

EXECUTIVE SUMMARY

1 Background

Capital Development Authority (CDA) and Metropolitan Corporation Islamabad (MCI) have a significant role in infrastructure development and its improvement of Capital Territory. The development works are being carried out by MCI sub departments. Most particularly, Machinery Pool Organization (MPO), located at sector H-10 established in late 1970s, has major role in rehabilitation and carpeting of sectorial and other roads in Islamabad. The MPO directorate comes under the engineering wing and is headed by a director. This plant has been upgraded with time in order to avoid pollution. Similarly, MPO Asphalt Mixing Plant has a production capacity of 70 to 80 tons per hour, which can carpet an area of 135 square feet.

2 Policy and Legal Framework

The Asphalt Mixing Plant at Directorate of MPO, MCI has been on ground functionally since 1970s. It lies along Kashmir Highway, Islamabad, surrounded by dense plantation with no population around. It is a mandatory for environmental approval, following the standards prescribed under Section 12 of Environmental Protection Act, 1997. MPO Directorate has put up an effort in better environmental management of Asphalt Mixing Plant in consultation with Director General Pakistan Environmental Protection Agency (Pak-EPA).

Categorization of projects for IEE and EIA is one of the main components of the Regulations. Projects have been classified on the basis of expected degree of adverse environmental impacts. Project types listed in Schedule-I are designated as potentially less damaging to the environment and those listed in Schedule-II as having potentially serious adverse effects. Schedule-I projects require an IEE to be conducted, provided they are not located in environmentally sensitive areas whereas Schedule II projects require an EIA.

Initial Environmental Examination (IEE) process is a widely used tool to examine certain human activities that may have negative impacts on the environment in advance of project initiation. Projects instituted without the benefit of this scrutiny led to persistent environmental problems and hence the need to anticipate and avoid these problems not possible.

Thus, in order to comply with environmental standards, a detailed IEE study has been conducted by a team of Sustainable Environmental Management (SEM) Private Limited to get environmental clearance from Pakistan Environmental Protection Agency (Pak-EPA). The environmental assessment has been carried out on voluntary basis, considering MPO as a state entity, which will serve the purpose of research in future on similar assignments. After the approval, a periodic monitoring shall be

suggested to maintain the operations of plant within the permissible limits of NEQs and other environmental standards.

3 Baseline Environmental Study

Information on baseline study has been derived from the desk study of available data and critical observation of plant operational and non operational conditions. Hence, the plant site was visited by team of experts and came out with authentic information on air quality, water quality, noise levels and other meteorological information of plant site area.

On June 28, 2019 the physical environmental parameter were determined, 24 hour monitoring for air, water and noise carried out when the asphalt plant was in non-operation phase. During baseline environmental survey on asphalt plant site, it was recorded that average temperature ranges from 26°C to 36°C and is rarely below 22°C or above 40°C . In Islamabad on June 28,2019 the average percentage of the sky covered by clouds does not show significant systematic variation over the course of the day, with the percentage of time that the sky is overcast or mostly cloudy remaining about 3%throughout the day.

During plant operational activity on July1,2019 the physical environmental parameter were carried out again to find out the difference of impact on environment during operational and nonoperational phase of asphalt plant .On that day, the temperature in Islamabad typically ranges from 26°C to 36°C and is rarely below 23°C or above 40°C . In Islamabad on July 1, 2019 the average percentage of the sky covered by clouds does not show significant systematic variation over the course of the day, with the percentage of time that the sky is *overcast* or *mostly cloudy* remaining about 3% throughout the day.

4 Impact Assessment and Mitigation Measures

The main source of stack dust is from raw materials (typically stone aggregates) that are used for the production of the asphalt and are of the inert type. Any airborne pollutants from the process or transport of raw or finished product can potentially settle on the ground. Hydrocarbons in dust may also result from the combustion depending on the type of fuel. The most common air pollutants from hot mix asphalt plants are particulate matter with a diameter of no more than 10 microns (PM10) which is generated by the aggregates. The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into lungs, and some may even get into bloodstream. Exposure to such particles can affect both lungs and your heart.

The emission of dust occurs in the first stages of the production of asphalt (until mixing). The most significant source of process particulate emission is the drying process. Other sources of emission include storage of raw materials, cold feed unit, filler silos, hot side screens and elevators. The impact of atmospheric pollution on the environment is characterized by acidification of the atmosphere and of an eventual build-up of its concentration in the atmosphere. This may result in extreme cases in the production of acid rain which can have very devastating consequences on the environment including flora, fauna, water bodies and particular buildings made from limestone. The environmental quality was examined by the analysis of NO_x, SO_x, Particulate matter, water and waste analysis. This was highly appreciated that the limits of all the gases were found below the permissible limits of National Environmental Quality Standards (NEQs) of Pakistan. However, certain mitigation measures were recommended in order to improve the environmental quality in a better way.

The sulphur content of the fuel and the rate of absorption in the alkaline dust layer are normally formed on the filter. By using fuel with lower sulphur content or achieving a higher degree of absorption, a reduction of SO₂ emissions can be accomplished. Limestone in the particulate collectors can help to absorb SO₂. However, it should be noted on quarterly basis that the emissions of SO₂ will be minimal and therefore do not pose any environmental threat.

The formation of NO_x is predominantly determined by burner and flame characteristics (flame temperature, burner type and amount of excess burning air). Also the nitrogen content of the fuel influences NO_x emission. The emission of gas-fired plants is lower than for oil-fired plants. Improved burner technology of the plant will substantially reduce NO_x emissions from the plant.

An incomplete combustion results among other things in the formation of CO. Abatement of CO emissions therefore requires improvement of the combustion process. The correct air-fuel mixture and appropriate retention time will be adopted in order to ensure complete combustion thereby limiting CO production. The emission of VOCs finds its most important origin in the incomplete combustion of fuel. The kind of fuel and the burner characteristics as well as the geometry of the drying drum influence the eventual amount and composition of the organic emission.

For the personnel they will be supplied with Personal Protective Equipment (PPEs) in order not to impair on their health as a result of over exposure to noise. It is expected that the resultant noise generated will be within the required norms. Moreover, the exhaust Asphalt plant is fitted a very good acoustic design to arrest noise pollution. The placement of a sound absorber or screen at the intake will also be envisaged. The environmental management plan (EMP) is an

important part of environmental management plan that has been given so that environmental quality may be checked on quarterly basis. Based on the mitigation measures, it is suggested a quarterly monitoring of environment. The EMP shall be implemented during operational activities of asphalt plant.

5 Conclusion

It is concluded with solid justification that the Asphalt Mixing Plant at MPO Directorate is equipped with the latest Technology in term of pollution control devices. For dust control the Plant has two dust collectors one is primary dust collection unit and the other one is the secondary dust collection unit. The Plant site is surrounding by trees which are acting as a dust barrier. The Asphalt Mixing Plant consists of the following latest components. Similarly, it is also noticed that the plant has Mixer, Vibrating Screen, Dryer and Burner unit, Hot oil Heater, Asphalt tank and Kettle, cold Bin and Feeder and Wet cyclone.

All relevant data has been collected to establish base line Environmental conditions for the environmental impacts in accordance with the applicable Laws and Regulations. The information on environmental quality has revealed that the Asphalt Mixing Plant is working in conformity with Environmental standards and it is not breaching the National Environmental Quality Standards (NEQs).

It is noted that despite of being closer to Kashmir Highway, a major route for entrance and exit of Islamabad, the plant is well operated. The plant can save millions by generating its own business. Moreover, the carpeting of roads and streets in Islamabad is carried out in much cheaper rates than awarding to a contractor. Most importantly, the MPO Asphalt Mixing Plant is not consuming government resources; rather it is saving the resources and generating revenue for Metropolitan Corporation Islamabad.

Hence, it is achieved a qualitative information on MPO Asphalt Mixing Plant with respect to environmental protection. From the results of air quality, water quality and noise, it is revealed that as a state entity, this installed facility (MPO Asphalt Mixing Plant) is saving the resources without damaging environmental quality, which can be declared as one of its kind facility for any government department. Moreover, these achievements have been made within the available resources of MPO Directorate, without incurring any expenditure.

CHAPTER 01 INTRODUCTION

1.1 GENERAL

This Document presents the findings of the initial environmental Examination IEE carried out for the proposed project titled “MCI Asphalt plant sector H-10”. This IEE report has been prepared to conform to the requirements of Section 12 of the Pakistan Environmental Protection Act 1997 (PEPA), the Pakistan Initial Environmental Examination and Environmental Impact Assessment Review Regulations, 2000 and the guidelines provided in the Pakistan Environmental Assessment Procedures, 1997.

1.2 THE PROJECT

Metropolitan Corporation Islamabad plays a vital role in developing infrastructure of the area within the Islamabad periphery. Different departments within MCI have different tasks to carry out development works. Hence, Machinery Pool Organization (MPO) as sub department of Metropolitan Corporation Islamabad (MCI), located at sector H-10 established in late 1970s, has major role in rehabilitation and carpeting of sectorial and other roads in Islamabad. The MPO directorate comes under the engineering wing and is headed by a director. There are two deputy directors, each heading a division, namely the operations division and the maintenance division. Each division has three assistant directors heading sections. Each division has a divisional accounts officer reporting to deputy directors who also act as the drawing and disbursement officers. Asphalt Mixing Plant installed at MPO office in late 1970s which is upgraded with time with latest gadget to avoid pollution. The Asphalt Mixing Plant has been made fully functional in Machinery Pool Organization (MPO) of Metropolitan Corporation Islamabad (MCI) and its daily production capacity is 70 to 80 tons per hour, which can carpet an area of 135 square feet.

1.3 POLICIES AND LEGISLATION RELATED TO ISLAMABAD

This section provides an overview of the policy framework, national legislation and other guidelines regarding environment. The study is organized in light of laws, regulations and guidelines most relevant to scope of the project so that it becomes submissive with national legislations, most importantly, PEPA 1997.

1.4 ICT DEVELOPMENT LAWS AND REGULATIONS

The Metropolitan Corporation Islamabad (MCI) has the responsibility for the overall planning, provision and supervision of public health services, covering adequate sanitation and garbage disposal within the territorial limits of Islamabad Capital Territory (ICT). It also has the responsibility for the coordination of public health services with other relevant agencies. This includes collection, transportation and safe disposal of liquid and solid waste collected from residential areas, commercial areas, open spaces etc. The MCI operations are