



Review

Industrial hazardous waste management in Turkey: Current state of the field and primary challenges

Güray Salihoglu*

Environmental Engineering Department, Faculty of Engineering & Architecture, Uludag University, 16059 Bursa, Turkey

ARTICLE INFO

Article history:

Received 7 August 2009

Received in revised form 15 October 2009

Accepted 18 November 2009

Available online 24 November 2009

Keywords:

Transboundary movement

Generation

Regulations

Action plan

Scandals

ABSTRACT

A holistic evaluation of a country's hazardous waste management (HWM) practices is useful in identifying the necessary actions to focus on. Based on an analysis of industrial hazardous waste (HW) generation in Turkey, this paper attempts to critically evaluate and report current Turkish HWM practices and discuss the primary challenges to be addressed. The generation of industrial HW for Turkey reported in 2004 was 1.195 million tons, which accounted for 7% of the total industrial solid waste (ISW) generated by the manufacturing industry, and for nearly 4.9% of the total solid waste generated in the country. The HW generated by the top five manufacturing product categories – basic metals, chemicals and chemical products, food and beverages, coke and refined petroleum, motor vehicles and trailers – accounted for 89.0% of total industrial HW. 21% of the HW generated in 2004 was recycled or reused, and 6% was sold or donated, whereas 73% was sent to ultimate disposal. 67% of the HW sent to ultimate disposal was disposed of at municipal landfills. The total capacity of the existing regional HW facilities is 212,500 tons/year, which accounts for about 24% of the HW to be disposed. Turkey has identified the HW problem in the country and enacted legislation, designated a lead agency, and promulgated rules and regulations. Several new initiatives are planned for improving HW management nationally; however, some HWM problems will be persistent due to previous and existing industrial development plans. These development policies led to the concentration of industry in regions marked by precious agricultural fields and high population density. This occurred because the government previously exhibited a default prioritization towards industrial development, leading to insufficient implementation of regulations on HW generators. Some of the problems may also be rooted in other countries that allow illegal transboundary HW movements despite international regulations.

© 2009 Elsevier B.V. All rights reserved.

Contents

1. Introduction	43
2. Industrial hazardous waste management in Turkey	44
2.1. Industrial hazardous waste generation and disposal	44
2.2. Recycling, transportation, and disposal facilities	47
2.3. Special wastes	49
2.3.1. Waste oils	49
2.3.2. Waste batteries and accumulators	49
2.4. Regulatory and institutional structure	49
2.5. Steps for the future management of hazardous wastes	51
3. Discussion: challenges	52
4. Conclusions	55
Acknowledgement	55
References	55

* Tel.: +90 224 2942120/532 7496505 (Mobile); fax: +90 224 4429148.
E-mail address: gurays@uludag.edu.tr.