

Response to Stern Review's Discussion Paper, "What is the Economics of Climate Change?"

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Below is an excerpt from the summary of my draft paper, *Neither the rock nor the hard place: using payment thresholds to balance the politics and the economics of emissions control*, based on 20 years of UK and then Australian research in this area. It addresses para 74 of the Discussion Paper, which contains the standard misperception that emission taxes must raise significant revenue which "can then be used to achieve other goals". Please think again! Overwhelming, real-world experience shows that emission taxes are simply *not* politically acceptable if they both significantly reduce emissions (and are thus at a rate roughly equal to the permit price in an equivalent emissions trading scheme), *and* apply to all units of emissions. There is an alternative which avoids raising much revenue by exempting most emissions, and so is much more likely to be acceptable. Read on...

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Summary. This paper invites environmental economists to take a new approach to the political economy of tradable emission permits and emission taxes. Together tradable permits and taxes will be called "emission pricing" mechanisms here, because they make polluters pay a price per marginal unit of emissions, with resulting, well-known short- and long-run efficiency benefits – at least on paper. At the moment, the vast majority of environmental economists analyse, and discuss as policy options, just three, polar forms of emission pricing:

- a pure tax on all emissions
- permits that are initially all auctioned
- permits that are initially all distributed free to polluters ("fully grandfathered").

Thanks to the "tax interaction" literature of the 1990s, many environmental economists now advise that only the first two of these should be considered. This is so as to maximise revenue from the tax or from permit auctions, then use this revenue to lower existing, non-environmental tax rates, and hence minimise the distortionary welfare losses caused by such taxes. Such revenue-raising benefits are important because distorting interactions between the emission price and existing taxes mean that the net welfare gain from a revenue-neutral form of emission pricing, such as full grandfathering, is considerably below the surplus of environmental benefits over direct abatement costs.

The problem with this advice is that maximising the revenue raised by emission pricing mechanisms is now, always has been, and always will be politically impossible, because of the power exerted by existing polluters' interest groups. This is shown by a review of the literature on which mechanisms have been proposed, and which have actually been adopted. Two prime examples come from the early 1990s, when the European Commission's proposals for a carbon tax on almost all emissions were politically defeated, while the US sulphur emissions trading scheme, which grandfathered

97% of permits, was successfully adopted. By setting an agenda of just three, polar mechanisms, and arguing for just two of them on welfare grounds, environmental economists set up an unwinnable choice between a rock and a hard place. The "rock" is full permit grandfathering, which is politically acceptable though maybe harmful to welfare; the "hard place" is full permit auctioning or a pure tax, which is best for welfare, but politically unacceptable.

But neither the rock nor the hard place need to be chosen, because intermediate forms of emission pricing are readily available. With permits, the obvious intermediate form is *partial grandfathering*: giving away some of the permits free, and auctioning the rest of them. With an emission tax, it is the less well-known option of giving existing polluters *tax thresholds*; and to maximise efficient entry and exit of firms from a polluting industry, such thresholds should ideally be as much like property rights as tradable permits are (Mumy 1980, Pezzey 1992, Farrow 1995). In either case, both individual polluting firms and the whole polluting industry then have *payment thresholds* – free permits, or tax thresholds – so that their net payments to the regulator are:

$$\text{net payment to regulator} = \text{emission price} \times (\text{emission level} - \text{payment threshold}).$$

To give a continuing marginal incentive to reduce emissions, this formula must be used even when the emission level is below the threshold, so that the polluter is then paid by the regulator. The importance of payment thresholds is that their total can be set anywhere between 0 and 100% of controlled emissions, whatever gives the best balance between the political rock on ensuring acceptability, and the economic hard place of maximising the revenue raised and thus overall welfare.

As the references above show, the above arguments are not new. But they are central to the core purpose of environmental economics: to bring the power of market forces to bear, in real life rather than just in textbooks and journals, on pressing and costly problems of environmental management. And the idea of using payment thresholds to help solve the crucial problem of making market mechanisms of emissions control politically acceptable is not refuted by current conventional wisdom. However, it is simply ignored (overwhelmingly the case for tax thresholds), or relegated to minor footnotes (often the case for partial grandfathering) (Stavins 2003, 2006, Tietenberg 2006). So although much of this paper is not technically original, it is important because it argues that most environmental economists writing on emission taxes are effectively still wasting their breath, in terms of any effect they may have on policy. ...

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