

Tradeable Permits

Ensuring good water and air quality is an essential step towards future security. Consequently, pollution control is a big part of water resource management and air quality maintenance. Tradable pollution permits are cap and trade schemes which give companies a legal right to pollute a certain amount per fixed time period. Firms that pollute below its capped level can sell their leftover pollution permits to firms that pollute more or above their permit levels. The point of this is that polluting firms and public agencies differ in their ability to abate their pollution. Some can do it easily and cheaply, for others it would be more difficult and costly. Consequently, tradable pollution permits equalizes the marginal cost of abatement and can be a cost effective way to achieve a reduction in overall pollution. The tradable permits can be considered just a tool to allow a group of actors to achieve a collective reduction goal that has been set by law, or through an agreement.

In fact applications of this approach have spread to many different types of resources and many different countries. Tradable permits address the commons problem by rationing access to the resource and privatizing the resulting access rights. The first step involves setting a limit on user access to the resource. For fisheries this would involve the total allowable catch. For water supply it would involve the amount of water that could be extracted. For pollution control it typically specifies the aggregate amount of emissions allowed in the relevant control region. This limit defines the aggregate amount of access to the resource that is authorized. These access rights are then allocated on some basis to potential individual users.

The emission of pollution requires the purchase of permits to pollute, and the price of these permits represents a tax on pollution. Thus, tradable or marketable permits represent a hybrid of a quota system and a Pigouvian taxation system—a quota determines the overall quantity of pollution as in a quota system, determining the supply of pollution rights, but the purchase of pollution rights acts like a tax on pollution, a tax whose level is determined by the quota supply and demand.

The freedom to trade pollution “entitlements” gives an incentive for polluters to consider abatement since they can sell their surplus quotas. While others who fail to abate pollution face the cost of having to purchase permits. A tradable permit system increases the opportunity cost associated with emitting a particular pollutant, and thus production technologies and management practices which are relatively intensive in the emission of that pollutant become relatively less attractive in the marketplace. For society, the existence of tradable permits enables pollution abatement to be achieved in the least costly manner. Over time, pollution standards can be tightened, increasing the value of the permits and the pressure on market participants. In the long run, this should result in significant benefits in terms of the innovation and diffusion of environmentally-less damaging technologies.

A somewhat unexpected advantage of tradable permits has been the purchase of permits by environmental groups. Environmental groups can buy permits and then not exercise them, as a way of cleaning the air. In this case, the purchase of the permits creates a major positive externality on the rest of society, since the environmental group expends its own resources to reduce pollution of others.

Implementation of tradable permit system however has some prerequisites. There is a need for a mechanism for initial allocation of rights (whether for water or air pollution discharges) which should be seen to be fair, and be equitable and effective. Initial quota of pollution and prices of permits can be set by governments or determined through public auctions. The decision on how long permits are valid is important if ever governments want to change the price for a pollution unit. If permits are valid indefinitely, companies can “store” unused pollution certificates which means that later price corrections will be less effective. In order to be effective, monitoring systems need to be put in place to keep track of the pollution discharges of companies and other users so their actual discharge can be determined and fines imposed if companies surpass the pollution levels allotted through their permits. Without effective enforcement, permit holders who don’t get caught may gain more by cheating than by living within the constraints imposed by their allocated permits. This could lead to the degradation of the resource because the aggregate limit could be breached.

Even though marketable permits are a cost-effective means of meeting given levels of emissions, it does not necessarily mean that they are economically efficient. In many instances it is likely to be administratively costly, economically inefficient, and/or environmentally ineffective. For any pollutant in which the impacts differ by place of emission (such as carbon dioxide or ozone depleting substances), the equalisation of marginal abatement costs will not be economically optimal. In effect if the spatial scale of the tradable permit market incorporates sources with heterogeneous environmental impacts, a single undifferentiated market for tradeable permits will not be economically optimal. In such circumstances, regulatory constraints are often required to protect local environmental conditions.

Application of marketable permit system also has some practical inconveniency. It is necessary to reach an agreement regarding the collective reduction objective and the penalties to be applied if the collective goal is not achieved, and to whom they apply have to be defined. A system that relies on pollution permits as opposed to mandatory pollution cuts or limits set by the government allows companies that are wealthy enough to keep polluting.

This system is not well adapted to small individual sources: the means that should be devoted to measuring, controlling and managing the emissions of domestic central heating/cooling systems, or cars (or trucks, or planes), would be totally out of proportion with what is at stake. And if the emissions of heating/cooling and transportation means are not taken into account an enormous percentage of the CO₂ emissions are left out.