the MoPNG submitted as under during the oral evidence:

"..... सतत हम लोग कामर्शियल स्केल का बड़ा प्रोग्राम लेकर चल रहे हैं। जो आपने सजेस्ट किया है कि विलेज लेवल पर, 100-200 घरों में गैस सप्लाई की जा सके, तो वह गोवर्धन स्कीम के अंडर फिट होता है। उनके साथ अभी हमारी पिछले हफ्ते एक मीटिंग हुई है और उसी में हम वह कैरी फारवर्ड करेंगे। वह बहुत अच्छा प्रोग्राम है।

अर्बनाइज विलेजेज में बच्चियाँ पढ़ गई हैं और अब गोबर को कोई हाथ लगाने के लिए तैयार नहीं है। गोबर सीवर में जाता है, वेस्ट में जाता है। वह गंदगी फैलाता है, प्रदूषण करता है, तो वहाँ वह यूटिलाइज भी हो जाए और लोग उसको बेचना भी शुरू कर देंगे। उसका गोबर भी बिक जायेगा तो उस छोटे से व्यक्ति को, जिसने एक, दो, तीन जानवर रखे हुए हैं, उसे कुछ अर्निंग भी हो जाएगी। इसकी तरफ ध्यान देना चाहिए।

यदि कोई भी प्लांट लगाना चाहे, पूरे देश में, सतत के अधीन तो हमारी बिल्कुल ओपन पॉलिसी है कि वह एप्लाई करे और हम तुरंत एलओआई देने को तैयार हैं। इसमें कुछ ऐसा नहीं है कि हम इसमें टेंडर कर रहे हैं और बोल रहे हैं कि आप कोई प्राइस कोट कीजिए या कुछ कीजिए, ऐसा कुछ भी नहीं है। बैंक्स द्वारा कहा गया कि इसमें आप थोड़ा पीरियड बढ़ाइए। बैंक्स के साथ मैंने स्वयं भी अभी पीछे मीटिंग की थी, जिसमें उनको निवेदन किया था कि आप लोन दीजिए, क्योंकि जिनको एलओआइ मिला है, वे हमारे पास भी आए थे और उनका यही कहना था कि फाइनेंसिंग की दिक्कत आ रही है, क्योंकि बैंक्स को ऐसा लगता है कि किसान अगर उसका रॉ मटीरियल देगा नहीं या कहीं दिक्कत आ जाएगी तो उसको कलैक्ट करना भी बहुत मुश्किल काम है। इसमें कोई राइस हस्क से है। वह पराली बर्निंग वाला इश्यु जो है, वह भी इससे काफी हद तक सुलझेगा तो इसलिए बैंक्स इसको थोड़ा रिस्की मान रहे थे तो हमने पीछे स्टेट बैंक और अन्य बैंकों से भी मीटिंग की थी। स्टेट बैंक ने तो इसके लिए अलग से एक योजना ऑलमोस्ट बना ली है। उन्होंने कहा था कि आप जो एग्रीमेंट करते हैं, जो एश्योरेंस देते हैं, उसका समय बढ़ाइए। तो वह भी हमारी ऑयल मार्केटिंग कंपनीज़ ने मान लिया कि ठीक है, हम इसका समय बढ़ा देते हैं ताकि बैंक्स को यह तसल्ली रहे कि हम इसकी प्रोक्योरमेंट करेंगे ही करेंगे। अन्य जो सरकारी और गैर-सरकारी बैंक्स हैं, उनसे भी हमने निवेदन किया है कि इसकी फाइनेंसिंग वे करें, ताकि ये प्लांट्स लग पाएं"।

99. Elaborating the role of Ministry of Agriculture and Farmers Welfare on SATAT, the representative of the Ministry submitted as under during the oral evidence:

"उसमें एग्रीकल्चर मिनिस्ट्री का शुरू में रोल रहता है और दूसरा हमारा बायो-प्रोडक्ट में फर्टिलाइजर के तौर पर ज्यादा योगदान रहता है। सर, जैसा कि रॉ-मटेरियल की बात हुई थी तो पूरी रेंज रॉ-मटेरियल की है। जैसे एनिमल डंग है, क्रॉप वेस्ट है, बायोडिग्रेडेबल सिटी वेस्ट है। सर, फोरेस्ट लिटर की भी बात हुई थी। मेरे पास जो आँकड़े हैं, उनके अनुसार डिपार्टमेंट ऑफ एनिमल हसबैंडरी ज्यादा अच्छे से बता पाएगा। वर्ष 2012 का जो लाइवस्टॉक सेंसेस हुआ था, उसके हिसाब से हमारे पास सिर्फ लाइवस्टॉक सेक्टर से प्रतिवर्ष करीब 620 मिलियन टन वेस्ट जनरेट हो रहा है। सर, आपको पता होगा कि गोवर्धन स्कीम ड्रिंकिंग वाटर सेनिटेशन विभाग द्वारा चलाई गई है तो उसमें हमारा दो तरह से योगदान हो रहा है। उनके जो कंप्रेस्ड बायोगैस प्लांट्स बन रहे हैं, उसमें एग्री इन्फ्रास्ट्रक्चर स्कीम के तहत फंड कुछ महीने पहले लाँच हुआ था। इसमें 1 लाख करोड़ रुपये का फंड लाँच हुआ है। इसमें बीसीजी को एलिजिबल कैटेगरी बना दिया गया है। इस फंड में तीन परसेंट का इंटरेस्ट सबवेंशन मिलेगा। इसमें अप्लाई करने की प्रोसेस बहुत ही सिम्पल है। Agriinfra.dac.nic.in एक वेबसाइट है, उसमें अपना एन्टरप्रेन्योर या कोऑपरेटिव सेक्टर अपलोड करने के बाद पूरी प्रोसेस मंत्रालय से ही होती है। सर, इसमें बायो-प्रोडक्ट हमारे लिए

बहुत यूजफुल होता है। इसमें जो बायो फर्टिलाइजर और ऑर्गेनिक फर्टिलाइजर निकल रहे हैं और हमारा जो फर्टिलाइजर कंट्रोल ऑर्डर है, उसमें पहले से ही Seri-compost, vermicompost, phosphate rich organic manure, organic manure, bio-enriched organic manure, bonnell इंक्लूड थे। हमारे पास अभी गैस अथॉरिटी और इंडियन ऑयल के प्रपोजल आए थे कि Bio-manure and bio-slurry को भी इंक्लूड किया जाए। आपने जो डिटेल्स दी थी उसके हिसाब से हमने Fermented bio-manure को तो इंक्लूड कर लिया है। Digested bio-slurry बायो सीएनजी प्लांट से निकल रही है, उसका सोलिड निकालकर दूसरा जो लिक्विड निकलता है, उसको भी एफसीओ में लाने का प्रपोजल है। उसमें हमने एडिश्नल स्पेसिफिकेशन्स मांगे हैं। अभी अक्तूबर में लेटर आया था और उन्होंने जो डाटा दिया था, वह पूराना था। उन्होंने बोला है कि नया डाटा लाकर उसको फिर से we will update it. उसके बाद वह एफसीओ में इंक्लूजन के लिए आएगा"।

100. Explaining about the different sizes of CBG plants, the representative of MoPNG during the oral evidence stated as under:

"सभापति महोदय, आपने यह भी कहा है कि इसके प्लांट को लगाने की कीमत 40 करोड़ रुपये से 50 करोड़ रुपये आती है, क्या कुछ छोटे प्लांट्स भी लग पाएंगे, जो कॉमर्शियल स्केल के प्लांट्स हैं, जो बायो गैस बनाते हैं, वे इस साइज के हैं। यदि कोई और छोटा प्लांट लगाना चाहे तो वह अपने घर के इस्तेमाल के लिए छोटा प्लांट भी लगा सकता है। यदि कोई कम्युनिटी स्तर पर प्लांट लगाना चाहे तो थोड़ा बड़ा प्लांट भी लगा सकता है। इस तरह से लगभग हर साइज का प्लांट लग सकता है। इसमें कोई अपने किचन वेस्ट्स से भी गैस बना सकता है, उसके लिए भी टेक्नोलॉजी उपलब्ध है, परन्तु अगर कॉमर्शियल स्केल पर लगाना है तो उसका साइज कुछ बड़ा होना ही चाहिए"।

101. Elaborating about sourcing of raw material for CBG plants, the representative of the MoPNG submitted the following:

"सभापति महोदय, आपने यह भी कहा कि रॉ-मैटेरियल के लिए क्या हम प्राइस फिक्स करते हैं, ताकि काऊ डंग से लेकर अन्य सभी प्रकार के रॉ-मैटेरियल्स के लिए फार्मर्स को ठीक ढंग से कुछ न कुछ लाभ मिल पाए, तो रॉ-मैटेरियल के बारे में हमने राज्य सरकारों से बात की है, हम उसमें डायरेक्टली प्राइस फिक्स करना नहीं चाहते हैं, क्योंकि कुछ राज्य उसमें सब्सिडी देने की बात भी करते हैं। इस बारे में अर्बन डेवलपमेंट मिनिस्ट्री की भी है, जिसमें अर्बन वेस्ट्स के ऊपर वे कुछ धनराशि देते हैं। इसलिए हमारे मंत्रालय से, हम रॉ-मैटेरियल के प्राइस को फिक्स नहीं करना चाहते हैं, लेकिन जब यह बायो-प्रोडक्ट बन जाता है, उसे प्रोक्योर करने का प्राइस हमारी ऑयल मार्केटिंग कंपनीज तय करती हैं और उसी प्राइस पर फिर वे प्रोक्योरमेंट करती हैं। अब चूंकि रॉ-मैटेरियल इकट्ठा करना सबसे बड़ा चैलेंज है, उसे पहले कहीं स्टोर करना पड़ता है और यदि हम एग्रीकल्चर रॉ-मैटेरियल की बात कर रहे हैं, तो उसका वॉल्यूम बहुत ज्यादा होता है। राज्य सरकारों से हम यही निवेदन कर रहे हैं कि वे उसकी पूरी प्लानिंग करें और एरियाज मार्क करें, ताकि एक एरिया में एक प्लांट आए, ओवरलैप न हो और प्रॉपर रॉ-मैटेरियल लॉंग टर्म में मिलता रहे। यह बात चल रही है"।

102. Explaining about the Support required from Ministry of Environemnt (MoEF&CC) for CBG plants, the representative of MoPNG made the following observation during the oral evidence:

> "..... एनवायरमेंट के विषय में जो बायो गैस या बायो फ्यूल्स हैं, ये ओरेंज कैटेगिरी में हैं। हमने निवेदन किया है कि इसे वाइट कैटेगिरी में डाला जाए, क्योंकि कुछ टेक्नॉलोजीज ऐसी हैं, जिनमें कोई भी डिस्चार्ज नहीं होता है। जो भी उसमें प्रोडक्ट है, उसमें जो भी बचता है, उससे कोई न कोई दूसरा प्रोडक्ट बन जाता है, जिसे इस्तेमाल में लाया जाता सकता है। इसका निवेदन हमने सैंट्रल पॉल्यूशन कंट्रोल बोर्ड से किया है और हाल ही में हमारे वैज्ञानिकों ने वहां प्रैजेंटेशन भी दिया है ताकि यह बताया जा सके कि इसे वाइट कैटेगिरी में डाला जाए और तभी इसमें फास्ट डेवलपमेंट आएगी, वरना आरेंज कैटेगिरी में आने की वजह से इसकी क्लीयरेंस वगैरह लेने में अधिक समय लगता है"।

XIII. R&D IN CBG/ENERGY FROM WASTE

103. Explaining the Waste to energy project undertaken, the representative of the IOC made the following submission:

> "....म्युनिसिपल सॉलिड वेस्ट से संबंधति प्रश्न था। I am very happy to tell you कि एनटीपीसी आईओसीएल ने ज्वाइंट वेंचर बनाया है, along with South Delhi Municipal Corporation. हम लोग एक डेमो प्लांट लगा रहे हैं, जिसके लिए टेक्नोलॉजी का सेलेक्शन हो गया है। यह यूएस की कंपनी है - इनर सॉल। हम एक नई तरह की प्लाज्मा टेक्नोलॉजी से यहां बिजली बनाएंगे। That electricity will be utilised to put in the grid. यह एक्सपेरिमेंट सफल होता है, तो इससे हम लोग सीनगैस बना सकते हैं। सीनगैस से एथेनॉल गैस बनाने का भी पोटैंशियल है। Work already has started and within 1 ½ years, यह पूरा होने की संभावना है"।

104. On being enquired on the R&D activities being undertaken the Representative of IOC stated the following during evidence:

> ".....एक प्वाइंट बोला था कि जो आर एंड डी रिसर्च कर रही है। बेसिकली, हमारे आर एंड डी का जो यील्ड है कि प्रतिटन कितना गैस बनता है, उस गैस की प्यूरिटी क्या है, वह बहुत ही अट्रैक्टिव है, बहुत ही हाई है, लेकिन आप का सवाल था कि इंवेस्टमेंट कितनी होगी? हम लोग एक मेजर इंजीनियरिंग कॉंट्रैक्टर के साथ टाई-अप करने जा रहे हैं और हम लोग अपनी टेक्नोलॉजी और वेरियस कैपेसिटी ऑफ प्लांट्स का एक मॉड्यूलर डिजाइन बनाएंगे, ताकि जो भी एन्टरप्रेन्योर्स होंगे, उनको काफी सुविधा होगी, to set up the facility. यह काम आर एंड डी के साथ बिजनेस डेवलपमेंट ग्रुप, एक बड़े इंजीनियरिंग कंसलटैंट के साथ टॉक्स में है। We will sign a MoU. We will make some modular designs for various capacities of the plant so that the cost will also come down. Our technology is already a very superior technology. उसका इंप्लिमेंटेशन भी हो जाए।"

105. On being asked whether India is participating in any international cooperation for research and development in the programme on Energy from wastes, the MNRE, in their written reply stated as under:

> **International Collaboration**- The Ministry has launched South Asia Group for Energy (SAGE) collaboration on July 7, 2020. SSS NIBE, being the research institute is developing collaboration with United States Agency for International Development (USAID), Lawrence Berkeley National Laboratory (LBNL) and Pacific Northwest National Laboratory (PNNL). In the SAGE program, three research areas are identified, which are given below:
>
> **1.1 Sustainable Farming of Bioenergy and Reduction in GHG (PNNL):** Under the proposed research, it is planned to develop status papers on recent developments in methods and protocols for biomass assessment and management and reciprocate stubble burning of rice straw through virtual mapping using modern GIS tools for pollution abatement-scope and progress in Indian perspectives
>
> **1.2 Biomass Cookstoves Testing (LBNL):** With the joint collaboration on cookstove testing facilities, SSS NIBE can serve as the gold-standard reference facility for all future regional testing facilities in India, the South Asian region, and beyond. It will also provide validation and support for development & testing of novel cookstove designs that can emerge locally, and be designed for the culture specific cooking styles of diverse regions of India. LBNL will support with their technical expertise to establish SSS-NIBE lab as per ISO standards.
>
> **1.3 Biomass and RE hybrid energy systems (LBNL and PNNL):** The main objective of the joint collaboration is to assess the feasibility and prospects of biomass-based hybrid systems in Indian and USA scenario. The feasibility would be accessed through technical and financial analysis through joint work between the institutes.
>
> **2.** This Ministry has collaborated with United Nations Industrial Development Organization (UNIDO) to implement a project on “Organic Waste Streams for Industrial Renewable Energy Applications in India”. The aim of this project to support innovative demonstration waste to energy projects.

XIV. BIO-ATF

106. The aviation sector globally has shown phenomenal growth in recent years. While aviation sector plays a pivotal role in supporting the economy, it also contributes

significantly to climate change. Of late, demand for cleaner aviation fuels (contributing 2% to global Green House Gas emissions) has gained significance.

107. A large number of countries have already subscribed to CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) – which aims to regulate and mitigate the total CO2 emissions from the year 2020 onwards. India, though not a signatory to CORSIA, may have to participate mandatorily in the second phase starting from the year 2024. Therefore, there is a need to build a robust bio-jet fuel infrastructure.

108. The first flight using 25% Biojet Fuel between Dehradun to Delhi operated by Spice jet was received by Minister, Petroleum and Natural Gas on 27.8.2018. Ministers of Civil Aviation, Road Transport & Highways and Shipping, Science & Technology and MoS, Civil Aviation, were present on the occasion. Bio jet fuel used in the flight had been developed by CSIR laboratory in IIP, Dehradun using Jatropha seeds.

109. In order to formulate a way forward, two committees have been formed with mandate as follows:

(a) First committee would look into the availability of feed stock across India for production of bio-jet fuel, current demand for bio-jet fuel, estimate of future requirements and its cost of production, etc.
(b) Second committee would look into the formulation of standards along with specifications to be prepared in line with International Standards. It would also study the effects of Bio-jet fuel on various aircraft engines.

The reports of the Committees have been received and further action based on recommendations are being taken.

112. When asked about the steps being taken to adopt low carbon fuel/ bio aviation turbine fuel in compliance with "Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)". The Ministry submitted the following written information:

> “CORSIA is likely to result in new demand for Bio-ATF, which would be produced from Used Cooking Oil and Non edible seeds and waste oils. The first flight using 25% Bio-jet Fuel between Dehradun to Delhi was operated by Spicejet on 27.8.2018. MOP&NG in August 2019 had constituted two committees to give impetus to the Bio-jet fuel (Bio ATF) program in the country. To take the Bio-ATF

program forward, Ministry of P&NG is considering a proposal to set up a demonstration Scale Bio-ATF Plant at one of the Refinery locations".

113. Elaborating further on Bio ATF, the representative of the Ministry made the following submission:

"यह सीएसआईआर का देहरादून में एक इंस्टिट्यूट है। उन्हीं की टेक्नोलॉजी थी, जिससे एविएशन फ्यूल का ट्रायल हुआ था। पिछले से पिछले साल 26 जनवरी को एयरफोर्स का प्लेन फ्लाई पास्ट के लिए लिया गया था और स्पाइस जेट प्लेन उड़ा था तो उन लोगों के साथ हमारी बात चल रही है कि कृषि वानिकी प्रोग्राम में जेट्रोफा, महुआ, नीम, करंजा जैसी कई प्रजातियां हैं जो कृषि वानिकी प्रोग्राम में ली जा सकती हैं और स्टेट गवर्नमेंट से भी बात हुई है। अगर इसको बढ़ावा देंगे और सस्टेन सप्लाई हो जाएगी, चूँकि अभी हमारा कंज्यूमर पक्का है। एयरफोर्स पूरी तरह से प्लांड है कि वे इम्पोर्टेड एविशन फ्यूल को किस तरह कम करेंगे। इसमें इंडियन इंस्टिट्यूट ऑफ पेट्रोलियम काम कर रहा है और हम भी उनके साथ काम कर रहे हैं।

सर, बायो ईटीएफ के बारे में आपने पूछा था। बायो ईटीएफ में मंत्रालय द्वारा दो कमेटी बनाई गई थी, क्योंकि बायो ईटीएफ में इंजन जो होता है, उस हवाई जहाज के सारे इंजन विदेशों से आते हैं। हमारे तेल के एमिशन की टेस्टिंग के लिए, उसके नॉर्म्स, उसकी परफॉर्मेंस आदि के लिए कमेटी बनाई थी। दूसरी एक कमेटी बनाई थी कि इसको आगे कैसे ले जाएंगे। कमेटी ने यह रिकमंडेशन दिया कि पहले एक डिमोंस्ट्रेशन प्लांट बनाया जाए और उस डिमोंस्ट्रेशन प्लांट पर प्रोड्यूस करके इंजन को फिर से डिफरेंट प्रतिशत पर दो प्रतिशत, तीन प्रतिशत, पांच प्रतिशत मिश्रण करके वेरिफाई किया जाए। डिमोंस्ट्रेशन प्लांट के लिए कार्रवाई शुरू कर दी गई है"।

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Part- II

RECOMMENDATIONS/ OBSERVATIONS

1. Implementation of National Policy on Bio-Fuels

The Committee note that one of the important mandate of Ministry of Petroleum and Natural Gas is to strengthen energy security of the country. At present the country is importing more than 80% of the crude oil and the Government has announced its intention to reduce import dependency. The Green house Gas emissions along with environmental pollution have brought focus for alternative fuels that have superior environment benefit that are economically competitive. The Committee note that this has laid to an important role for bio-fuels and the Government notified the National Policy on Bio-Fuels 2018 on 08.06.2018. This policy aims to increase uses of bio-fuel in the energy and transportation sectors thereby substituting fossils fuels and contributing to National Energy Security, climate change mitigation, apart from growing new employment opportunities in a sustainable way. Bio fuels include Bio-ethanol, bio-diesel, Compressed Bio Gas, bio-jet fuel and any other advanced Bio fuels.

In the National Policy of Biofuels, 2018 many new additional raw materials for 1G ethanol production have been included like Sugarcane Juice, Sugar containing materials like Sugar Beet, Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes which are going to increase availability of 1G ethanol. Used Cooking Oil (UCO) is being promoted for Biodiesel production. Govt has also announced Sustainable Alternative Towards Affordable Transportation (SATAT) scheme for marketing Compressed Bio Gas (CBG) produced from waste. The various sources of biofuels that are being developed as part of the alternate fuels programme in the country are lignocellulosic biomass, non-food crops, industrial waste & residue streams, MSW, plastics & industrial waste, food waste etc.

The Committee note that the Government is committed to utilize these with the aim to reduce our dependence on import of crude oil, achieve foreign

exchange savings, provide better remuneration for the farmers with a view to double their income, address growing environment issues owing to use of fossil fuels and burning of biomass/ waste, address challenges of waste management/agri-residues management in line with Swachh Bharat Abhiyan and promote "Make in India" campaign.

The policy has proposed an indicative target of 20% blending of ethanol in petrol and 5% blending of bio-diesel in diesel is proposed by 2030. Some of the steps taken for achieving are increasing domestic supplies of ethanol and bio-diesel, setting up of 2G bio-refinery, development of new feed stocks for bio-fuels, development of new technologies for conversion to bio-fuels and creating suitable environment for bio-fuels and its integration with main fuels.

The Committee would expect the MoPNG being the nodal Ministry to implement the policy to effectively fix milestones for production and blending of bio-fuels with fossil fuels for the next few years. Considering the multiple objectives set out to be achieved through the National Policy on Bio Fuels, the Committee recommend that it should be reviewed periodically to address policy issues and hurdles that may arise and ensure that the National Policy on Bio-Fuels is implemented in letter and spirit so as to enhance the energy security of the country and reduce import dependency of fossil fuels.

2. <u>National Bio-Fuel Coordination Committee</u>

The Committee note that in order to implement the National Policy On Bio Fuels, a National Bio-fuel Coordination Committee (NBCC) has been set up with representatives of 14 Ministries and Departments to meet periodically to provide overall coordination, effective end-to-end implementation and monitoring of biofuel programmes in the country. The Committee note that the policy on bio-fuel envisages role of various Ministries and Departments to make it successful and appreciate that NBCC has been constituted which is headed by the Minister, Petroleum and Natural Gas to oversee all the policies. The Committee note that the policy on bio-fuel also envisages the promotion of compressed bio-gas through

SATAT initiative of the Ministry of P&NG. Further, the Ministry of New and Renewable Energy is implementing a Waste to Energy programme under which recovery of energy in the form of bio-gas from urban industrial and agriculture waste/residue such as MSW, vegetable and food market waste, slaughter house waste, industrial effluence for meeting certain niche energy demands of urban industrial and commercial sector in the country. In this programme, the role of Ministry of Urban Development and municipal authorities in states will be the key stake holders. in addition, the Department of Food and Public Distribution (DFPD), Department of Agriculture, Cooperation and Farmer Welfare (DAC&FW), Department of Animal Husbandry and Dairing (DAHD) and Ministry of Environment and Forest and Climate Change are all part of the NBCC. Further the Committee note that Department of Drinking Water and Sanitation is implementing a GOBHARDhan scheme which aims to positively impact village cleanliness and generate wealth and energy from cattle and organic waste. The scheme also aims at creating new rural livelihood opportunities and enhancing income for farmers and other rural people. The Committee also note that the Department of Financial Services under Ministry of Finance has extended interest subvention scheme for expansion of distilleries for ethanol production and also given priority sector lending status for CBG projects under SATAT scheme.

However the Committee note that both Department of Financial Services (DFS) and Department of Drinking Water and Sanitation (DDWS) are not part of the NBCC where as these are two Departments which are very vital in terms of providing inputs /organic waste and financing of CBG projects. The Committee therefore, strongly recommend that in these two Ministries may also be made part of National Bio-fuel Coordination Committee (NBCC) so that overall coordination and collective effort from all stakeholders will be more effective in implementation of National Policy On Bio Fuels.

3. <u>Advancement of Ethanol Blending Targets</u>

The Committee note that the Ministry has planned to achieve a target of 10% blending of ethanol with Petrol by 2022 and 20% ethanol by 2030. The quantity of

Ethanol supplied for blending which was 38 cr litres in 2013-14 at a blending level of 1.5 % has now reached a supply of 188 cr litres in 2018-19 at a blending level of 5 %. The overall quantity has shown almost increase of 5 times over the last five years.

The Committee note that the availability of ethanol is currently around 188 crore liter per year. However, for achieving the 20% blending by 2025, the requirement of ethanol is likely to be in the range of 900 crore litres. The Committee note that at present the production of ethanol for blending with petrol is being done from sugarcane juice / sugar syrup, B heavy molasses, C heavy molasses and damaged food grains. The Department of Food and Public Distribution (DFPD) has also allowed the diverting 60L MT of excess sugar for the production of ethanol.

The concerned Ministries are discussing ways to increase the production of Ethanol in the country based on foodgrains in addition to sugarcane. The ethanol from grain based distilleries was around 15.94 cr litres during 2019-20. The Committee have been informed that by the year 2025, the total of 900 cr litres of ethanol for 20 % blending target will be met by sugar to the extent of 550 cr litres and remaining 350 cr litres to be met by grain based distilleries.

The Committee note that as per the original plan, the indicative target was to achieve 10 percent by 2022 and 20 percent by 2030. However, the Committee have been apprised that there has been a good momentum over the years in procurement of ethanol and with the planned efforts of the concerned Ministries, it will be possible to achieve the 20 percent ethanol blending with petrol target by 2025 and therefore recommend that MoPNG should prepone this accordingly.

4. <u>Diversity of feedstocks for Production of Ethanol</u>

The Committee note that major quantity of ethanol production for blending purpose is coming from sugar industry. However the requirement of ethanol for achieving the targeted blending levels will not be fully met by the sugar industry as the quantity of ethanol produced is inadequate. Hence the DFPD has plans to

allow the damaged food grains from FCI godowns for production of ethanol through grain based distilleries. This step may augment availability of ethanol but it may be not possible to reach the target in a sustainable way in the years to come. Hence the excess rice stocks in FCI godowns after meeting the food security requirements can come in handy for production of ethanol. The Committee therefore recommend that the MoPNG and DFPD should work closely about the quantity of rice that can be allowed for ethanol production without comprising food security so as to achieve the ethanol blending targets.

The Committee also note that the sugarcane is a water intensive crop and it is saddled with environmental issues and not sustainable in the long run and that ethanol produced from rice is of meagre quantity. Further, the Committee have been informed that that the ethanol used for blending purposes across the world over will be around 10,000 crore litres annually out of which more than 60 percent use maize as feedstock for production of ethanol. But in India, the ethanol production is mainly from sugarcane. The need for increasing maize cultivation in the country for ethanol needs to be seriously pursued and farmers may be educated and awareness programs may be conducted. The Committee are of the opinion that MoPNG may study the policies successfully followed in the countries which adopted bio fuels from feedstocks other than sugarcane and suitably adopt them in India. The Ministry of Petroleum and Natural gas should take up with Ministry of Agriculture and Farmers welfare on this issue and proper ground work involving States and Platforms like ATMA for this purpose.

The Committee note that production of ethanol from maize and other foodgrains including cereals etc. will help ethanol blending throughout the country as against the present scenario wherein ethanol production capacities are mostly located in sugar producing states. This will reduce transportation costs and prices of maize will increase boosting the farmers income. Therefore, the Committee recommend that the NBCC should diversify the feedstocks for ethanol production from maize and other foodgrains and motivate the farmers to increase

cultivation and production such feed stocks in the country over a period of time to ensure that the ethanol blended petrol programme is sustained in the long run.

5. <u>Procurement and Pricing of Bio fuels</u>

The Committee note that OMCs have released a 5-year ethanol procurement EOI on 12.08.2020 for procurement of ethanol for the ESYs 2020-21 to ESY 2024-25. OMCs jointly invite ethanol offers through a public Expression of Interest (EoI) on an annual basis. These offers are invited periodically in 4 to 5 cycles during an Ethanol Supply Year (ESY) (1st December of the year to 30th November of the next year) to procure ethanol from indigenous sources. BPCL is the overall coordinator for all the three OMCs. MoPNG is carrying out regular reviews with OMCs to monitor the progress of EBP Programme and to resolve any issues with the ethanol suppliers.

The prices of ethanol during an ESY, produced from all sugarcane based feedstock, is approved by the Government after recommendations of a Committee of Joint Secretaries from the Department of Food & Public Distribution, Ministry of Agriculture, Department of Expenditure and Ministry of Petroleum & Natural Gas. The various factors which are taken into consideration are the projections on availability of sugarcane, molasses & sugar during the year, the FRP of sugarcane, the MSP of sugar, cost of raw material & cost of conversion which includes cost of utilities, pollution control measures, interest and depreciation etc. The price of ethanol produced from Damaged Food Grains (DFG) is fixed by OMCs. In addition, GST and transportation charges are paid extra to the suppliers.

Regarding Bio-Diesel, Oil Marketing Companies (OMCs) have floated an Expression of Interest (EoI) for procurement of Biodiesel produced from UCO across 200 locations in the country. Till 01.07.2020, 30 EoIs have been received by the OMCs for setting up 49 Biodiesel plants with a capacity of 1015 MT/day. Under the scheme, OMCs will pay biodiesel producers ₹51 per litre in the first year, ₹52.7 per litre in the second, and ₹54.5 per litre in the third year (excluding transportation and GST).

Similarly, the Committee note that the marketing of all the CBG produced through such plants will be through OMC network. The Committee note that the ethanol suppliers have to supply ethanol at a particular location of a minimum quantity and also of the quality norms prescribed. This makes ethanol producers of small quantity unable to supply under this programme. The Committee also expect the OMCs to take care of safety aspects during transportation and storage of ethanol.

The Committee recommend that the Procurement and pricing of Ethanol, Bio diesel and Compressed Bio Gas should be periodically reviewed so that the planned quantity may be procured and the targeted blending and production of Bio fuels are achieved. The Committee also desire that Ministry and OMCs should devise mechanism to procure small quantities of ethanol from interested small suppliers and also from stand alone distilleries which produce ethanol from sugarcane juice so as to maximize availability of ethanol under this programme for blending purpose.

6. <u>Interest subvention scheme for sugar based distilleries for capacity expansion</u>

The Committee note that till the year 2014-15, ethanol distillation capacity of molasses based distilleries was only 215 cr litres and in the past 6 years, the capacity of molasses based distilleries have been doubled and are currently at 426 cr litre. They further note that with a view to achieve blending targets, concerted efforts to further double the ethanol distillation capacities of molasses based distilleries in the country by 2024 is under way. Under the ethanol interest subvention scheme, 238 projects for a loan amount of Rs. 16000 crore have been approved by DFPD. Government will be bearing interest subvention @ 6% maximum per annum for 5 years against the loans availed from banks by entrepreneurs. The Committee note that this will help in enhancement and augmentation of ethanol production capacity to a large extent.

The Committee further note that to expedite sanction of loan under the scheme, a tripartite agreement (TPA) between sugar mills, OMC's and the banks

through an escrow account has been evolved to provide loans even to sugar mills having weak balance sheets. The capacity expansion programme for ethanol production is a key component of the biofuel programme and any hurdles/delay in getting permission/clearances/approvals etc. may be sorted out with concerned agencies at fairly senior levels so that the interest subvention scheme progresses as per schedule. Therefore, the Committee recommend that expansion of molasses based distilleries for production of ethanol should be monitored periodically by NBCC as it is critically important for achieving success in the blending targets during the upcoming years.

7. <u>GST</u>

The Committee note that the Ethanol manufacturers use molasses as the key raw material for manufacturing of ethanol which is subjected to higher rate of GST @28% as against ethanol supplied to OMC's for blending which attract GST @5%. GST paid on procurement of molasses is available as Input Tax Credit (ITC) to ethanol manufacturers. However, they are not able to utilize the full ITC of GST paid due to lower rate of tax on ethanol supplied to OMCs for blending. GST provisions allow refund of such unutilized ITC. The inverted duty structure leads to working capital blockage for ethanol manufacturers.

The Committee feel that the problems of Ethanol manufacturers is legitimate and early refund of unutilized ITC help them to get improve their financial position which incentivize them to produce ethanol. Therefore the Committee recommend that the MoPNG and DFPD may represent the matter to GST Council for early refund and review.

8. <u>Conversion of single feed to dual feed distilleries</u>

The Committee note that the availability of ethanol is critically important for the success of the Ethanol blended petrol programme in the country. The ethanol availability has been increasing over the years due to various policy interventions taken by the concerned Departments. There is a need for capacity expansion/ creation of molasses as well as grain based distelleries to convert single feed

distilleries to dual feed distilleries and in installing molecular sieve dehydration in existing distilleries. The cost for setting up grain based distilleries as assessed by National Sugar Institute, Kanpur is about Rs. 1.45 crore to create 1 kilo litre per day (KLPD). An approximate investment of around Rs. 40120 crore would be needed to reach 20 percent blending target.

The Committee also note that setting up of new distilleries/expansion of existing distilleries will generate employment as lakhs of workers would be employed in these distilleries and ancillary activities. By this proposal, farmers and their dependents will be benefitted as in case of many domestic manufacturing companies, by the setting up of new distilleries will have significant employment generation potential.

Therefore, the Committee recommend that the MoPNG through the NBCC should monitor the progress of setting up of new distilleries/ expansion of existing distilleries from single feed to dual feed and take corrective action wherever required so that the multiple objectives of increase in ethanol production capacity, enabling the achievement of the targets set for blending, benefitting the farmers and also generating employment.

9. <u>Implementation of Industrial (Development and Regulation) (IDR) Act</u>

The Committee note that the Government of India had amended Industrial Development and Regulation Act (IDR) vide notification No. 27 dated 14 May 2016. As per amendment, the State Governments can legislate, control and / or levy taxes on duties on liquor meant for human consumption while the denatured ethanol which is not meant for human consumption, will be controlled only by Central Government. The Committee note that 13 States have already implemented IDR Act Amendment and some States including Rajasthan, West Bengal, Orissa, UP, Kerala, Telegana, Jharkhand, Delhi have not implemented the IDR Act.

The hurdles due to non implementation of IDR Amendments act are that licenses are required for inter state movement and storage of ethanol, cess/import duties/excise duties, etc are levied on ethanol and approvals, permissions are

required which make the entire exercise highly bureaucratic and procedural causing avoidable delays. The States which are deficient in ethanol production should help the OMC's to sell ethanol blended petrol in the states by removing hurdles and procedural requirements and also by reducing taxes/duties and incentivise this programme so that the programme is implemented throughout the country.

Therefore, the Committee recommend that NBCC should take up the matter with remaining State Governments for implementing the amended IDR Act so that the denatured ethanol which is not meant for human consumption can be utilized for blending purposed with petrol. Further, the Ministry should also take up with the States to reduce procedural delays by state agencies and adopt measures for ease of business.

10. <u>Reduction in cost of bio fuels</u>

The Committee note that the bio-fuel production cost can be reduced by improvising the fermentation and distillation efficiencies and converting waste to resource in the sugar industries where in particular the utilization of spent wash in molasses waste distilleries for producing value added products can help in reducing the cost of production. Therefore, the Committee recommend that MoPNG / DFPD may take up this issue in NBCC and invest in such projects so as to reduce the cost of production of ethanol and improve recovery rate or revenue generated from sugarcane and molasses by means of producing value added products.

11. <u>Bio Diesel</u>

The Committee note that while petrol is blended with ethanol and production of ethanol from sugar mills for blending purpose has picked up, the Bio diesel policy has not kept pace with EBP programme and has been a non starter. So far OMC's have procured 10.56 cr litres of Bio diesel for blending with HSD during the period April 2019- March 2020. Presently, the bio diesel produced in the country primarily from imported palm stearin oil. In order to phase-out palm

stearin and as a measure towards import substitution, it has been decided to promote domestically available used cooking oil (UCO) as the feedstock.

The Committee are disappointed that the Bio diesel has not been accorded the importance it deserved as diesel is the most consumed fuel and used mostly by in public transport and commercial vehicles. This makes that higher biodiesel blending will have a greater impact on reduction of crude oil imports. The Committee further desire that MOPNG should seriously identify sources of feed stock for production of bio diesel and take concrete steps in this direction.

It is proposed that UCO can be collected from Bulk Consumers such as hotels, restaurants, canteens, etc. for conversion. Oil Marketing Companies (OMCs) have floated an Expression of Interest (EoI) for procurement of Biodiesel produced from UCO across 200 locations in the country. Till 01.07.2020, 30 EoIs have been received by the OMCs for setting up 49 Biodiesel plants with a capacity of 1015 MT/day. Under the scheme, OMCs will pay biodiesel producers ₹51 per litre in the first year, ₹52.7 per litre in the second, and ₹54.5 per litre in the third year (excluding transportation and GST). Therefore, the Committee would like to recommend that MoPNG should undertake a massive awareness programme in the initial locations and simultaneously monitor the UCO program closely and try to improve the bio diesel production in a significant way which may help the country to reduce its import dependence.

12. <u>Environment Category Status for Bio Fuel Projects</u>

The Committee note that one of the problems being faced in the implementation of bio fuel policy is getting approvals for ethanol distilleries and CBG plants. MoP&NG has requested MoEF&CC to remove the condition of Certification by MoP&NG that the proposal is for the purpose of blending bio-ethanol with petrol. However, MoEF&CC has extended the validity of the notification till February, 2021 including the aforesaid deterrent condition. It may be noted that special dispensation is available only for those project proponent which submit MoP&NG certificate as mentioned in the aforesaid notification along

with the Environmental Clearance (EC) application. Accordingly, MoEF&CC is granting the EC as per its normal procedure and is not providing benefit of notification to the project proponents yet.

The Committee have been informed that even in zero discharge case from CBG plant, the Environment Ministry has kept the category as "orange". If the same can be moved to "white category", it can help in faster approvals and the plants can be brought into production earlier. The Committee recommend that MoPNG through NBCC mechanism should take up this issue and pursue CPCB to give white category status to the CBG projects.

13. <u>2G Ethanol Plants</u>

The Committee note that ethanol blended petrol is one of the main and important objective in the national policy of bio-fuel and it is estimated that around thousand crore litre of ethanol may be required by the year 2030 to achieve 20% blending of ethanol with petrol. The current availability in the country is around 180 crore litre per year and it is expected that all other sources like sugar juice and food grains production may also supplement availability of ethanol in blending purpose. These are all ethanol produce from 1G method. However, in order to increase the availability of ethanol across the country the Ministry proposes to set up 2G plants at twelve locations in the country which use non edible oil seeds, non agriculture residue such as straw, cotton stalks, carn cobs,saw dust etc,. With an objective to augment ethanol supply, the Government has allowed procurement of ethanol produced from other non food stocks like cellulosic and lignocelluloses materials. The Committee note that in furtherance of this decision the oil PSUs have planned to establish twelve 2G ethanol bio refineries in 11 states in the country with over all capacity of 1100 kile litre per day with a over all investment of Rs. 14000 crores. Out of this the projects at Panipat (Haryana) by IOCL, Bhatinda (Punjab) by HPCL, Bargarh (Odisha) by BPCL and Numaligarh (Assam) by NRL are in advance stage of progress.

The Committee are of the view that the continuous availability of ethanol by 1G or 2G methods at affordable cost is important for sustainable and successful implementation of the EBP programme. The Committee, therefore, recommend that the Ministry should periodically monitor the progress of the establishment of 2G ethanol bio refineries in the country and they should be completed within schedule time and cost. Further more, the Committee also emphasise that the Ministry should focus on technology for development of 2nd Generation and other advance biofuels utilising domestic feedstocks so as to address the cost factor in sustainability and commercial production of Ethanol plants.

14. <u>CBG under SATAT</u>

The Committee note that Government has announced Sustainable Alternative Towards Viable Transportation Scheme (SATAT) for marketing Compressed Bio Gas (CBG) produced from waste. They further note that agriculture waste/residue, municipal solid waste, cattle dunk, sewage treatment plants wastes etc. have potential to be used in the production of bio-gas. CBG has more than 90% of methane content and can be utilized as an environment friendly fuel. The conversion of waste/bio-mass into compressed bio-gas has multiple benefits like reduction of green house gas, emission of reduction in burning of agriculture residue, reduction in environment pollution, reduction of natural gas import, employment generation, remunerative income to farmer etc. The SATAT scheme launched on 1.10.2018 envisages establishing all 5000 CBG plants with a total production capacity of 15 Million MT per annum by 2023. OMCs along with GAIL and IGL have invited expression of interest to procure CBG from potential CBG plants enterprenuers. The CBG plans will also produce bio-manure as a bio-product which can be utilised in the farm sector and this has been included as bio manure under Fertilizer Control Order 1985. The Committee note that Ministry of New and Renewable Energy has extended central financial assistance to CBG projects while banks provide soft loan to CBG projects.

The Committee note that production of CBG will boost availability of more affordable transport fuel, reduce pollution, will create employment and value in the

rural economy as well as assist in achieving climate change goal of the country as per the Paris agreement 2015. The Committee, are of the view that establishment of CBG plants is a key component which will help the country to achieve multiple objectives along with increasing self reliance on domestic and alternative source for fuel and energy needs and they, therefore recommend that the establishment of 5000 CBG plants by 2023 should be taken up in mission mode and dedicated working group may also be set up to take necessary decisions and effectively monitor so that these plants are established on the ground.

15. <u>R& D in Bio Fuels</u>

The Committee note that in order to successfully implement the bio-fuel policy there is need to have production of ethanol, bio-diesel, bio-gas etc. in a uninterrupted way for long years. As of now the programme is linked with a sugar industry for ethanol production and recently it has also taken up of ethanol production from food grains. In order to ensure uninterrupted supply of ethanol there has to be assurance of commercial production. In the National policy on bio-fuel many additional raw materials for ethanol production has been included for 1G ethanol production. Similarly with an objective to augment ethanol supply, the Government allowed production of ethanol from other non feed stocks like cellulosic and lignocellulosic materials including petro chemical route.

The Committee note that the DBT IOC R&D Centre has developed an indigenous technology for conversion of cellulosic and lignocellulosic bio-mass to 2G ethanol at 250 kg/day in a pilot plant commissioned with technical assistance from National renewable energy laboratory, US Department of Energy Lab & global leader in 2G ethanol projects. The Committee further note that DBT IOC centre has developed cost effective high titer and high performance enzyme technology for bio-mass pretreatment. IOCL has planned on site production of indigenous enzyme in the demo plant at Panipat and based upon success of the demo plant, commercial plant for production of enzyme could be set up.

The Committee also note that DBT IOC centre at Indian Oil has developed a Novel third generation bio-fuel technology to convert CO2 in to Acetic acid and convert them into lipids which will be further separated for high value product and bio-diesel fuel which will make the process economically feasible. A pilot facility has been put up by DBT IOC centre at Faridabad. Further the biomethanation technology developed to utilise diverse range of waste as feed stocks to produce higher bio-gas yields having high methane content. Similarly, IOC has developed a novel process to convert Co2 into fuel molecules like methanol, butanol, ethanol, etc,. The Committee desire that MoPNG / DAC&FW / DFPD should strive for international cooperation to establish scientific and technical cooperation for better quality of Bio-Fuels, diversified feedstock, improving storage and longevity of blended fuel, etc,.

The Committee appreciate the R&D efforts of MoPNG and IOC in collaboration in the areas of biofuels. The Committee recommend that the Ministry should closely monitor the progress of the R&D projects and critically peer review them so that cost effective and commercially viable technologies are developed so as to provide to sustainability to the national policy on bio fuel in the long run and reduce the country's dependency on import of crude oil.

16. <u>Wastes to Energy</u>

The Committee note that Ministry of New and Renewable Energy is implementing a Waste to Energy programme and this program is eligible for Central Finance Assistance (CFA). Under the Programme, Energy from Urban, Industrial, Agricultural Wastes/ Residues and Municipal Solid Waste for recovery of energy through Waste to Energy projects in the form of Biogas, Bio CNG, Power, Syngas/Producer gas. This will be used for meeting various applications such as fuel for vehicles, industries for captive energy needs, cooking etc besides generating bio-fertilizers.

The Committee note that, under this scheme, 62 proposals were received for seeking Central Financial Assistance (CFA) out of which sanction to 16 Waste to

Energy projects with cumulative installed capacity of 15.12 MWeq projects have been issued as on 31.01.2021. 14 projects having total installed capacity of 80 MWeq are under consideration for grant of CFA amounting to Rs 269 Cr. These projects are currently at various stages of implementation. The Committee further note that Under the Programme, financial assistance of Rs 4.0 Crore per 4800Kg/day for Bio CNG generation (including setting of Biogas plant) in the form of back-ended capital subsidy is provided to CBG projects developers.

The Committee also note that Department of Drinking Water and Sanitation is implementing a GOBHARDhan scheme which aims to positively impact village cleanliness and generate wealth and energy from cattle and organic waste. The scheme also aims at creating new rural livelihood opportunities and enhancing income for farmers and other rural people.

The Committee appreciate the various initiatives taken by different Ministries in the sphere of their Mandate which will help to achieve the multiple objectives of management of waste, enhancing farmers income by sale of the waste generated in farming activities and also producing gas or energy locally which can be used to meet the demands of the local community. The Committee consider these projects as very important as this will help in meeting energy needs in a decentralized manner and enhance the energy security component as well and will develop large stakeholders to benefits from these projects. The Committee therefore, recommend that MOPNG /MNRE/DWSD should include all these programme in the periodical review by the NBCC so that any implementation issues may be ironed out and the projects can be extended / modified so as to benefit the country and the beneficiaries in a holistic way.

17. <u>BIO-ATF</u>

The Committee note that one of the bio-fuel under the national policy on bio fuel being implemented is Bio-ATF. The aviation sector which plays pivotal role in the economy has shown phenomenal growth in the recent years. It also contribute to green house gas emission hence need for cleaner aviation fuel as gained significance. Though India is not a signatory CORSIA (Carbon Offsetting and

Reduction Scheme for International Aviation) at present it may have to participate mandatorily in the second phase from 2024. Therefore, there is a need to build infrastructure for bio-jet fuel.

The Committee note that the first flight using 25% bio-jet fuel developed by CSIR lab in IIP Dehradun was operated at 27 August, 2018. For further progress, two committees were formed and reports have been since received. Used cooking oil, non-edible seeds and waste oils are likely to be used for production of bio-ATF. The Committee also note that there is a proposal to set up a demonstration scale bio-ATF plant in one of the refineries. They are apprised that once the fuel is developed successfully it may be used in Indian Air force which is looking to reduce its import requirements of aviation fuel. Therefore, the Committee recommend that Ministry should quickly finalise the demonstration scale bio-ATF plant at one of the refineries and also further support R&D activities for development of this fuel so that the Indian aviation sector and the Indian Airforce can use this bio-ATF in larger scale at an early date.

New Delhi;
9 March, 2021
18 Phalguna, 1942 (Saka)

RAMESH BIDHURI,
Chairperson,
Standing Committee on
Petroleum & Natural Gas.

ANNEXURE-I

MINUTES
STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2019-20)

ELEVENTH SITTING
(22.07.2020)

The Committee sat on Wednesday, 22nd July, 2020 from 1230 hrs. to 1430 hrs. in Main Committee Room, PHA, New Delhi.

PRESENT

Shri Ramesh Bidhuri - Chairperson

MEMBERS

LOK SABHA

2. Shri Girish Chandra
3. Shri Rodmal Nagar
4. Shri Unmesh Bhaiyyasaheb Patil
5. Shri Janardan Singh Sigriwal
6. Shri Lallu Singh
7. Shri Vinod Kumar Sonkar
8. Shri Rajan Baburao Vichare

RAJYA SABHA

9. Shri Narain Dass Gupta
10. Smt. Kanta Kardam
11. Shri Om Prakash Mathur
12. Shri A. Vijayakumar
13. Ch. Sukhram Singh Yadav

SECRETARIAT

1.	Smt. Abha Singh Yaduvanshi	-	Joint Secretary
2.	Shri H. Ram Prakash	-	Director
3.	Shri Tirthankar Das	-	Additional Director
4.	Shri Vinay Pradeep Barwa	-	Deputy Secretary
5.	Shri Mohan Arumala	-	Under Secretary

Representatives of the Ministry of Petroleum & Natural Gas

1.	Shri Tarun Kapoor	-	Secretary
2.	Shri Sunil Kumar	-	Joint Secretary (Refinery)
3.	Shri Ashish Chatterjee	-	Joint Secretary (Gas Pricing)

Representatives of Public Sector Undertakings

1.	Shri S.M. Vaidya	-	Chairman, IOCL
2.	Shri Manoj Jain	-	CMD, GAIL
3.	Shri A.K. Jana	-	MD, IGL
4.	Shri G.K. Satish	-	Director (P&BD), IOCL
5.	Shri M.A. Khan	-	ED (Coord.), BPCL
6.	Shri Alok Gupta	-	ED (Coord.), HPCL

2. At the outset, the Hon'ble Chairperson welcomed Members of the Committee and representatives of the Ministry of Petroleum and Natural Gas/PSUs to the sitting of the Committee to have briefing by the representatives of the Ministry of P&NG/PSUs on the subject "Review of Progress in Production of Bio-Fuels". Thereafter, the Secretary, Ministry of P&NG introduced his colleagues to the Committee.

3. Subsequently, Members of the Committee raised several issues related to the subject such as reasons for delay in fulfillment of targets under various bio-fuel production projects, progress in setting up of twelve 2G bio-ethanol plants across eleven states, gap between actual and targeted percentage of ethanol blending in petrol, collaboration activities with agricultural research institutions, progress under PM-JIVAN Yojana, status of implementation of amendment to Industries (Development & Regulation) Act, 1951, current share of bio-fuels in global energy basket, progress of Sustainable Alternative Towards Affordable Transportation (SATAT) scheme, usage of surplus sugarcane for ethanol production, progress made under Used Cooking Oil (UCO) scheme, infrastructure for collection of used cooking oil by OMCs and promotion of small-scale ethanol production by reducing minimum procurement quantity in tenders floated by OMCs.

4. Further, other issues like utilizing agricultural residue and other forms of bio-waste for ethanol production, incentivization to set up bio-diesel plants, granting 'priority sector lending' status to ethanol blended petroleum programmes, possibility of utilizing tallow for production of bio-diesel, non-renumerative nature of jatropha cultivation on mass commercial scale for farmers, exploration of alternative crops for bio-diesel production, optimum utilization of land for production of food crops alongside the cultivation of

feedstock for bio-fuels, environmental impact of bio-fuels, streamlining guidelines for transportation of ethanol in ethanol producing states of India, details of CBG plants being installed in various parts of the country, employment potential in bio-fuel production sector, ethanol production capacity of the distilleries attached with the sugar mills and details of GOBAR-DHAN scheme also came up for discussion during the sitting. Thereafter, representatives of the Ministry/PSUs clarified on several issues raised by the Members and assured the Committee that the required details would be intimated to the Secretariat in writing.

5. Thereafter, the Chairperson thanked the representatives of the Ministry/PSUs for expressing their views and answering queries raised by the Members of the Committee. Further, to the queries where replies were not readily available, the Ministry was instructed to furnish the same to the Secretariat within fifteen days.

6. A copy of the verbatim proceedings is kept in the Branch for record.

The Committee then adjourned.

ANNEXURE-II

MINUTES

STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2019-20)

FIFTEENTH SITTING
(11.09.2020)

The Committee sat on Friday, 11th September, 2020 from 1100 hrs. to 1330 hrs. in Committee Room No. '1', PHA Extn. Building, Block-A, New Delhi.

PRESENT

Shri Ramesh Bidhuri - Chairperson

MEMBERS

LOK SABHA

2. Shri Girish Chandra
3. Shri Janardan Singh Sigriwal
4. Shri Lallu Singh
5. Shri Ajay Tamta
6. Shri Rajan Baburao Vichare

RAJYA SABHA

7. Shri Ripun Bora
8. Shri Narain Dass Gupta
9. Shri Kanakamedala Ravindra Kumar
10. Dr. Bhagwat Karad
11. Shri A. Vijayakumar
12. Ch. Sukhram Singh Yadav

SECRETARIAT

1.	Shri H. Ram Prakash	-	Director
2.	Shri Tirthankar Das	-	Additional Director
3.	Shri Vinay Pradeep Barwa	-	Deputy Secretary
4.	Shri Mohan Arumala	-	Under Secretary

Representatives of the Ministry of Petroleum & Natural Gas

1.	Shri Tarun Kapoor	-	Secretary
2.	Shri Sunil Kumar	-	Joint Secretary (Refinery)
3.	Shri Ashish Chatterjee	-	Joint Secretary (GP & Mkt.)

Representatives of IOCL

1.	Shri S.M. Vaidya	-	Chairman
2.	Shri G.K. Satish	-	Director, IOCL

2. At the outset, the Hon'ble Chairperson welcomed Members of the Committee and representatives of the Ministry of Petroleum and Natural Gas/PSUs to the sitting of the Committee to take oral evidence by representatives of the Ministry of P&NG/PSUs on the subject "Review of Progress in Production of Bio-fuels." Thereafter, the Secretary, Ministry of P&NG introduced his colleagues to the Committee.

3. Subsequently, Members of the Committee raised several issues related to the subject such as establishment of a nodal agency for coordination in the bio-fuels sector, incentivizing private investment in the establishment of bio-diesel plants, use of PPP model in setting up bio-diesel plants, enhancing farmer's income through production of bio-fuel plants, establishment of used cooking oil (UCO) based plants, procurement of agricultural residue and use of cow dung as feedstock, timeline for achievement of ethanol blending targets, different varieties of damaged foodgrains used for bio-fuel production, number of operational CBG plants in the country, environmental benefits of CBG vis-à-vis conventional fossil fuels, projected reduction in imports after achievement of ethanol blending targets, involvement of OMCs in bio-fuel production, use of municipal solid waste for CBG production, landfill gas recovery for CBG production, reasons for delay in production from new distilleries, amendment to Industries (Development & Regulation) Act, 1951, implementation of SATAT, default of loans by various sugar mills, credit extension to CBG plants and R&D initiatives of IOCL in bio-fuels sector. Thereafter, representatives of the Ministry/IOCL clarified on several issues raised by the Members. The Hon'ble Chairperson thanked the representatives of the Ministry of P&NG/IOCL for expressing their views and answering queries raised by the Members of the Committee. Further, to the queries where replies were not readily available, the Ministry was instructed to furnish the same in writing to the Secretariat within ten days.

4. The representatives of the Ministry of P&NG and IOCL then withdrew except the Secretary of the Ministry and Chairperson of IOCL.

5. Subsequently, representatives from the Ministry of Finance (Deptt. of Financial Services), State Bank of India and Punjab National Bank were called in:

Representatives of the Ministry of Finance (Deptt. of Financial Services)

1.	Shri Sanjeev Kaushik	-	Additional Secretary
2.	Shri Bhushan Kumar Sinha	-	Joint Secretary
3.	Shri Arijit Basu	-	MD (Commercial Client Group), SBI
4.	Shri Chander Khurana	-	CGM, PNB

6. The Hon'ble Chairperson welcomed representatives of the Department of Financial Services/ SBI/PNB to the sitting of the Committee to hear their views on the same subject. Thereafter, the representatives were introduced to the Committee. With the permission of the Hon'ble Chairperson, the representatives of DFS/SBI and PNB briefed the Committee about their role in bio-fuel programme.

7. Thereafter Members raised several issues on the subject such as impact of priority sector lending status on CBG production, priority sector lending guidelines, working capital requirements of CBG plants, minimum investment amount to be made by promoter, rate of interest on term loans, financial criteria for granting in-principle approval, practical constraints and challenges faced by banks in lending credit to sugar mills, percentage of loans provided to various sectors under priority sector lending, debt funding policy prepared by SBI along with IOCL and the role of NABARD in incentivizing selling up of CBG plants. Thereafter, representatives of the Ministry/PSBs clarified on several issues raised by the Members.

8. At the conclusion of the sitting, the Hon'ble Chairperson thanked the representatives of the Ministry of Finance/PSBs for expressing their views and answering queries raised by the Members of the Committee. Further, to the queries where replies were not readily available, the Ministry was instructed to furnish the same in writing to the Secretariat within ten days.

9. A copy of the verbatim proceedings of Ministry of P&NG/IOCL and Ministry of Finance/ PSBs has been kept in the Branch for record.

The Committee then adjourned.

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ANNEXURE-III

MINUTES

STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS

(2020-21)

THIRD SITTING

(06.11.2020)

The Committee sat on Friday, 6th November, 2020 from 1100 hrs. to 1330 hrs. in Main Committee Room, PHA, New Delhi.

PRESENT

Shri Ramesh Bidhuri - Chairperson

MEMBERS

LOK SABHA

2. Smt. Chinta Anuradha
3. Shri Girish Chandra
4. Shri Topon Kumar Gogoi
5. Shri Naranbhai Kachhadiya
6. Shri Unmesh Bhaiyyasaheb Patil
7. Dr. Kalanidhi Veeraswamy
8. Shri Janardan Singh Sigriwal
9. Shri Vinod Kumar Sonkar
10. Shri Ajay Tamta

RAJYA SABHA

11. Shri Narain Dass Gupta
12. Smt. Kanta Kardam
13. Shri Kanakamedala Ravindra Kumar
14. Shri Om Prakash Mathur
15. Dr. Bhagwat Karad
16. Shri A. Vijayakumar
17. Ch. Sukhram Singh Yadav

SECRETARIAT

1.	Smt. Abha Singh Yaduvanshi	-	Additional Secretary
2.	Shri Vinay Pradeep Barwa	-	Deputy Secretary

Representatives of the Ministry of Agriculture and Farmers Welfare

1.	Dr. Alka Bhargava	-	Additional Secretary
2.	Ms. Neeraja Adidam	-	Joint Secretary (INM)

Representatives of the Ministry of Consumer Affairs, Food and Public Distribution

1.	Shri Sudhanshu Pandey	-	Secretary
2.	Shri Subodh Kumar Singh	-	Joint Secretary

Representatives of the Ministry of New and Renewable Energy

1.	Shri Indu Shekhar Chaturvedi	-	Secretary
2.	Shri Dinesh Dayanand Jagdale	-	Joint Secretary
3.	Dr. Pankaj Saxena	-	Scientist-G
4.	Shri Vijay Kumar Bharti	-	Scientist-C
5.	Dr. P.C. Maithani	-	Scientist-G

2. At the outset, the Hon'ble Chairperson welcomed Members of the Committee and representatives of the Ministries of Agriculture and Farmers Welfare, Consumer Affairs, Food and Public Distribution and New and Renewable Energy to the sitting of the Committee and informed that the sitting was convened to have a briefing on the subject "Review of Progress in Production of Non Conventional Fuels with specific reference to Bio-fuels". Thereafter, the representatives of the three Ministries got introduced themselves to the Committee.

3. Subsequently, Members of the Committee raised several issues related to the subject such as scheme for extending financial assistance to sugar mills for enhancement and augmentation of ethanol production capacity, steps taken by the DFPD to increase the blending percentage with petrol, benefits of inclusion of bio slurry and fermented organic manure under FCO, joint initiatives taken by the three Ministries to encourage the use of alternative fuels to reduce the dependency on oil imports, status of India's alternate fuel programme, reasons for delay in fulfillment of targets under various bio-fuel programmes including National Bio-fuel Mission and Ethanol Blending

programme, initiatives taken that can increase the remuneration of farmers from farm level food waste, status of Compressed Bio-Gas plants projects in the country, steps taken by the Government to ensure regulatory compliance standards being met at the state and local levels to promote sustainable production of bio-fuel, volume of spoiled food grains in the warehouses during the last three years, number of grain based distilleries set up, fixing of fair and remunerative price by the Government and review of existing revenue sharing formula between farmers and sugar factories, policy restriction on the ban of import of Extra Neutral Alcohol (ENA) and the Rectified Spirit (RS) and ethanol, Dual Pricing System for sugar industry, liberalization of the license policy for the setting up of new distilleries, use of PPP model, inclusion of Ministry of Environment, Forest and Climate Change and Ministry of Jal Shakti and Road Transport to promote sustainable production of bio-fuels.

4. Further, other issues like scope and viability of production of bio-fuel from fallen dry pine needles, conversion of surplus rice to ethanol, quantum of food produce diverted/utilized for the production of bio-fuel during the last three years, quantum of food wasted during the last three years, functional and non functional bio-methanol plants in India, progress and recent trends in production of bio-fuels from sewage sludge and Government's policy towards it, importance of PM KUSUM Scheme in promotion of alternative energy resources, impact of bio-fuel expansion policy on water resources and Government's efforts to address the possibility of resultant water crisis, status of 2003 bio-fuel policy, feasibility of bio-fuel production using food/horticulture waste from households and sabzi mandis including sugarcane leaves, expenditure incurred on rice procurement from FCI for production of ethanol, Waste to Energy Scheme 2018, bio supply chain management, solar pumps installed under KUSUM scheme, awareness programme for Government schemes on promotion of alternate energy sources, subsidies granted/sanctioned for CNG plants, production of ethanol from damaged food-grains such as wheat and broken rice, disposal and recycling of crop residue for bio-fuel production, schemes to reduce the consumption of water, Mission Organic for North East, ATMA programme, feasibility of ethanol production from Bamboo in India, production of fermented bio manure, the present status of research on alternative

feedstock for biodiesel production, sub-mission on agriculture mechanization for crop residue, strategy of biodiesel production from used/waste cooking oil, status of SATAT programme, challenges faced by MoPNG and the Department of Food & Public Distribution in monitoring sugar mills and distilleries under the EBP programme, loan schemes extended to farmers for setting up of grain based distilleries, difficulties faced by mill owners in production and management of sugarcane for the purpose of production of ethanol, feasibility of harnessing energy of people walking on crowded pavements.

5. Members of the Committee also discussed the issue of summoning of the Ministry of Environment and Forests, the Ministry of Jal Shakti and the Ministry of Fisheries, Animal Husbandry and Dairying for better understanding on the subject.

6. Thereafter, the Chairperson thanked the representatives of the three Ministries for expressing their views and answering queries raised by the Members of the Committee. Further, to the queries where replies were not readily available, the Ministries were instructed to furnish the same to the Secretariat within ten days.

7. A copy of the verbatim proceedings is kept in the Branch for record.

The Committee then adjourned.

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ANNEXURE-IV

MINUTES

STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2020-21)

TWELFTH SITTING
(08.03.2021)

The Committee sat on Monday, the 8 March, 2021 from 1400 hrs. to 1445 hrs. in Committee Room 'E', Parliament House Annexe, New Delhi.

PRESENT

Shri Ramesh Bidhuri - Chairperson

MEMBERS

LOK SABHA

2. Smt. Chinta Anuradha
3. Shri Santosh Kumar
4. Shri Unmesh Bhaiyyasaheb Patil
5. Dr. Kalanidhi Veeraswamy
6. Shri Janardan Singh Sigriwal
7. Shri Lallu Singh
8. Shri Vinod Kumar Sonkar
9. Shri Ajay Tamta

RAJYA SABHA

10. Shri Narain Dass Gupta
11. Smt. Kanta Kardam
12. Shri Kanakamedala Ravindra Kumar
13. Dr. Bhagwat Karad
14. Ch. Sukhram Singh Yadav

SECRETARIAT

1. Smt. Abha Singh Yaduvanshi - Additional Secretary
2. Shri H. Ram Prakash - Director
3. Shri Vinay Pradeep Barwa - Deputy Secretary
4. Shri Mohan Arumala - Under Secretary

2. XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX.

3. Thereafter, the Committee took up for consideration draft Report on the subject 'Review of Progress in Production of Non-Conventional Fuels with Specific Reference to Bio-Fuels' and adopted the same with minor modifications.

4. The Committee then authorised the Chairperson to present/lay the Reports in both the Houses of Parliament.

The Committee then adjourned.

XXX: Matter not related to the subject.

APPENDIX-1

A. Biofuel Policy Institutional Mechanism at the Centre

Under the Allocation of Business Rules, responsibilities have also been allocated to various Ministries to deal with different aspects of biofuel development and promotion in the country. Synergy is required between various departments and agencies due to the broader outlook/scope of work involved. This calls for an empowered Committee for policy guidance and early review on different aspects of biofuel development, promotion and utilization.

It is envisaged to set up a National Biofuel Coordination Committee (NBCC) headed by the Minister, Petroleum and Natural Gas and representatives of concerned Ministries would be the Members of this Committee. The Committee would meet periodically to provide overall coordination, effective end-to-end implementation and monitoring of biofuel programmes. The National Biofuel Coordination Committee will have the following composition:

Chairman: Minister of Petroleum & Natural Gas

Members:

i. Secretary, Ministry of Petroleum & Natural Gas
ii. Secretary, Department of Rural Development, Ministry of Rural Development
iii. Secretary, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture & Farmers Welfare
iv. Secretary, Ministry of Environment, Forest & Climate Change
v. Secretary, Department of Science & Technology, Ministry of Science & Technology
vi. Secretary, Department of Expenditure, Ministry of Finance
vii. Secretary, Ministry of Road Transport and Highways
viii. Chairman Railway Board
ix. Secretary, Department of Food & Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution
x. Secretary, Department of Heavy Industry, Ministry of Heavy Industries and Public Enterprises
xi. Secretary, Department of Bio-Technology, Ministry of Science & Technology
xii. Secretary, Ministry of New & Renewable Energy
xiii. Secretary, Ministry of Housing & Urban Poverty Alleviation
xiv. CEO, NITI Aayog
xv. Joint Secretary (Refinery), Ministry of Petroleum & Natural Gas – Member Secretary

APPENDIX-II

Statement showing State-wise number of grain based distilleries along with their capacity

S. No.	Name of State	No. of distilleries	Capacity of distilleries (in KLPD)
1.	Andhra Pradesh	15	1140
2.	Assam	2	105
3.	Bihar	4	365
4.	Chhattisgarh	5	270
5.	Haryana	13	1053
6.	Himachal Pradesh	2	35
7.	Jharkhand	1	65
8.	Karnataka	5	245
9.	Madhya Pradesh	7	470
10.	Maharashtra	31	1345
11.	Orrisa	2	90
12.	Punjab	16	1814
13.	Rajasthan	8	359
14.	Sikkim	1	65
15.	Uttar Pradesh	2	100
16.	West Bengal	2	180
	Total	**116**	**7701**

(Annual Capacity based on 340 days i.e 7701x340 = 261.83 or say 262 crore litres)