

# Chapter 10

## Economic Instruments for Sustainable Environmental Management

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### ABSTRACT

*Environmental pollution has been continuously threatening the world. In the combat with environmental pollution problems, waste management authorities, in compliance with the “User Pays Principle-USP”, apply the “Polluter Pays Principle-3Ps” to the waste generators. Thus the resource users and the waste generators will be paying a fee for the resources and services they are using. They can be summarized as water fee, wastewater discharge fee, effluent permit fee, air emission fees, solid waste disposal fee, landfill tax, and hazardous waste tax and product charge, Advance Disposal Fee (ADF), Ozone-Depleting Chemicals (ODC), government product charge and road user fees. The main purpose of charging a fee is to encourage the users and the polluters to reduce the amount of pollutants they are generating and disposing into the environment. These fees can also be named as “a pollution charge fee”, “user charge fee” or “product charge fee”. This chapter outlines the many existing waste fee models.*

### INTRODUCTION

Environmental pollution has reached to such a high level which causes global disasters that threaten the public health and natural resources. The natural resources such as water, minerals and fuel are not limitless. Extraction of virgin materials and usage of these amenities carelessly will eventually end up as waste in the form of disposals/emissions to land, air and water (European Commission, 2011a; Söderholm, 2011). Throughout the world the waste amounts are growing, and so is the sensitivity and concern about how to deal with them and the corresponding environmental problems (Bruvoll, 1998). According to the research studies conducted, global municipal solid waste amounts will increase at an annual rate of 2.4 per cent through the year 2019 (Beede & Blom, 1995). The waste management authorities have been having difficulties both in handling and financing the environmental protection and

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clean-up activities lately. On the other hand waste management is also important for achieving several other environmental quality objectives including “reduced climate impact” and “a non-toxic environment”. Waste management in many countries has undergone significant changes during the last decades (Finnveden, et.al., 2013; Broome, 1992).

In the combat with the generated environmental pollution problems, several policy instruments such as “Polluter Pays Principle-3Ps” in compliance with the “User Pays Principle-USP” can be effective and possible to implement. Thus people will be paying a fee for the services they are using. This fee can also be named as “a pollution charge fee”, “user charge fee” or “product charge fee”. Although all of these terminologies are used interchangeably, they have subtle differences in their meanings. A pollution charge fee is a fee based on the quantity of pollutants that are disposed into the environment. A user charge fee is a fee paid for using natural resources or for the collection and/or disposal of pollutants (European Commission, 2011b). A product charge fee is a fee imposed on products that are having negative impacts on environment. While “tax” is used for the revenue rising instruments, “fee” and “charge” are the applications used to offset costs to the government. Those charges and fees collected are retained to be used to supplement the budget allocated for the protection of environment and management of wastes (ISWA, 2011; Kocasoy, 2014).

Most environmental taxes are designed to fund environmental protection activities. The economic rationale behind them is that those who generate and cause environmental pollution should bear the costs of both damages to the environment and the administrative costs incurred. To be economically efficient, environmental taxes should include both of these costs. The fee should cover all the costs of the collection, treatment and final disposal of wastes as well as the costs of the administrative work and the operation of the waste management, treatment and disposal facilities. The most important issue in the design and the application of the waste fee model is the “fairness”

## **ENVIRONMENTAL FEES-TAXES**

In the following sections various environmental fees and fee models will be discussed. After the discussion of some of the environmental fees such as water fees, wastewater discharge fees, air emission fees, permit fees, air toxics and ozone-depleting chemicals emission fees, solid waste disposal fees and landfill fees, criteria in the design of the solid waste disposal fees and the different fee models will be explained in detail.

### **Water Fees**

Water fees are classified as user fees for groundwater, surface water or drinking water supplied by waterworks and as fees for direct or indirect water discharges. The idea behind the water user fees is that water is not a free unlimited resource but rather a scarce commodity that should be priced to avoid inefficient use and environmental pollution. The water fees are designed to raise budget to recover costs of providing service rather than the allocation of the scarce resource among competing needs (Bruvoll, 1998; Smith, et al., 2011).

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