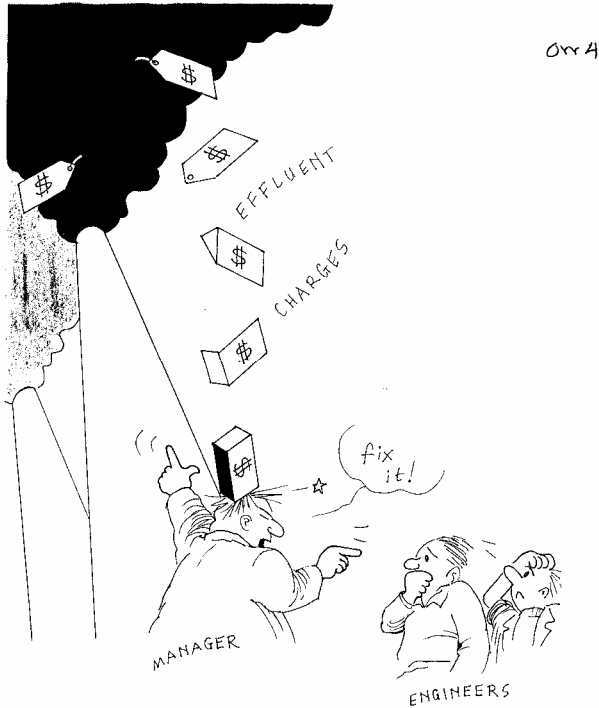


EFFLUENT CHARGES

The goal of an energy policy is to begin a process that effectively values the environment and the energy needs of future generations. There is near uniform agreement among economists who study exhaustible resource problems that markets do not *adequately* take into account the needs of future generations for resources. The outcome is that these resources are under-priced, and therefore overused, in today's markets.

Markets, left to themselves, fail to conserve most environmental resources because they are *common property resources* and are not traded in markets. Indeed, an unregulated competitive market would be more or less forced to exploit these resources, because they are regarded as 'free' or 'unpriced'. We buy our goods at artificially low prices, but the resulting *social* cost of this activity is pollution and energy depletion. This social cost of damage to the environment and future generations can be very high – some would say life threatening.



Recent world-wide trends in environmental policy show a growing use of supplementary charges as instruments of public involvement in the marketplace for the purpose of conserving natural-environmental resources. The relative success of this approach compared to direct regulation, and the growing understanding of its underlying mechanism of economic incentives, has led to its support by virtually all major environmental groups as an important concept in the policy tool kit. The underlying economic principle is that, for an efficient allocation of resources used in production, each resource (including the environment) must carry a price that reflects its true social value.

One way of implementing supplementary charges is through the use of *marketable permits*, which work as follows. The regulating authority auctions a quantity of permits that represents allowable energy use and/or emissions. The auction price is determined by, and measures the cost of avoiding, the last unit of energy use or allowable emissions. Those with less efficient processes and higher costs must pay for the permits and suffer a competitive disadvantage. As with taxes, this creates incentives to *innovate in energy use and pollution control*. Permits may be resold, and their changing price will reflect progress (or the lack of it) in the discovery of low cost abatement techniques.

Environmental and business groups both have substantially reversed their former opposition to supplementary charges. Environmental groups have observed the effectiveness of this approach in a variety of circumstances. Business groups have experienced the excessive costs of traditional regulation: costs that are ultimately paid by their customers and all of society. The overall effect of resource and effluent taxes (charges) in raising the price of fossil fuels also has a vital impact on energy supplies. If the price of fossil fuels reflects their true social cost, including conservation and environmental costs, then relatively clean renewable energy resources will become more competitive. This will *stimulate research to develop the technology and lower the cost of renewable energy resources*.

Perhaps even more important, effluent charges establish a *continuous incentive* for producers to innovate and find more effective ways to conserve energy and control pollution. The incentive is to escape the charges by energy conservation and additional pollution control at a low cost (see figure).

Pollution and energy taxes, when seen as partially replacing ordinary taxes, achieve three important social purposes: 1) Like ordinary taxes they fund the public sector; 2) They *improve* the efficiency of the economy -- especially in our efforts to control pollution and reduce the throughput of energy and material; 3) They help to conserve exhaustible resources while smoothing the transition from present to future energy technologies.