

**WEACAU-III: International Workshop on
Environmental Aspects of Coal Ash Utilization**

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The Role of Regulation in the Promotion of CCP's Uses in Israel

Omri Lulav
National Coal Ash Board, Israel

Abstract

The beneficial uses of coal ash as a valuable economic resource are promoted through a number of channels: scientific, technological, engineering, environmental, economic and public opinion. However, while in all these avenues, with the exception of the public opinion one, the suitability of CCPs for use is tested by objective, measurable parameters, the public dimension is contingent on the subjective judgment of public opinion. This opinion is naturally affected by fear of the unknown. Meeting objective tests should suffice to justify the various uses of coal ash, yet passing the test of public trust is a necessary condition, without which the potential for beneficial use cannot be realized.

In a disposal system which is based on the exploitation of coal ash in an open and competitive economy, the willingness of potential users to take advantage of the potential benefits from its use is a necessary condition for the proper functioning of the power stations. If the market regards coal ash as a hazardous substance, those using the ash would naturally be subject to commercial and litigation risks that could eliminate their motivation to use it. That coal ash be accepted in the business community and the community at large, is of strategic importance, since the manufacture of electricity imposes on those involved in it a special commitment to bridge the gap between the facts and the image, between reality and ideology, in order to create a public atmosphere that supports the uses of coal ash and to insure the reliable manufacture of electricity.

Coal ash is composed of mineral particles characterized by known chemical and physical properties, which result in a very broad spectrum of interactions with the environment, both natural and man-made, depending on the properties of the specific ash. This reactivity of the ash can, on the one hand, be beneficially exploited in a variety of applications, and on the other, affect environmental processes that significantly impact health. However, because coal ash is a byproduct of an industrial process, the public relates to it as a waste material that when disposed of in the soil endangers its health.

When implemented in a controlled fashion, subject to the technological requirements that apply to a given application, the environmental impact of coal ash in its various uses is limited to negligible. However, in the eyes of the public, which tends to exaggerate potential dangers on the basis of partial knowledge, risk associated with coal ash use is magnified to be a real and certain danger. To the public, the ash is no more than hazardous waste, whose owner and producer, Israel Electric Corp., wishes to get rid of in the cheapest way possible without concern for the environmental implications of its disposal.

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Labeling the ash as “waste,” even when beneficial use is made of it and as “hazardous,” even when its environmental impact is negligible, poses a threat to the acceptance and legitimacy of coal ash applications, and represents an obstacle to its use. Such public attitudes disrupt the functioning of the licensing and regulation systems and deter potential users.

To change the designation of coal ash from hazardous waste to an industrial product like all other industrial substances that are exploited for legitimate purposes, it is necessary to gain the public's trust in the statement that the ash's applications are carried out subject to technological and environmental conditions that guarantee that no damage will be caused to the environment or to human beings and that these conditions and the tools adopted to enforce them were formulated by a process that meets all accepted normative criteria.

The Israeli National Coal Ash Board (NCAB), is a public body that collaborates with licensing bodies - the Ministries of Environmental Protection and Interior – and works with the “problem generators” - the electric and coal companies. NCAB is led by the ministry that bears the overall responsibility for the functioning of the electric economy - the Ministry of Energy and Water Resources. It has created an organizational structure and action mechanisms that allow it to perform the functions required from regulatory and licensing authorities, namely, guarding public welfare in the most comprehensive sense, i.e., focusing on the advancement of the use of coal ash while undertaking a balanced and responsible assessment of the economic and environmental implications of that use, with an eye to sustainable development.

Two basic organizational goals guide the activities of the NCAB in the process of building a regulatory infrastructure:

- ▶ The environmental requirements must be based on research findings that are focused on the interaction of the coal ash with the environment in the ash's various applications. The necessary comprehensive research is to be carried out in the leading institutions in the relevant fields in Israel and the world.
- ▶ Cooperation of leading experts in the relevant scientific-professional fields from Israel and the world in the framework of steering committees and research teams is needed to diagnose the environmental effects of coal ash in its different applications and to formulate environmental regulations, in cooperation with the statutory regulators.

The professional integrity of the scientific teams, which are devoid of any commercial interests, the thorough and comprehensive study of all relevant phenomena even if their environmental impact may be negligible, the public transparency of the research process and results and the formulation of environmental regulations in cooperation with the environmental and health authorities, are all required in order to convince the public that its welfare is the top priority of those in charge of advancing the beneficial uses of coal ash and thus to give these uses public legitimacy.

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The talk will demonstrate the procedure for formulating environmental requirements for the various uses of coal ash and the licensing and enforcement mechanisms for regulating these uses, through the presentation of two case studies involving exposure to toxic elements or to radiation in the utilization of coal ash.