

# Environmental and wider implications of political impediments to environmental tax reform

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## Abstract

The most common notion of environmental tax reform (ETR) is the use of the revenue from environmental taxes to reduce distortionary labour taxes. The PETRAS project<sup>1</sup> has shown that there are a number of social and political impediments to implementing such reform. This paper firstly outlines some of the environmental and economic implications of environmental taxes generally. It goes on to explore three broad approaches to ETR, based on the allocation of the tax revenues, and explores the environmental and economic implications of each approach and the likelihood of political and social acceptance. Particular attention is paid to reducing regressive impacts and impacts on competitiveness. It is concluded that some combination of earmarking a proportion of revenues to environmental projects and diverting rest to reduce labour taxes is probably the best approach in light of the results of the project. The balance should depend upon local labour market and macroeconomic conditions, the extent to which environmental projects are already funded and the extent of government failure, i.e., the problems of resource allocation that occur as a result of government intervention in markets. Funding should only be provided to environmental projects if it can be shown that, in themselves, they are economically efficient. In addition, it is most important that a proportion of the funds be used to ameliorate any regressive impacts. It is also important to bear in mind that hypothecation or recycling of revenue is not the same as a tax shift, which is a reform of the entire system, so some of these approaches may take away from the integrity of ETR. The paper concludes with some of the initiatives that are likely to be necessary to facilitate social and political acceptance of this approach to ETR.

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## 1. Introduction

The purpose of the PETRAS project (see footnote 1) was to assess the social and political responses to

environmental tax reform. The exact nature of what ‘environmental tax reform’ (ETR) means is mostly dependent on the nature of the use of the revenues from such taxes. There are different approaches to applying ETR which relate to how the revenue is used. Broadly speaking this can be split into approaches that recycle all the revenue through tax reductions elsewhere, those that use part of the revenue to support environmental projects or initiatives, and those that use the revenue for compensation (see the introductory paper in this issue of energy policy).

Depending on the way fiscal revenues are recycled, carbon or energy taxes may generate some benefits in addition to those resulting from pollution abatement.

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<sup>1</sup>PETRAS (EVG1-CT-1999-00004) was a 5th framework project investigating the impediments to ETR, specifically recycling of the revenue from a carbon or energy tax, in five European countries. The impediments were examined by interviewing politicians, business people and decision makers and holding focus groups with the general public. Other papers in this edition of energy policy discuss the country results individually.

These additional benefits may be divided in two categories (Hourcade, 1996):

- An ‘economic double dividend’: recycling carbon or energy tax revenues by reducing distortionary taxes may have positive impacts on employment or technological development. The cleaner environment is the first dividend while the increase in employment or GDP is the second dividend. An increase in employment is also a social dividend.
- An ‘environmental double dividend’: reducing carbon emissions may be accompanied by a decrease in local pollution (see Box 1,2).

## 2. Environmental impact of ETR

The OECD (1999) define the aim of (regulatory) environmental taxes as to reduce, through higher prices, the use of scarce resources or emissions of polluting substances. The effectiveness of an environmental tax is defined (OECD, 1999) as its capacity to achieve these goals.

Studies of behavioural responses to environmental taxes are important for future modifications and adjustments of the environmental tax in the country concerned, as well as the tax system in general.

Econometric methods can estimate price elasticities, which, with precaution, are used to predict these responses. The main advantage of the price elasticity estimates approach is that it does not require that a tax be implemented, merely that relative prices changed. This is important in view of the fact that environmental taxes have only a short history. Although general price elasticity estimates have been derived for many countries and for several years, empirical data on consumer responses to environmental taxes are scarce (Ekins and Speck, 1998). For this and other reasons it is difficult to anticipate the impact of a carbon tax on emissions in advance. If the tax rate is set at a relatively low level or if energy demand is relatively insensitive to price changes, then emissions will not decrease sufficiently to attain a given abatement objective. However, Goulder and Schneider (1999) pointed out that the price signal given by a tax could affect future investment decisions when capital is being replaced.

According to Baranzini et al. (2000), the environmental effectiveness of a carbon tax (these points apply to all environmental taxes) will also depend on at least two other factors:

1. The use of carbon taxes fiscal revenues. With respect to environmental effectiveness, two main options may be considered. First, carbon taxes fiscal revenues could be used to subsidise renewable energy. In the

### Box 1

Environmental tax reform vs environmental fiscal reform.

Environmental tax reform is based on introducing or increasing environmental taxes – on carbon products, energy use or resources use— while decreasing other distortionary taxes, such as labour or social security.

Environmental fiscal reform encompasses all environmental tax reforms, subsidies, grants and other environmental incentives as well as the removal of harmful subsidies.

### Box 2

Danish CO<sub>2</sub> tax

Denmark has an ambitious energy policy, with the objective of reducing CO<sub>2</sub> emissions by 20% in the year 2005. A mix of instruments are being employed to achieve this end, including direct investment— infrastructure for provision of natural gas and expansion of district heating schemes—and regulation (concerning the use of electric heating in new buildings). A CO<sub>2</sub> tax was introduced, and rates on industry and commerce were increased in 1996, and increased annually up to 2002. The revenues from the trade and industry sector are recycled and, in particular, enterprises in energy-intensive sectors will have their tax payments reimbursed provided they enter into a binding agreement with the Danish Energy Agency (Johannsen and Togeby, 1998). Denmark’s national environmental research institute (DMU, 2001) reported in 2001 that gross energy consumption was virtually unchanged since 1972, despite economic growth of 20% in the past ten years alone and fuel consumption patterns have shifted away from coal and towards natural gas and renewables, a trend that was expected to continue.

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