

Chapter 5 Environmental Aspects

Petroleum refinery, during the conversion process of crude, impacts the environment and the eco system. Potential environmental issues associated with petroleum refining include air pollution, water pollution, noise pollution, land pollution, waste water and other hazardous materials.

The Company incorporated environmental-friendly technologies in its process systems to ensure fuel reduction, manage air emission, conserve water and manage waste water. Audit observed that the Company generally complied with the norms of emission prescribed by the Pollution Control Board. However, there was scope for further improvement as discussed in the following paragraphs:

5.1 Non-installation of Flare Gas Recovery System

The Company generates and releases various obnoxious gases during the process of refining. While according Environmental Clearance for Phase III Expansion, MoEF had directed (April 2008) the Company to install Flare Gas Recovery System (FGRS) for the reduction of Hydrocarbon loss and emission of obnoxious gases to the environment. The Company, however, deferred the installation of FGRS at design stage stating non-availability of flaring data from Phase III process units complex, though budgetary allocation of ₹ 20 crore was made for FGRS.

It was observed in audit that the Company commissioned various units under Phase III expansion (March 2012 to June 2015) without installing the FGRS which was not in compliance to the Environmental Clearance accorded by MoEF. It was further seen that the Company, after a delay of 7 years, commenced (September 2015) the process to install FGRS at an estimated cost of ₹ 30 crore for which it selected (May 2016) MECON as Engineering consultant. However, it is yet to place order for the installation of FGRS (November 2016).

Thus, the Company not only failed to comply with the provisions of Environmental Clearance accorded by MoEF but also lost the opportunity of recovering flare gas which could have been utilized as fuel gas monetary impact of which worked out to ₹ 67 crore for the five year period ending March 2016.

The Company stated (November 2016) that it could not design the flare recovery system due to non availability actual flare operating data.

The reply is not acceptable as non-compliance with the provision of the Environmental Clearance on the grounds of non-availability of data cannot be a proper justification.

In the Exit Conference (June 2017) with the Ministry, the Company informed (June 2017) that installation of FGRS is in process and was expected to be installed in December 2017.

5.2 Non-development of green belt

While according the Environmental Clearance to the Phase III Expansion Project, MoEF directed (April 2008) the Company to dedicate 33 *per cent* of the project area for green belt development by associating the local Forest department. The Company earmarked (September 2010) 120 acres for establishing green belt to mitigate the possible fugitive emissions, control noise pollutions, soil conservation and creation of an aesthetic atmosphere in the refinery premises for which Company estimated an expenditure of ₹ 2.10 crore in a period of 4-5 years. A work order in this regard was issued (March 2011) for ₹ 1.91 crore to the State Forest Department (SFD) for taking up the project during the years 2011-2016. The plantation work was to be completed by September 2013 and maintenance work was to be completed by March 2016.

Audit observed that SFD had planted 1,759 seedlings covering an area of 5.30 acres only during the years 2011-13 and there was no progress afterwards.

The Company replied (November 2016) that there was shortfall of land for green belt due to utilization of land for Phase III project. The Company further stated that it is acquiring additional land of 27 acres for augmenting green belt

Ministry did not furnish any reply.

5.3 Delay in complying with the directions of Pollution Control Board

The Delayed Coker Unit (DCU) produces valuable distillates and Petroleum Coke (Pet Coke). The pet coke is transported by a closed conveyer system to open coke lay down area and to truck loading facility through Silos (3x1000 MT). Similarly, sulphur produced in Sulphur Recovery Unit is (SRU) stored in open yard and in 6 Silos.

The Karnataka State Pollution Control Board (KSPCB), during the year 2014 and 2015, issued various show cause notices to the Company with regard to dust emissions and surface water contamination from the Phase III coke yard and sulphur yard. KSPCB suggested

(March 2015) covering the coke yard and the sulphur yard completely to avoid dust pollution. KSPCB also recommended providing permanent arrangement for collection and recycling of the wash water in the coke yard, so that the wash water containing suspended particulate matter is not allowed to overflow to the nearby natural drains that pass through the neighbouring villages.

The Company, therefore, proposed (September 2015) to install three additional Silos of 3,000 MT each or five new Silos of 1,000 MT each with suitable conveyor connectivity and unloading facility for pet coke, suitable wash water management facility in the coke yard and covered shed in the sulphur yard at a cost of ₹ 52 crore. However, despite passage of more than one year, the contract for construction of the above facilities was yet to be awarded (November 2016). Consequently, the pollution hazards caused by these units were not mitigated.

The Company replied (November 2016) that it took all effort to comply with the conditions laid down by the KSPCB to avoid contamination of water and air pollution.

The fact remains that none of the suggestions made by KSPCB in March 2015 were complied with as yet (November 2016).

Ministry did not furnish any reply.

5.4 Inadequate creation and management of water resources

Refinery needs a large quantum of water to process crude. The Company had to shut down its refinery in April 2012 (12 April 2012 to 27 April 2012) due to water scarcity.

As the Company had not fixed any norms for water consumption for all processing stages of its production, based on the advice (April 2014) of KSPCB, it requested National Productivity Council (NPC) to conduct a comprehensive water audit study in its refinery for Phase I and II.

The NPC, among other things, recommended (November 2014) to maximise condensate recovery in plant to reduce the water intake from the resource and conserve water in order to reduce pumping cost, demineralisation cost and load on Effluent Treatment Plant. It identified four locations for recovering rain water. It also recommended deployment of storm water harvesting technique and proper channelization of water to capture uncontaminated storm water and not let out rain water to drains.

The Company was yet (November 2016) to take action on any of the above recommendations.

The Company replied (November 2016) that it was conducting a feasibility study to set up a Desalination Plant and initiated action for setting up a Reverse Osmosis Unit for tertiary treatment of effluent water. Further, the Company stated that they would establish water foot print bench mark by the use of best practices or best available technologies or by selecting the water foot print achieved by the best performers in the Oil sector.

Ministry did not furnish any reply.

5.5 Non-participation in the Clean Development Mechanism

United Nations Framework Convention on Climate Change (UNFCCC) in Kyoto protocol introduced Clean Development Mechanism (CDM) concept to achieve stabilization of Green House Gases concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system. As India is a signatory to Kyoto protocol, GoI established (April 2004) National Clean Development Mechanism Authority (NCDMA) so that entities whether private / public or non-governmental could participate in CDM process.

Audit observed that the Company did not have any proposal to register any of its projects which had potential for getting benefits under CDM in the form of 'Certified Emission Reduction' (CER) credit, which are tradable.

The Company replied (November 2016) that it would initiate necessary steps for registering projects under CDM.

Ministry did not furnish any reply.