Chapter 11
Quality of Resilient Cities, the Issue of Urban Waste:
Waste Management as Part of Urban Metabolism

Elzbieta Dagny Rynska
Warsaw University of Technology, Poland

Anna Teresa Oniszk-Poplawska
Warsaw University of Technology Faculty of Architecture, Poland

Urszula Kozminska
Warsaw University of Technology Faculty of Architecture, Poland

ABSTRACT

This chapter focuses on the metabolic concept for the management and treatment of construction waste and organic fraction of municipal solid waste in urban areas. Analysis of related Dutch, German and Polish guidelines for environmental zoning of industrial plants, allows formulation of conditions for an optimal siting of waste infrastructure within urban unit. Protection zones are defined in accordance with specific requirements for waste facilities, which treat and recycle both municipal and construction waste. Distances from inhabited areas are related to environmental burdens generated by such facilities (incl. parameters such as odours, noise level, explosion impacts and emissions of other substances). Moreover, this chapter provides the analysis of a selected case studies of waste facilities processing. A comparison of European guidelines and implementation of practical solutions is described in the case study analysis, including the issues open for the discussion about sustainable siting for waste processing infrastructure within an urban unit.

DOI: 10.4018/978-1-5225-9276-1.ch011

INTRODUCTION

Waste is an underlying issue throughout Agenda 21, one of the first documents concerning sustainable development. It is pointed out as a source of many environmental problems caused more than often through anthropogenic activities. While some of the Chapters (20, 21) deal specifically with waste issues, others concentrate on the negative impacts and effects of waste. Even all those years back (1992), this very important document directly emphasized the need to manage waste, reduce generation of waste, or its effective integration into the 3R scheme. Basically, this procedure is based on the well-known Reuse – Reduce - Recycle pattern. In case of waste, this approach has been actually modified by Japanese with Reduce – Return - Reuse approach. Project started April 2014 and will run until March 2017. It focuses on reducing the use of imported goods and merchandise, encourages composting of biodegradable waste at home and reuses the waste. This project will work alongside the established Honiara Public-Private Cooperation Committee where people, agencies and administrators will collaborate to address and achieve the goal of the project in reducing household waste. The outcomes will decisively allow to formulate a case specific generally accepted redefinition of 3R in the waste sector.

Beside Agenda 21, Europe has introduced some particular Conventions. In case of the Basel Convention ("Ban Amendment", adopted in 1995 under Decision III/1), the emphasis was placed on the export prohibition of hazardous wastes, for any purpose, from countries listed in a proposed new annex ("Parties and other States which are members of OECD, EC, Liechtenstein"), to countries not listed in the annex. During subsequent meetings the Parties adopted lists of specific wastes characterized as hazardous or non-hazardous, thereby clarifying the scope of the Convention. In 1999, a Protocol on Liability and Compensation was adopted.

The second Convention is - The Rotterdam Convention constituted by a group of government-designated experts responsible for assessing whether banned, severely restricted chemicals or hazardous pesticide formulations should be made a subject to the Prior Informed Consent procedure. At its third meeting in February 2002, the interim committee recommended that three most widely-used pesticides and all forms of asbestos should be added to the Convention.

Similarly, the Stockholm Convention provides for the future establishment, by the Conference of the Parties, of a subsidiary body to be called the Persistent Organic Pollutants Review Committee.

Some of other relevant regional agreements also include air pollution or control of transboundary movement of hazardous waste *i.e.*:

- Convention on Long-range Transboundary Air Pollution (1979) including Aarhus Protocol on POPs (1998) www.unece.org/env/lrtap,
- Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (1976). Izmir Protocol (1996) www.rempec.org/barcelona.html,
- Waigani Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (1995) www.forumsec.org.fj/docs/wc.htm & www.basel.int/Misclinks/waigani.html,
- Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa (1991) www.londonconvention.org/Bamako.htm