A Comprehensive Analysis of Environmental Risks and Carbon Mitigation Strategies in the Algerian Cement Industry

Meriem Smaiah
LRPI Laboratory, University of Mostepha Benblouaid – Batna 2, Batna, Algeria

Leila Boubaker
LRPI Laboratory, University of Mostepha Benblouaid – Batna 2, Batna, Algeria

Anis Arioua
Health and Safety Institute, University of Mostepha Benblouaid – Batna 2, Batna, Algeria

Abstract:

Climate change has historically been a world wide phenomenon, and it has undoubtedly been the most eminent environmental problem and discussed by a plethora of scientists for more than 150 years. The purpose of this paper is to evaluate the environmental hazards within a cement plant to discover the causes, consequences and severity of these risks, to calculate the amount of carbon dioxide emitted by the cement factory, and also to calculate the cost of captured carbon by CCU and also the income from selling CO2.

For this, we propose a new method “Environmental Impacts and Severity Analysis (EISA)” which will be applied in the cement plant in Algeria. The EISA has been developed via the extraction of fundamental elements from 3 diverse methods, including EIA (Environmental Impacts Assessment), EMS (Environmental Management System) and FMECA (Failure mode, effects, and criticality analysis). This method is highly contingent on the assemblage of needed data by the utilisation of SADT, then they are organised in a table, and it tends to promote the design of more detailed action plans capable of meeting clearly defined objectives and goals. This method facilitates the identification of environmental aspects and related impacts and provides useful methods for determining relative significance in terms of risks to the environment.

Keywords:

Environmental risks, CO2 emission, CCU, carbon’s capture, EISA.