ABSTRACT

Key Words: Foundry, Cleaner Production, Sustainable Development, SME, Wastes.

Cleaner Production (CP) approaches are basically concerned with operations, environmental sustainability, maximization of waste reduction, recycling, and reuse at the organizational level having microeconomic in scope. Sustainable development (SD), also, involves conversion of integrated approaches which are capable of focussing environmental sustainability and waste and ensuring social as well as economic prosperity at the national or even global level adopting a macroeconomic scope.

Foundry is a value addition process industry and there are about 35,000 foundries in the world and more than 5000 foundries in India having capacity of 7.5 million tonnes per annum. The majority (nearly 95%) of the foundries in India categorised as a small-scale industry providing employment to about half a million people. Indian Foundries employ about 5.0 lakh work force directly and about 15.0 lakh people indirectly. Most foundries are ferrous and labour intensive where operations and handling are manual.

Cleaner Productions are currently used in the various industries all over world in developed countries intensively, including foundries. These techniques are used in big companies. Micro Small and Medium industries have huge share in the world as well as in India. Foundry industry generates several types of wastes, which lead to recourse degradation. It can be minimized by selecting CP approach.

Investigations on CP in big and developed countries are attempted by a very few researchers and agencies. However, there is a paucity of methodology, recommendations for small and medium scale foundries. The present work was aimed for experimental and fieldwork - investigations on Cleaner
Production (CP) of foundry industry. Various factors pertaining to Cleaner Production (CP) for foundry industry such as, sand reclamations, energy management and wastes was studied by field work as well as experimental observations. To determine the significance of each factor economical, environmental and efficiency benefits justified. Energy management practices, life cycle analysis, value stream mapping why why analysis was applied. Also SWOT analysis was carried out.

The investigations reveal that use of Cleaner Production approach is beneficial in foundry in terms of sustainable development. The study also recommends the various beneficial measures in Micro small medium scale ferrous foundries. In present investigation an attempt has been made to contribute sustainable development through Cleaner Production approach for foundry industries.