

REGULATIONS ON FUEL EXTRACTION AND COMBUSTION

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Summary

Fossil fuels—solid, liquid and gaseous—are extracted from under the earth and the extractive industry is a major source of air, water and land pollutants. Leaving aside the sectoral regulations on pollution control, preventive and remedial measures are offered by regulations on mining of minerals and fuels. These fuels, during combustion, are major sources of air pollution. Although local combustion, which is difficult to control, is a serious concern, as is combustion of fuel by the increasing number of motor vehicles, regulatory practices are basically becoming more effective, particularly in the case of large thermal power plants. Control of local combustion remains within the realm of the local authority and effectivity depends on effective enforcement and compliance. Emission from vehicles are controlled by product standards and emission limits, but the increase in the numbers of cars offset any advantage.

1. Introduction

As has been stated in the other contributions in this Topic (*Environmental Pollution Regulations*), the planning system can provide the first line of defense against pollution; this is equally true in the sphere of fuel extraction and combustion as the industrial facilities to be establishment for these purposes must undergo the same procedures required by legislation, with the possible exemptions of mobile plants, vehicles etc. Fuel, whether solid, liquid or gaseous in form, is usually derived from under the earth's

surface, be it at the bottom of the sea or located under land, and the process of extraction and its consequent processing and/or transport to the point of use involve a variety of processes which necessarily produce a host of pollutants which are discharged and/or deposited in air, water and land. (This does not include other consequent environmental damage, such as derelict land, changing of water level etc). Usually the pollution control regulations as discussed (see *Regulation of Air Pollutants*, *Regulations of Water Pollutants*, and *Regulation of Land Pollutants and Solid Waste Disposal*) are applicable to fuel extraction facilities and will not be presented here. However, fuel combustion facilities, although belonging to the industrial facilities, due to their special contributions to air pollution, have been subjected to special legislative measures in many industrial countries. Those regulations will be discussed very briefly for the overall orientation of the reader.

2. Planning Control for Fuel Extraction and Combustion Facilities

Fossil fuel, whether solid, liquid or gaseous, is usually extracted or mined from under the earth. Therefore, at the site of the fuel deposit, either inland or offshore, some industrial facility has to be built and planning permission has to be obtained. The real controls which the planning system can use over the development of the fuel extraction facility (underground mine, open pit, borehole, oil well, offshore platform, etc.) are: over material changes of use and over operations. Thus, if an open pit operation needs to go underground, or *vice versa*, it requires planning permission. If a coal processing plant needs to be established near a thermal power station, it requires planning permission. If six new batteries are to be added to an existing row of batteries, it requires planning permission. Therefore, planning control has an important role to play in pollution regulation but this itself is not the only factor to determine planning permission. The planning authorities look also at the “development potential” of each application, such as generation of employment, improvement of infrastructure facilities, coherence to national planning policy, etc.

Applications involving the extraction of fuel are treated legally and procedurally in the same way as other planning applications. The only difference is that it is necessary to take into account national and local fuel policies, if there are any. As fuels are considered to be minerals, there is supposed to be a mineral plan for the particular area within which the fuel deposit is available. This is particularly true in case of solid fuels like coal. Often, such sites may be considered as a future waste disposal site (especially in the case of open pits) and the mineral planning authorities may include waste policies in the mineral local plan.

Fuel extraction requires all sorts of auxiliary processes and these may lead to: availability of hazardous substances, pollution of air and water, deposition of wastes, endangering of natural resources, damage to agricultural land, etc. If such dangers exist or there are reasons to believe such may arise, the planning authority may need, if authorized by the statute, to consult with the responsible regulatory agencies. For example, if a coal mining operation is being planned within a site of special scientific interest or national park area, and if there is no prohibition on extraction of coal within

such an area, then the planning authority may consult the nature conservation agency on this issue.

Environmental Impact Assessment is obligatory for some development projects. It is noted that except for large thermal power stations or other combustion installations with a heat output of 300 megawatts or more, almost all other projects related to fuel extraction and fuel combustion do not necessarily have to have an EIA unless there are likely to be significant environmental effects by virtue of factors such as their nature, size or location,. Looking into the real situation of the fossil fuel extraction industry, it may be said that factors such as the sensitivity of the location, the size of the project, working methods, proposals for disposal of wastes, the nature and extent of processing and ancillary operations, the arrangements for transporting minerals away from the site and the duration of the proposed workings, are likely to be particularly relevant for considering whether the proposed extraction facilities will require environment impact assessment or not.

The example mentioned above, a proposed coal mine in a national park, will clearly require such an environmental statement. It can be said with certainty that at present almost all extraction facilities with the possible exception of pocket deposits, will be subject to the EIA process in industrialized nations where EIA is a regulatory requirement. In the case of oil and gas production the main considerations will be the sensitivity of the area (for example, offshore drilling), the volume to be produced and the method of transporting it. Exploratory drilling does not require EIA except when it is done in a sensitive area.

3. Pollution Control during Fuel Extraction

Pollution problems arising out of fuel extraction facilities can be grouped as under: air pollution; water pollution, pollution due to wastes on land, pollution from hazardous substances, etc. Leaving these classical examples of pollution, fuel extraction can lead to extensive damage of land, endanger species, infrastructure and other facilities. However, the present discussion is particularly related to pollution problems.

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Biographical Sketch

After graduating from Calcutta University (India) in 1967, **Dr. Prabir Ganguly** worked for four years in Indian coal mines in various capacities, rising to the position of Manager of a large coal mine. In 1971 he went to what was then Czechoslovakia to do his PhD, which he completed in 1975. He worked in the coal industry in India until 1980 as a senior planning engineer. In 1980 he took up an assignment to work at the University of Liberia in West Africa. He completed this assignment in 1986, following which he joined the Faculty of the Technical University of Ostrava in the Czech Republic. During his tenure at that university he became head of the Institute of Environmental Engineering and "Phare Project Management Cell" of the university. Currently he is the Director of the Centre for European Studies of that university.

Dr. Ganguly has been responsible for organising and participating in several international postgraduate teaching and training programmes sponsored by the Commission of the European Communities, as well as a number of international conferences and seminars.

Dr. Ganguly has published widely, mainly on sustainable development, environmental protection and related issues. He is on the Editorial Board of the journal, *Environment, Development and Sustainability* published by the Kluwer Academic Publishers of Dordrecht, the Netherlands.