Conservation of Petroleum Products & Environmental Issues (India)

A very high priority is attached by the Government to conservation of petroleum products in view of the need to reduce ever increasing gap between demand for and indigenous supply of crude oil and petroleum products.

OVERALL STRATEGY OF PROMOTING OIL CONSERVATION

Government has initiated various steps to promote conservation of petroleum products in the transport, industrial, agricultural and domestic sectors. These include adoption of measures and practices which are conducive to increase fuel efficiency and training programme in the transport sector; modernisation of boilers, furnaces and other oil operated equipments with efficient ones and promotion of fuel efficient practices and equipment in the industrial sector; standardisation of fuel efficient irrigator pumpsets and rectification of existing pumpsets to make them more energy efficient in the agricultural sector and development as well as promotion of the use of fuel efficient equipment and appliances like kerosene and LPG stoves in the household sector. These activities are promoted and coordinated by the Petroleum Conservation Research Association (PCRA) and Oil Marketing Companies under the guidance and supervision of Ministry of Petroleum & Natural Gas.

MULTI MEDIA MASS AWARENESS CAMPAIGN

An important promotional activity is the multi-media campaigns for creating mass awareness about the need for conserving petroleum products and for informing and motivating users to take concrete steps to actually conserve such products. Oil Marketing Companies have also been playing an important role in using various media for creating mass awareness.

OIL CONSERVATION WEEK

Going by the experience of the first 011 Conservation Week organised in January, 1991, 011 Conservation Week was organised during each of the subsequent years by the Oil Sector as a whole in close coordination with the concerned Ministries/Departments of the Union Government, State Governments, Public Sector Undertakings, Chamber of Commerce etc., throughout the country to enlarge the base of mass awareness. A number of activities apart from multimedia mass awareness and education campaign, were organised during the 011 Conservation Week. Encouraged, by the results of 011 Conservation Weeks observed in the past, Oil Conservation Fortnight was observed in 1997 and 1998 from 1-14 February. During the Oil Conservation Fortnight 1997, as also in February, 1998, approximately 120000 activities were organised, apart from other programmes in 1997. The assessment for OCF 1998 is underway.
LUBRICANTS UPGRADE PLAN

In view of the excellent potential for conservation of liquid fuels and lubricating oils through quality upgradation of automotive lubricants, an action plan to produce and sell high grade lubricants to the extent of about 2.50 lakh tonnes per year to replace lubricants of lower efficiency in a phased manner was formulated and Oil Companies were directed to implement it. Oil Companies have implemented it fully.

INTER FUEL SUBSTITUTION

Compressed Natural Gas (CNG)

Compressed Natural Gas (CNG) is used as a fuel in transport sector in many countries. The advantages that it is safe and clean burning fuel, besides being environment friendly fuel- It has been established that exhaust emissions like hydrocarbons and carbon monoxide are significantly reduced as compared to other fuels. Toxic emissions such as lead and sulphur are completely eliminated. Existing petrol vehicles can use CNG by fitting a conversion kit. The CNG converted vehicles, have the flexibility of operating either on petrol or on CNG. An experimental programme to use CNG as fuel in transport sector in the country was initiated by GAIL'N 1992. Under this programme CNG is made available by GAIL in Delhi, Mumbai and Baroda. The supply of CNG in Mumbai is now managed by Mahanagar Gas Nigam Ltd. CNG is also available in Surat, where it is made available by a private company. The average cost of converting a petrol car to CNG is about Rs.35,000. There are about 5500 CNG converted petrol vehicles in Mumbai and about 1000 such vehicles in Delhi.

Four CNG dispensing, retail outlets on mother-daughter concepts have been set up in Delhi. Under this system, Natural Gas is compressed and filled into truck mounted cascades (basket of cylinders) in the mother compressor station and transported to daughter units for dispensing to CNG vehicle. The mother station initially set up in Ghaziabad has been relocated and brought near to Delhi at Sarai Kale Khan, in May, 1997. At present there are five daughter and four on-line dispensing retail outlets in Delhi.

The efforts made by DTC to run few diesel vehicles on CNG was discontinued as it has not produced encouraging results due to very high cost of conversion, maintenance problems due to complicated technology, very low rate of substitution of diesel by CNG, lower price of diesel as compared to CNG etc.

Feasibility of Ethanol/Mothanol as automotive fuel

It has been established that 3% of methanol and 5% of ethanol can be blended with petrol and used in vehicles Without any modification of engine.
At the instance of the Prime Minister's office, a committee under the Chairmanship of Secretary (Food) was set up in August, 1996 by Ministry of Food to explore the possibility of ethanol produced from Sugar cane being blended with gasoline to substitute petrol. The report of the committee is awaited. Earlier, test marketing of 3% Methanol blended gasoline was undertaken in Baroda but was discontinued due to technical problems.

In pursuance of a direction from Supreme Court, Gas Authority of India Ltd. has committed to supply propane to a private company for running 50 three wheelers on propane, under pilot project.

SUBSTITUTION OF KEROSENE IN TEXTILE PRINTING

A programme to replace the use of kerosene in textile pigment printing with synthetic thickeners has been under implementation. The objective is to achieve 40 to 50% conservation of kerosene in this application which would not necessitate any significant technological changes to be made by the textile industry. For achieving this, the respective State Governments were advised to reduce quota of kerosene for pigment printing of textiles sold in the domestic markets.

CONSERVATION OF HYDROCARBONS IN REFINERIES

The oil refineries are implementing various schemes like revamping and replacement of inefficient furnaces and boilers and installation of heat exchangers, economisers and @eneraflon equipments etc. apart from adoption of improved house keeping pracfices for conservation of hydrocarbons.

CONSERVATION IN UPSTREAM SECTOR

A variety of effective and result-oriented conservation methods have also been adopted by the Undertakings in the 011 Sector, which zire engaged in the upstream activities like exploration, production and transportation of crude oil and natural gas.

PETROLEUM CONSERVATION RESEARCH ASSOCIATION

As a part of the Government's response to the oil crisis of early seventies, the Petroleum Conservation Research Association (PCRA) was set up in 1976 to undertake studies for identifying the potential and to make recommendations for achieving conservation of petroleum products in various sectors of the economy. The PCRA was also entrusted with the task of sponsoring R&D activities for the development of fuel-efficient equipment/devices and running a multimedia campaign for creating mass awareness for the conservation of petroleum products. The Oil Marketing Companies have also been making efforts to promote oil conservation to give a greater thrust to oil conservation efforts and provide support and effectiveness of the PCRA etc. A Conservation Cell was established In the Ministry in July, 1989.
The major activities of the Petroleum Conservation Research Association (PCRA) are the creation of mass awareness on the need for the conservation of petroleum products, promotion of measures to curb wasteful practices and improve the oil use efficiency of equipment, devices and vehicles, and research and development for improving oil use efficiency in various other end uses. As a result of the efforts made by and through the PCRA an estimated saving of about Rs. 570 crores was achieved during 1995-96 as against Rs.491 crores during 1994-95.

ENVIRONMENTAL ISSUES

Upgradation Of Fuel Quality

Introduction of Unleaded petrol low sulphur HSD

In pursuance of the need for reduction of environmental pollution due to emission from vehicles, the Oil Companies have already made available unleaded petrol in the four metros of Delhi, Mumbai, Calcutta, Madras and radial routes emanating from these metros and in the city of Agra from April, 1995. The availability of unleaded petrol would be further extended to Capital of state and Union Territories by June, 1998 and throughout the country by 1999-2000. On the direction of the Ministry, Oil Companies have already started supplying High Speed Diesel (HSD) with reduced sulphur content of 0.5% maximum as against the existing level of 1% from 1.4.96 in the four metros and petrol with reduced lead content of 0.15g/ltr. (maximum) all over the country from December, 1996. It has also been planned to supply very low sulphur HSD i.e. containing maximum of 0.25% sulphur throughout the country from 1.4.1999. However, considering the high impact of pollution, the schedule was preponed for Agra and Delhi and the same was introduced from 1.9.96 in Agra and from 14.8.97 in Delhi.

Protection Of Taj Mahal

Ten Point initiative for reduction of pollution in Taj

In recent years, the impact of air pollution on the Taj Mahal has become a matter of grave concern. It has been recognised that corrosive impact of pollutants and emissions from industries, vehicles etc., in the vicinity of Taj needs to be addressed first. Keeping this in view, Minister of Petroleum & Natural Gas, has launched a 10 point programme aimed at reducing air pollution for protection of this national monument by introducing cleaner fuels. The progress of implementation of the programme is closely monitored by a task force set up in the Ministry. The point-wise status of implementation of the programme is given below:

i) LPG for all house holds

The entire waiting list for LPG connections in Taj Trapezium area has been
cleared and connections are now offered across the counter.

ii) **Supply of lead free Petrol**

Unleaded petrol has been made available through 22 retail outlets in Agra. Low lead petrol containing a maximum lead content of 0.15 gm\ltr. is also available in all the outlets,

iii) **Preferential allocation of LPG for industries**

Under this programme Oil Companies are in position to supply LPG to industries and commercial establishment in the Taj Trapezium area. But the demand from the industry has been very poor.

Source: [http://petroleum.nic.in](http://petroleum.nic.in) 07/17/2003