

## **OIL & GAS SCENARIO IN INDIA**

### **1. PREAMBLE**

India's energy needs are growing with rising income levels and growing population. The indigenous energy resources may not be sufficient in the long run to sustain the process of economic development of 9% of gross domestic product. The country's energy supply system continues to be dependent on fossil fuels, which are finite. The oil and gas share in the energy consumption has reached a level of about 45% and is expected to remain so. Globally also the share of oil is expected to remain at the same level in future also.

(ii). Total primary energy mix for India comprises of Coal 53%, Crude oil 33%, Natural Gas 8%, Hydro 5% and Nuclear energy 1%. Import dependence accounts for about 30% of our Total Primary Commercial Energy Supply (TPCES), however, oil imports constitutes more than 70% of our total oil consumption. Consumption of petroleum products in financial year 2006-07 was about 120 million metric tonnes (MMT). India is heavily import dependant for its oil & gas requirements. Total imports of crude oil and petroleum products in 2006-07 were of the order of 128 MMT amounting to nearly US\$ 57.280 billion. India also exported petroleum products amounting to 32 MMT, earning foreign exchange worth nearly US\$ 17.814 billion. After exports, our net import amount to nearly 96 MMT of crude and petroleum products worth nearly US\$ 39.466 billion.

### **2. HISTORICAL BACKGROUND OF EXPLORATION & PRODUCTION**

(i). Search for hydrocarbons in India started in the early years of the 19<sup>th</sup> century in the dense jungles in the north eastern India in Upper Assam. Oil seepage in the hills near present day Assam-Arunachal Pradesh border was first reported in 1830s. Asia's first successful mechanically drilled oil well was drilled in Makum in Assam way back in 1867. The first commercial discovery of crude oil was, however, made in the year 1889 at Digboi in Assam and this also marked the beginning of oil industry in India. The discoverer of this Digboi oilfield was 'The Assam Railway & Trading Company' (AR&T Co.). Pioneering Geological mapping in parts of the North Eastern region was carried out by the Geologists of Burmah Oil Company. Later on Burmah Oil Company (BOC),

through its subsidiary Assam Oil Company (AOC), discovered the Naharkatiya Oilfield in 1953 and Moran oilfield in 1956 in Upper Assam. Discovery of Nahorkatiya oilfield was the first hydrocarbon discovery in independent India.

(ii). To manage these Assam oilfields, Naharkatiya and Moran, Oil India Pvt. Ltd. (OIL) was incorporated on 18<sup>th</sup> February, 1959 with two-third share of BOC/AOC and one-third share of Government of India. By a subsequent agreement on 27<sup>th</sup> July, 1961, Government of India and BOC transformed OIL into a joint venture company with equal partnership. On 14<sup>th</sup> October, 1981, OIL became a fully owned Government of India Enterprise.

(iii). In order to give impetus to exploration in country, National oil company, Oil & Natural Gas Corporation Limited (ONGC) was formed in 1959. Since then, ONGC is continuously engaged in exploration and production of hydrocarbons. The award of exploration blocks to ONGC and OIL was through nomination basis.

(iv). In 1990s, Government of India introduced the liberalization process in the country and Government awarded exploration blocks to private/foreign companies with mandatory state participation through its national oil companies. During this period, medium and small size discovered fields were awarded to private / foreign companies, which led to the entry of many foreign companies such as, Geopetrol, Cairn Energy Pty limited, British Gas, Niko Resources limited, Canoro Resources Limited and others made entry in the arena of exploration and production in the country.

(v). In 1997, Government of India approved the New Exploration & Licensing Policy (NELP) and it became effective in February, 1999 Since then licenses for exploration are being awarded only through a competitive bidding system and National Oil Companies (NOCs) are required to compete on an equal footing with Indian and foreign companies to secure Petroleum Exploration Licences (PELs). Six rounds of bids have so far been invited under NELP, in which, 162 exploration blocks have been awarded. More than 20 foreign companies have been awarded exploration blocks under NELP. Government of India is committed to offer exploration blocks in coming years. In next five years, area

under exploration for Indian sedimentary basins will increase from 44% at present to 80%. By 2015, whole sedimentary basinal area will be under exploration.

### **3. NEW EXPLORATION LICENSING POLICY (NELP)**

(i) The development of E&P sector has been significantly boosted through NELP Policy of Government of India, which brought major liberalization in the sector and opened it up to for private and foreign investment, where 100% Foreign Direct Investment (FDI) is allowed. NELP provides a level playing field to the private operators either Indian or Foreign, by giving them the same fiscal and contract terms as applicable to NOCs for the offered acreages.

(ii). India has an estimated sedimentary area of 3.14 million square kilometre, comprising 26 sedimentary basins, out of which, 1.35 million square kilometre area is in deepwater. At present 1.38 million square kilometre are held under Petroleum Exploration Licenses in 18 basins by national oil companies viz. Oil & Natural Gas Corporation Limited (ONGC), OIL India Limited (OIL) and Private/Joint Venture company. Before implementing the New Exploration Licensing Policy (NELP) in 1999, 11% of Indian sedimentary basins was under exploration, which has now increased significantly.

(iii). Under NELP, so far, 49 discoveries have been made by private/joint venture (JV) companies in 15 blocks. In the first six rounds of NELP, expected investment is of the order of US \$ 8 Billion. Oil and Oil-Equivalent Gas (O+OEG) in place reserve accretion under NELP is approximately 600 million metric tonnes.

(iv). The seventh round of NELP is on offer, where exploration blocks in onland, shallow and deepwater areas have been offered. Details can be referred in Notice Inviting Offer (NIO) for seventh round of NELP.

#### **4. CRUDE OIL PRODUCTION**

(i) During X plan period (2002-07), average crude oil production was about 33 MMT (242 million barrels) per annum in last 5 years. Public sector companies, viz., ONGC and OIL have the majority share of about 85.7% in crude oil and remaining 14.3% share of crude oil production is with private/ joint venture companies. Two third of domestic crude oil production comes from Offshore areas. The following table provides region wise details of crude oil and natural gas production:

#### **5. Crude oil Production in thousand metric tonnes**

State/Source	2001-02	2002-03	2003-04	2004-05	2005- 2006	2006-07
<u>Onshore</u>						
Gujarat	6002	6042	6131	6187	6251	6213
Assam/Nagaland	5095	4660	4592	4703	4474	4444
Tamil Nadu	440	395	375	391	385	354
Andhra Pradesh	283	300	281	226	216	251
Arunachal Pradesh	69	74	77	83	104	67
Total Onshore	11889	11471	11456	11590	11430	11329
Share of PSU	11818	11396	11382	11516	11329	11168
Share of Private/JV	71	75	74	74	101	161
<u>Offshore</u>						
Share of PSU	16074	17560	17677	18165	16309	17993
Share of Private/JV	4069	4013	4240	4226	4451	4669
Total Offshore	20143	21573	21917	22391	20760	22662
Grand Total	32032	33044	33373	33981	32190	33991

(i). Projection of average crude oil production during XI plan period (2007-12) is envisaged to be about 41.35 MMT (303 million barrels) per annum, which is 24% higher than X plan (2002-07) actual production. The company-wise crude oil production projection details in next five years is as under:

## **6. Crude oil Production in Million Metric Tonne (MMT)**

	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>Total</b>
<b>ONGC</b>	27.16	28.00	29.00	28.53	27.37	140.06
<b>OIL</b>	3.50	3.55	3.75	3.91	4.30	18.99
<b>Pvt./JV</b>	10.57	10.78	9.76	8.75	7.85	47.71
<b>Total</b>	<b>41.23</b>	<b>42.33</b>	<b>42.49</b>	<b>41.19</b>	<b>39.51</b>	<b>206.76</b>

## **7. NATURAL GAS PRODUCTION**

(i). During X plan period (2002-07), average natural gas production was about 87 million standard cubic metres per day (MMSCMD) in last 5 years. Public sector companies, viz., ONGC and OIL have the majority share of about 78% in natural gas production and remaining 22% share of natural gas production is by private/ joint venture companies. 70% of domestic natural gas production comes from offshore areas. The following table provides region wise details of crude oil and natural gas production:

### (ii) Natural Gas Production in million cubic metres

State/Source	2001-02	2002-03	2003-04	2004-05	2005- 2006	2006-07
<u>Onshore</u>						
Gujarat	3280	3531	3517	3710	3831	3294
Assam/Nagaland	1992	2047	2204	2249	2408	2572

Andhra Pradesh	1797	2038	1927	1707	1663	1525
Tamil Nadu	349	466	605	678	906	1130
Tripura	416	446	508	497	480	520
Rajasthan	101	162	168	213	242	217
Arunachal Pradesh	32	36	44	40	48	9
Total Onshore	7967	8726	8973	9094	9578	9267
Share of PSU	7343	7615	7666	7978	8021	8136
Share of Private/JV	624	1111	1307	1426	1557	1131
Offshore						
Share of PSU	18317	18367	17805	17313	16823	16567
Share of Private/JV	3430	4296	5184	5356	5801	5908
Total Offshore	21747	22663	22989	22669	22624	22475
Grand Total	29714	31389	31962	31763	32202	31742

(iii). With Exploration and development efforts made under NELP, Natural Gas production in the country is likely to double from the present level of gas production of about 90 million standard cubic metres per day (MMSCMD) by end of 11<sup>th</sup> Five Year Plan (2007-12). The company-wise breakup of natural gas production is given below:

#### 8. Natural Gas Production in Million Cubic Metre

	2007-08	2008-09	2009-10	2010-11	2011-12
<b>ONGC</b>	22100	22530	22770	22990	22000
<b>OIL</b>	3130	3210	3250	3280	3560
<b>Pvt./JV</b>	8550	22550	29410	28770	37670
<b>Total</b>	<b>33780</b>	<b>48290</b>	<b>55430</b>	<b>55030</b>	<b>63230</b>
<b>Total in MMSCMD</b>	<b>92.2</b>	<b>132.3</b>	<b>152</b>	<b>150.7</b>	<b>167.4</b>

## **9. HYDROCARBON RESERVES POSITION IN INDIA**

(i). Total prognosticated resources of the country have been estimated about 28 billion tonne (200 billion barrels of oil equivalent). As on 1.4.2007, exploration companies have established about 8.865 billion tonnes of initial in place reserves. The share of public sector companies in established reserves is about 84%. The remaining reserves are yet to be found out. Under NELP blocks, more than 600 MMTOE of oil and gas reserves were established including world class gas discovery by Reliance Industries Limited and Niko Resources in KG basin.

(ii). When first round of NELP was launched, there was apprehensions about prospectivity of the blocks were in the mind of investors considering the fact that most the blocks were the relinquished blocks by National Oil Companies. However, courageous E&P companies have benefited in India as already 49 oil & gas discoveries have been made. Companies like Cairn energy, U.K. and Niko resources of Canada have benefited immensely after investing in India. In the coming round of NELP, most of the blocks are from Western offshore and onland areas. At present, about 70% of crude oil and gas production is coming from western offshore area. Indian sedimentary basins are still poorly explored in terms of well density, which means, higher opportunity for the E&P companies and more chances to get oil and gas in the country.

## **10. Improved oil recovery/enhanced oil recovery projects**

(i). Work programmes have been undertaken primarily by ONGC for IOR/EOR in its 15 largest fields, which account for 80% of ONGC's reserves and production. Total capital investment is more than US\$ 3250 million, and the incremental production over the base case is expected to increase significantly from about 5 MMT in 2002-2003 to 11 MMT in 2007-2008. The total work incorporating innovative technological solutions include installations/up gradation of production facilities, laying of pipelines, drilling of about 650 new development wells, side tracking of existing wells, zone transfers, optimization of artificial lift systems etc. In addition, private sector /JV companies and

Oil India Limited (OIL) are also implementing IOR/EOR schemes in a few select reservoirs of the producing fields.

## **11. UPSTREAM SECTOR- DOMESTIC EXPLORATION FOR OTHER GASEOUS FUEL**

### **(i) Coal Bed Methane (CBM)**

Coal Bed Methane is a natural gas (Methane) adsorbed in coal and lignite seams and is an eco-friendly source of energy. Coal is both the source and reservoir rock for CBM. CBM production is done by simple depressurization and dewatering process. To harness this new source of energy in the country, the Government approved a comprehensive CBM policy in July, 1997 for exploration and production of CBM gas. As of now, 23 CBM Blocks were awarded through competitive international bidding under first three rounds of CBM policy, under which blocks are being operated by technically competent companies. 2 blocks were awarded on nomination basis and one block through FIPB route. 26 CBM exploration blocks are under operation. 6 TCF reserves have already been established in 4 CBM blocks. First commercial production of CBM has commenced from July 2007.

## **12. Underground Coal Gassification**

(i). ONGC entered into an Agreement of Collaboration (AOC-MOU) with National Mining Research Centre-Skochinsky Institute of Mining (NMRC-SIM). Russia. In the selected Vastan mine block, seismic survey was carried out and 18 boreholes were drilled for detailed UCG site characterization. The data set is currently under analysis for identifying exact location for pilot UCG. Four new sites, one in Gujarat and 3 in the state of Rajasthan have been identified. Collaboration with IIT, Mumbai for UCG process modeling is in progress. By end of XI five year plan, ONGC has envisaged to produce about 2 MMSCMD of gas.

### **13. Gas Hydrates**

Gas hydrates, generally found in deep sea, are basically methane molecules trapped in ice. At present, there is no commercial production of gas hydrates in any part of the world and the technology is only at research and development stage. The Ministry of Petroleum and Natural Gas has a roadmap regarding exploration of gas hydrates, which is under implementation. Prioritization of areas of operations have since been made and a road map for National Gas Hydrate Programme (NGHP) has been prepared. The Directorate of Hydrocarbons is the nodal agency. In accordance with the R&D efforts, the drill ship “JOIDES Resolution” which was flagged off from Mumbai in April 2006 for undertaking drilling/ coring /logging activities met with significant success in establishing the presence of sizeable reserves of good quality gas hydrates in the sedimentary basins in India. Results from the second site in KG basin are particularly remarkable. These have shown the presence of a 128m thick gas hydrate layer indicating massive to dispersed gas hydrates. The gas hydrate samples were physically collected for the first time in India in 2006, which is the third country in the world after USA and Japan to do so in its deep waters. The resource estimation of gas hydrates is in progress.

### **14. UPSTREAM SECTOR - EQUITY OIL AND GAS FROM ABROAD**

(i). In view of unfavourable demand – supply balance of hydrocarbons in the country, acquiring equity oil and gas assets overseas is one of the important components of enhancing energy security. The Government is encouraging National Oil companies to aggressively pursue equity oil and gas opportunities overseas. Overseas production can be swapped, sold or brought to India refineries on commercial considerations. ONGC Videsh Limited (OVL) today has presence in 16 countries, viz. Russia, Sudan, Vietnam, Iran, Libya, Syria, Myanmar, Iraq, Egypt, Qatar, Cuba, Nigeria, Sao-Tome-Principe Joint Development Zone, Colombia, Brazil and Turkmenistan. OVL produced about 7.95 Million Metric Tonnes (MMT) of oil and equivalent gas during the year 2006-07 from its assets abroad in Sudan, Vietnam and Russia, Syria and Colombia. OIL, IOC and GAIL are also engaged in acquiring overseas E&P assets. While OIL-IOC consortia have acquired blocks in Libya, Gabon, Yemen and Nigeria, GAIL has acquired interests in an offshore block in Myanmar.

## **15. Allocation of Ravva Crude to North-East**

In view of limited availability of about 5 MMT Crude Oil Produced in Assam to the four North-East refineries, they have been unable to operate to the level of their rated capacities. Therefore, an allocation of 1.5 MMTPA of Ravva crude oil was made to Bongaigaon Refinery & Petrochemicals Ltd. (BRPL) effective 1.4.2003. This enhances the total crude oil availability to all the four North-East refineries and has resulted in improved profitability and performance of these important industrial installations in the North-Eastern Region.

An allocation of 1.5 MMTPA of Ravva crude oil to Bongaigaon Refinery & Petrochemicals Ltd. (BRPL) continued during the year 2007-08 also.

## **16. Developments in the Downstream Sector**

### **(i) Pricing**

The global prices of crude oil and petroleum products have remained high and volatile since 2004 onwards. As on 3.1.2008 the price of Indian crude basket was \$ 94.62 per barrel, which is the highest since April, 2007. When the last increase in prices of petrol and diesel was made by Rs.4 and Rs.2 per litre respectively in June 2006, the Indian basket of crude oil was at about \$ 67 per barrel.

As a result of this unprecedented rise in international oil prices, the Public Sector Oil Marketing Companies (OMCs) are suffering under-recoveries in marketing of sensitive petroleum products. Keeping in mind the interest of common man and the vulnerable sections of the society, the Government has not increased the prices of sensitive petroleum products in tandem with the international oil prices during the year 2007. In fact, Government had reduced the prices of petrol and diesel on 30.11.2006 and 16.2.2007 due to global oil prices softening. Government has issued oil bonds worth Rs.24,121 crore during

the year 2006-07 to partially compensate the OMCs for their under recoveries on the sale of sensitive petroleum products. The *ad-valorem* excise duty component on petrol and diesel was reduced from 8% to 6% in the Union Budget 2007-08. In view of the sharp and spiraling escalation of international oil prices, the Government is adhering to the principle of 'equitable burden sharing' amongst the stakeholders, namely, the oil companies, Government and consumers.

For the year 2007-08, the Government has approved the following for reducing the burden of under-recoveries on the OMCs:

- (a) Issuance of Oil Bonds to the tune of 42.7% of the total estimated under-recoveries;
- (b) The Upstream Oil Companies to bear approximately 1/3<sup>rd</sup> of the under-recoveries by offering discounts on crude oil and petroleum products.
- (c) PDS Kerosene and domestic LPG Subsidy Scheme, 2002 & Freight Subsidy (For Far Flung Areas) Scheme 2002, extended at 1/3<sup>rd</sup> level of 2002-03, for three more years from 1.4.2007 to 31.3.2010.

### **17. Refining Capacity :**

At present, there are 19 refineries operating in the country, out of which 17 are in public sector and two in private sector. Out of the 17 Public Sector refineries 7 are owned by Indian Oil Corporation Limited (IOCL), 2 each by Chennai Petroleum Corporation Limited (a subsidiary of IOCL), Hindustan Petroleum Corporation Limited (HPCL), Bharat Petroleum Corporation Limited (BPCL) (Kochi Refinery merged with BPCL on 21-08-2006) and Oil and Natural Gas Corporation Limited, 1 each by Numaligarh Refinery Limited (a subsidiary of BPCL) and Bongaigaon Refineries and Petrochemicals (a subsidiary of IOCL). The private sector refineries belong to Reliance Industries Limited and Essar Oil Limited.

### **18. Installed Capacity :**

The present refining capacity is 148.97 MMTPA comprising of 105.47 MMTPA by PSUs and 43.50 MMTPA by private sector (Annexure-I). The country is not only self-sufficient in refining capacity for its domestic consumption but also exports petroleum products substantially.

**19. Capacity Additions in XIth Plan :**

If all the projects envisaged by different oil companies (PSU and Pvt.) are commissioned as projected then the capacity at the end of XIth plan period 2007-2012 would be 240.96 MMTPA. The capacity addition in 11<sup>th</sup> Plan Period is expected to be about 92 MMTPA (Annexure-II).

**20. National Auto Fuel Policy :**

In line with the road map laid in the Auto fuel Policy approved by the Government in October 2003, the following quality of fuel has been introduced all over the country:-

<b>Fuel quality</b>	<b>States/cities</b>	<b>Date of introduction</b>
Euro-III Petrol and Diesel	13 cities (Delhi/National Capital Region, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur, Agra, Solapur and Lucknow)	1.04.2005
BS-II Petrol	All over country	1.04.2005
BS-II Diesel	All States except Rajasthan, West U.P, Uttranchal, M.P, Punjab, H.P and Jammu & Kashmir	1.04.2005
	Rajasthan	1.06.2005
	West UP and Uttaranchal	1.07.2005
	Madhya Pradesh, Himachal Pradesh and Chandigarh	1.09.2005
	Punjab and Jammu & Kashmir	1.10.2005

Euro-III equivalent emission norms in the entire country and Euro-IV equivalent emission norms for all private vehicles, city public service vehicles and city commercial vehicles in the cities of Delhi/NCR, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur and Agra will be introduced from 1<sup>st</sup> April, 2010.

THE LOCATION AND CAPACITIES OF REFINERIES  
OPERATING IN INDIA

<u>S.No.</u>	<u>Name of the company</u>	<u>Location of the Refinery</u>	<u>Present Capacity (MMTPA)*</u>
<b>Public Sector</b>			
1.	Indian Oil Corporation Limited (IOCL)	Guwahati	1.00
2	IOCL	Barauni	6.00
3	IOCL	Koyali	13.70
4	IOCL	Haldia	6.00
5	IOCL	Mathura	8.00
6	IOCL	Digboi	0.65
7	IOCL	Panipat	12.00
8.	Hindustan Petroleum Corporation Limited (HPCL)	Mumbai	5.50
9	HPCL	Visakhapatnam	7.50
10.	Bharat Petroleum Corporation Limited (BPCL)	Mumbai	12.00
11	BPCL	Kochi	7.50
12.	Chennai Petroleum Corporation Limited (CPCL)	Manali	9.50
13	CPCL	Nagapattnam	1.00
14.	Bongaigaon Refinery & Petrochemicals Ltd. (BRPL)	Bongaigaon	2.35
15.	Numaligarh Refinery Ltd.(NRL)	Numaligarh	3.00
16.	Mangalore Refinery & Petrochemicals Ltd. (MRPL)	Mangalore	9.69
17.	Tatipaka Refinery (ONGC)	Andhra Pradesh	0.078

	<b>Private Sector</b>		
18	Reliance Petroleum Ltd. (RPL)	Jamnagar	33.00
19	Essar Oil Limited	Vadinar	10.50
	<b>TOTAL</b>		<b>148.97</b>

\* Million Metric Tonne Per Annum

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**REFINERY WISE CAPACITY ADDITION IN XI PLAN**

<b>S.NO.</b>	<b>REFINERY</b>	<b>MMTPA*</b>
	<b>PUBLIC SECTOR</b>	
1	Indian Oil Corporation Limited, Haldia	1.50
2	Indian Oil Corporation Limited, Panipat	3.00
3	Indian Oil Corporation Limited, Paradeep	15.00
4	Hindustan Petroleum Corporation Limited, Mumbai	2.40
5	Hindustan Petroleum Corporation Limited, Visakh	7.50
6	Hindustan Petroleum Corporation Limited, Bhatinda	9.00
7	Bharat Petroleum Corporation Limited, Bina	6.00
8.	BPCL, Kochi	2.00
9	Chennai Petroleum Corporation Limited, Chennai	1.70
10	Mangalore Refinery & Petrochemicals Limited, Mangalore	5.31
11	Oil & Natural Gas Corporation Ltd. Tatipaka	0.08
	<b>TOTAL PUBLIC SECTOR</b>	<b>53.49</b>
	<b>PRIVATE SECTOR</b>	
12	Reliance Petroleum Limited, Jamnagar (New)	29.00
13	Essar Oil Limited, Vadinar	3.50
14.	Nagarjuna Oil Corporation Limited ( NOCL)	6.00
	<b>TOTAL PRIVATE SECTOR</b>	<b>38.50</b>
	<b>GRAND TOTAL</b>	<b>91.99</b>

\* Million Metric Tonne Per Annum

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## **21. AUTO FUEL POLICY**

In line with the road map laid down in the Auto Fuel Policy, Euro – III Petrol & Diesel has been introduced in 100 cities including in most polluted cities viz., Delhi/National Capital Region, Mumbai, Kolkata, Chennai, Hyderabad, Bangalore, Ahmedabad, Pune, Agra, Kanpur, Lucknow, Nasik, As on 1.10.2007, Public Sector Oil Marketing Companies have set up 261 Auto LPG Dispensing Stations (ALDS) at existing retail outlets across the country for dispensing Auto LPG to vehicles. As per the road map for vehicular exhaust emission norms by April, 2005 and Euro IV of equivalent norms by the year 2010. For the rest of the country, vehicles exhaust emissions should conform to Euro III or equivalent norms by the year 2010.

## **22. ETHANOL BLENDED PETROL PROGRAMME**

Ministry of Petroleum & Natural Gas vide its notification dated 20<sup>th</sup> September, 2006 has directed the Oil Marketing Companies (OMCs) to sell 5% Ethanol Blended Petrol (EBP) subject to commercial viability as per Bureau of Indian Standards specifications in entire country except North-Eastern States, Jammu & Kashmir, Andaman & Nicobar Islands and Lakshdweep with effect from 1<sup>st</sup> November, 2006.

The purchase price of ethanol is discovered and finalized by the OMCs through open tender system as per CVC guidelines. At present 5% EBP programme is being implemented in 17 States and OMCs have finalised tenders for ethanol in all these States. The EBP releases have since commenced at all locations in 15 States and 4 Union Territories. With this, about 70% of the identified States have been covered. The requirement of ethanol for the three year period is 180 crore litres. The

OMCs have been able to contract 140 crore litres. They have so far procured only 19.35 crore litres under the programme (as on 31.12.2007).

CCEA has taken following decisions on 9<sup>th</sup> October, 2007 regarding EBP Programme:

- (i) 5% blending of ethanol will be mandatory and 10% blending will be optional from October 2007 and thereafter mandatory from October, 2008.
- (ii) Purchase price of ethanol has been fixed at Rs. 21.50 per/ltr. ex-factory on uniform basis for next three years.

### **23. BIO- DIESEL PURCHASE POLICY**

To encourage production of bio-diesel in the country, the Ministry of Petroleum and Natural Gas announced a Bio-diesel Purchase Policy, in October 2005, which became effective from 1.1.2006. The Policy has identified 20 purchase Centres of the public sector Oil Marketing Companies (OMCs) all over the country. The OMCs would purchase bio-diesel meeting the standards prescribed by the Bureau of Indian Standards (BIS), from those bio-diesel manufacturers who register with them after satisfying the technical specifications, at a specified delivered price. Depending upon felt need and preparedness, the OMCs could also open more purchase Centres.

Public Sector, Oil Marketing Companies have not been able to purchase bio-diesel at the identified purchase Centres so far, as the parties who have expressed interest are not willing to supply at the declared price. Facilities are not yet ready with other parties who have expressed their interest.

The bio- diesel industry is at nascent stage of growth, Ministry of Rural Development is the Nodal Ministry of National Mission on bio-diesel for production of bio-diesel.