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Future Global Challenges to Achieve Fairness in Environmental Taxation: Moving Beyond the Dimensions of Horizontal and Vertical Equity

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Abstract

Fairness is recognised, almost universally, as the most fundamental ideal of any tax system. With tax systems around the globe being increasingly utilised to implement policies to change emissions behaviour and address the causes of climate change, it is imperative that fairness be a primary consideration. The paper sets out to explore the dilemma of what is meant by 'fairness' in the context of environmental taxation. It begins by first establishing the urgent need for climate change mitigation and establishes the role that environmental taxation has to play. It then considers the extent to which the traditional philosophical and moral approaches to decision making can provide a contemporary and relevant framework by which 'fairness' can be judged. The tax literature generally recognises fairness as having only two dimensions, namely horizontal and vertical equity. The requirement for the 'fair sharing' of the cost of climate change mitigation is considered and additional dimensions of fairness are discussed including the need to look beyond national borders and the current generation of taxpayers. The paper considers the potential conflict that may arise from taking this more holistic and enduring view of fairness and explores the distributional concerns, the dilemma of justice in the international community and the notion of procedural fairness. The paper concludes by acknowledging the complexity of the task facing governments and policy makers in implementing environmental tax systems that reflect a more responsible approach to the concept of fairness. The required changes are identified, including the need within the global arena to show greater leadership and the acknowledgement of the rights of others, both now and in the future.

1. INTRODUCTION

Climate change is a growing global problem and there has been much debate about how it should be addressed and the urgency required, about who should bear the responsibility and the cost. Many countries have relied on their tax systems to assist in changing emission behaviour and promoting more environmentally-friendly practices by which climate change can be mitigated. However, tax systems are generally confined by domestic boundaries, and this presents challenges in dealing with climate change which is clearly a global issue and one that transcends the current generation of taxpayers. A fundamental and arguably universal principle of a good tax system is its inherent fairness, or equity and this principle relates directly to the debate

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surrounding bearing responsibility and cost. However, fairness is a somewhat nebulous concept and its meaning may vary with the perspective of the beholder.

The purpose of this paper is twofold. Firstly, it explores the concept of fairness, and in particular, considers the existence of additional dimensions beyond the considerations of vertical and horizontal equity that have traditionally dominated the tax literature. Secondly, the paper considers the likely constraints to the implementation of global measures of environmental taxation,³ assuming that a common understanding of the fairness principle could be reached. The paper is presented in 5 parts. Following on from this introduction, the role of environmental taxation is discussed in part 2. In part 3 the underlying philosophical dilemmas and the concept of 'fairness' in the context of environmental taxation are considered. Part 4 of the paper then reflects on the practical implications of 'fairness' as a guiding principle in the implementation of environmental taxation internationally. Concluding comments are contained in part 5.

2 WHERE DOES ENVIRONMENTAL TAXATION FIT INTO THE CLIMATE CHANGE DEBATE?

The signing of the Kyoto Protocol in 1997 resulted in countries around the world accepting the need to make significant changes to address the pressing problems of climate change. Kyoto was expected to provide "an evolving regime that can effectively tackle climate change over the course of the century" (Grubb, 2003, p.157). A significant milestone in the United Kingdom (UK) was the publication of The Stern Report in 2006, which resulted in the government accepting that immediate action needed to be taken, including the use of taxes and market trading schemes to establish the economic cost of carbon emissions. In contrast, other countries such as Australia have struggled in determining an appropriate course of action that is coherent and consistent.

The Australian Government first released draft legislation on a carbon pollution reduction scheme (i.e. an emissions trading scheme) for public comment in March 2009. The Government then set itself the ambitious target of finalising and passing the legislation in 2009 with the first year of liability for emissions proposed to start on 1 July 2010 (Wong, 2009), however, the legislation was ultimately defeated in the Senate in 2010. The Federal Treasury simultaneously was undertaking a major review⁴ into the Australian tax system which was released by the Federal Government in May 2010. The extent to which these activities have been co-ordinated is unclear.

Before considering environmental taxation in detail it is worth briefly reflecting on some of the alternatives. Voluntary agreements are just that – voluntary - and without legally binding obligations, there is no requirement to make significant changes. However, it must be recognized that voluntary agreements play an invaluable role in the policy mix, an example of which is the recently concluded pact between the forestry industry and the conservationists in Tasmania relating to the shift from old growth forests logging to plantation logging. Such voluntary agreements will not, in

³ Environmental taxation in general encompasses a wide range of taxes. However, in the context of this paper, it refers primarily to measures aimed at mitigating climate change, for example, carbon taxes, climate change levy and emissions trading schemes.

⁴ See the Henry Review available at:

<http://taxreview.treasury.gov.au/Content/Content.aspx?doc=html/home.htm>

themselves, be sufficient to address the problems identified since Kyoto and the scientific evidence put forward to support the need for change.

Regulation can be useful in addressing problems of large point sources of pollution and industrial effluents (Hewett, 1999). However, regulations set a minimum standard and there is no benefit or reward for those organisations that do more and so innovation will not be encouraged. There is also the inherent problem of monitoring the regulations and making sure the regulations evolve in keeping with changing scientific and technological developments. In practice, many countries employ a policy mix of complementary measures, including direct regulation, voluntary agreements and market-based instruments, to mitigate climate change. It seems different measures serve different roles although environmental taxation has recently assumed a key role in such policy mixes.

Theoretical arguments indicate that the use of economic instruments, by creating direct price signals to producers and consumers, should be more effective in changing behaviour (OECD, 2001). Economic instruments used in environmental taxation, or 'eco taxes', are designed to encourage firms and end users of resources to limit pollution and thereby protect the environment by internalising the cost of environmental degradation. Pizer (1999) argued that despite emission trading being the Kyoto preferred approach, the price fixing approach of carbon taxes would be more effective in changing behaviour and thus protecting the environment. Carbon tax is a means by which fossil fuels are taxed at a rate according to carbon content, and thus their potential to inflict damage. A carbon tax ensures that the price of carbon is fixed and it is the amount of the emissions of CO₂ or other greenhouse gasses that adjust. Carbon taxes are used in many countries including Denmark, Finland and Germany in contrast to emissions trading schemes as used in New Zealand and recently legislated in the United States (US).⁵

The discussion in this section of the paper has focused on the economic instruments by which climate change can be addressed. However, it is clear that environmental taxes are determined by domestic boundaries as a means to address a global problem, that is, one that defies these same boundaries. This is a unique and challenging situation for tax policy makers. Against this background, the next part of the paper considers the moral dilemmas, including fairness, of who should bear the responsibility of addressing climate change.

3 PHILOSOPHICAL CONSIDERATIONS AND FAIRNESS

There are a number of philosophical and moral dilemmas arising from the climate change debate which naturally lead into a discussion on fairness. Addressing climate change can be analysed in greater depth by considering the 'is-ought' gap; which in essence is the distinction between statements of fact and moral judgements. In the context of environmental taxation then the 'is' element, the fact, is based on the scientific evidence and the 'ought' element is the moral judgment that something should be done. In the context of climate change, there does appear to be agreement

⁵ The [American Clean Energy and Security Act](#) (H.R. 2454) was passed on June 26 2009 in the House of Representatives by a vote of 219-212. See http://energycommerce.house.gov/index.php?option=com_content&view=category&layout=blog&id=171&Itemid=93&limitstart=11 accessed 10 November 2010.

on the fact that something needs to be done, so the 'is' is agreed. Therefore the focus of attention should be on the 'ought' which involves a three-fold debate, what ought to be done, and by whom, and over what timeframe?

The philosopher Hume, as discussed by MacIntyre (1959), has been credited with initially raising the 'is-ought' question and others have discussed and challenged his interpretation. Reflecting on the debate, Hudson (1983) summed up Hume's position as "...set within the context of his moral philosophy as a whole, simply raises, but does not answer, the question of how wants and interests are related to obligations." (p.265). This was developed by Searle (1964) who proposed a five stage process of derivation from the statement of "I promise to pay you five dollars" to "I ought to pay you five dollars". Based on whether they take a prescriptivist or descriptivist stance, philosophers have argued and disputed the logical process by which this was achieved. How this has been developed is beyond the remit of this paper on environmental taxation, but suffice to state that there appears to be a link between the scientific statements and the requirement or obligation to address the problems of climate change nationally and internationally, and also to address current and future consequences.

Another important moral issue pertinent to environmental taxation is the 'harm principle' initially set out in the famous essay 'On Liberty' by John Stuart Mill (1859). Put simply, J S Mill maintained that individually or collectively we are only able to interfere with the liberty of action of anyone else, against their will, in order to prevent harm to others. Mill's principle built on the 'is-ought' debate in that the obligation to take action should not be prevented or avoided by individual countries on the basis that they are at liberty to take actions beneficial for them alone. If harm is being done to others then, following the arguments of J S Mill, the 'ought' requirement is for effective action to be taken and cannot be denied on the basis of individual self-interests. In Mill's famous essay on Utilitarianism, he established two principles - the greatest happiness principle and the equity principle (Hudson, 1983). Heated debate followed about how 'greatest happiness' could be measured and assessed. The equity principle stated that there should be no distinction between individuals when deciding what ought to be done.

The importance of equity as a guiding principle has long been recognised in the tax literature with the desired features of a good tax system generally considered to have evolved from the historic writings of Adam Smith in 1776 (Heilbronger, 1986; Head, 1992). Smith identified three duties of government. The first was to protect society from violence and invasion of other independent societies. The second was to protect every member of society from injustice or oppression. The third was to erect and maintain those public institutions and those public works that are useful, but not capable of bringing in a profit to individuals. These three duties still remain relevant today and particularly so in the context of dealing with climate change.

In considering how the cost of public institutions could be defrayed, Smith argued for tolls and other user-pay charges rather than the burden being placed upon the general revenue of society, particularly where the user was able to use the public good to make a personal profit. That is, Smith recognised that taxation could be used to regulate certain activities or provide for the long-term good of society, in addition to simply raising revenue. Smith espoused four maxims for effective and equitable taxation: equality (interpreted in more modern contexts as meaning 'fairness'), certainty,

convenience of payment, and economy in collection, with the greatest importance being placed on certainty (Heilbronger, 1986).

On fairness, Smith argued that the subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state (Heilbronger, 1986). In a more modern-day, Australian context, the Committee led by Asprey (1975) considered the desirable features of a tax system to be efficiency, fairness and simplicity; but highlighted that these features were conflicting and that the policymaker had to repeatedly choose between simplicity and efficiency, or fairness and simplicity, or fairness and efficiency. The Asprey Committee described fairness as an ideal, exceedingly difficult to define and harder still to measure. The terms fairness and equity were regarded as being interchangeable. Equity could be distinguished as having both horizontal and vertical dimensions. These dimensions required that persons in the same situation should be treated equally, and those in different situations be treated differently, with those more favorably placed being able to pay more. This ability to pay approach to fairness was in accord with Smith's view. Smith argued that ability to pay was most fairly determined in accordance with revenue enjoyed. While the Asprey Committee agreed that income was the best measure of economic well being, income was viewed as only the starting point. The Committee questioned the fairness of an individual and a family having the same level of income and being required to pay the same amount of tax.

In contrast to Smith, the Asprey Committee regarded fairness as the most universally sought after quality in a tax system. This view was consistent with earlier authors who had argued strongly that that equity should be the "touchstone" of the Australian tax system (Downing *et al*, 1964, p.v). The eminent UK scholar Cedric Sandford (1992) advocated that the four features of a good tax system (equity, ability to pay, efficiency and simplicity) were in conflict with each other and required a practical compromise to be reached. Sandford did not identify a dominant feature, but recognised that conflict was most likely to arise between simplicity and equity and between equity and efficiency. Similarly, Meade (1978) in the review of the UK's tax system concluded that a good tax system must take into account many factors including the economic incentives provided, its fairness and its distributional effects between rich and poor.

From the discussion thus far it appears that, in principle, a good tax system should reflect the underlying principles of fairness. However, in the context of environmental taxation, it must be recognised that fairness can have many dimensions, well beyond the traditional concepts of vertical and horizontal equity. Vertical equity requires that person in unequal circumstances be treated with an appropriate degree of inequality. Horizontal equity requires that persons earning the same amount and having similar obligations (such as the number of dependants) should pay the same amount of tax. By their very nature vertical and horizontal fairness are measured as at point of time and interpersonally. When it comes to environmental taxation, there exist further dimensions. For example, the dimension of intergenerational or future equity needs to be considered. That is, is it fair for the current generation of taxpayers to expect the future generation of taxpayers to bear the expected future cost of climate change, particularly where no action is taken to abate the current level of emissions? Further,

there is the dimension of sovereignty, in that is it fair for one country or region to bear the cost of climate change caused by the actions of another?

Clearly there are other aspects of fairness when it comes to climate change and these have been subject to considerable discussion in the literature. It has been said that climate change is a serious business and that fairness demands that countries 'step up to the plate' (Clausen & McNeilly, 1998, p.ii), but the issue remains as to which countries and to what extent they should be prepared to step up. In accordance with Smith's view of fairness, ability to pay (as reflected by revenue enjoyed) implies that those countries that reap the greatest financial reward from activities that give rise to climate change, should be prepared to bear its cost. However, this may be too simplistic an approach given the nature of the problem and the reality that the environmental taxation can only contribute in part to the solution.

As identified by Adam Rose (1990), efficiency-based policies would be inappropriate (though not always necessarily in conflict with equity principles) in dealing with climate change as they would result in disparate costs and benefits among nations and thus hinder cooperation. Similarly, the 'polluter pays' principle was recognised as not having universal appeal. Rose argued that an equity principle, whereby there was an internationally fair sharing of abatement costs and benefits, would be the most effective alternative. However, Rose acknowledged that the concept of equity and 'fair sharing' was problematic. It brought into consideration ethical propositions that incorporated elements of efficiency and equity, concerns about sustainable development, and the potential conflict in objectives of nations around the globe.

Rose also identified other approaches to equity including market justice (whereby the free market system is considered to be a fair system of allocation and distribution); consensus equity (but considered to be suspect given the influence of economic and political power); compensation (by which winners are required to compensate losers) and a spirit of co-operation (which would require special consideration to be given to the poorest group of nations). Rather than be dismayed by the array of interpretations of equity as a guiding principle in the debate on how best to mitigate global warming, Rose advocated that it had potential to be a unifying principle. Rose *et al* (1998) highlighted that while equity considerations were usually accorded a secondary role in economic policymaking, in the case of global warming, they may in fact be crucial.

However, Cazorla and Toman (2000) noted that neither history nor philosophy provide a definitive guide to what would constitute a fair distribution of burden in the context of climate change, and assert that approaches that adjust responsibilities over time on the basis of more than one criterion may offer more promise for successful negotiation over the longer term. For example, Claussen and McNeilly (1998) advocated that three criteria should be used to differentiate responsibilities in respect of fair sharing of the cost of climate change: responsibility for the emissions that can cause climate change, standard of living (or the ability to pay for climate change mitigation), and opportunity to reduce emissions. They suggested that countries could be divided into three groups: those that must act now, those that should act now, but differently; and those that could act now, if feasible. However, the dilemma remains that climate change is a global public good and that whilst divergence exists between national actions and global interests, the incentive to 'free ride' remains. Paradoxically, the greater the global net benefits of cooperation in mitigating global warming, the stronger is this incentive (Cazorla & Toman, 2000). It remains as no

great surprise that debate over a long-term equitable sharing of the burden of climate change continues in spite of the signing of the Kyoto Protocol.

However, current debate on equitable distribution of the burden of climate change has focused primarily on distributional concerns as they are perceived to currently exist (i.e. around developed and developing countries), more so than consideration of intergenerational fairness and other less tangible manifestations such as the dilemma of justice to the international community (Paavola & Adger, 2002). There is also a concern that procedural fairness takes place in the negotiating process (Rose, 1998); that there is adequate representation (Albin, 2001); and that more emphasis is needed on the art of negotiating the steps necessary to bring about the necessary changes (Sagar, 2000).

More recently, Raymond (2006) has argued that alternative ideas of fairness, such as the distinction between subsistence and luxury emissions, offer a more flexible mix of egalitarian and other allocation principles. This argument is premised on the wide acceptance of a shared perception of fairness as a prerequisite to the success of an international environmental treaty. Raymond explored one prominent and controversial view in the debate – the idea that each person is entitled to an equal share of atmospheric capacity to absorb greenhouse gas (GHG) emissions and that an allocation framework can provide the basis for equitable distribution (see for example Sagar (2000)). Raymond believed this view to be enticing because of its simplicity and clarity, and to hold promise as a fair outcome. However, it was recognised that defining fairness in terms of a positive environmental right posed important theoretical and practical problems that could unduly inhibit climate change negotiations. Raymond concluded that crafting an equitable resolution to the climate change problem was a monumental task that remains critical to any long-term resolution of the problem (Raymond, 2006). That is, the debate on what constitutes ‘fairness’ in the context of environmental taxation requires urgent resolution.

Alternative responses to addressing climate change that attempt to sidestep the fairness debate include attempts to measure the costs and benefits of climate change mitigation policies. However, such studies have demonstrated that present-day policymakers must weigh reasonably certain current period costs against uncertain future benefits, which gives rise to an ethical dilemma. Leach (2009) highlighted that under such conditions the choice of policies which balance intergenerational allocations of costs and benefits may be critical to gaining support for adoption. That is, there is growing acceptance that policymakers must look beyond immediate economic and self-serving considerations when addressing the issue of climate change.

More recently scholars have attempted to move towards a more systematic coevolutionary theory as a framework for the analysis of the linked development of ecosystems and economies. Waring (2010) argued that while ecological economists have criticised the traditional economic model, they have yet to develop an appropriate evolutionary theoretical foundation. Further, Waring argued that it may be that capitalism (as a cultural innovation that exploits the tribal social instincts and enables competitive social evolution without loss of life) could offer potential for society to progress more quickly towards a sustainable economy.

What is clear from the literature, as was previously described by Head (1992) in the case of tax systems more generally, is that the extremely controversial and potentially

divisive issues of justice and fairness must intrinsically be of central concern to tax policy makers. Arguably, this is even more so in the case of tax systems directed at addressing global concerns about climate change. The framework for international negotiation as proposed by Albin (2001) may help resolve some of these issues. Albin (2001) argued that giving due consideration to each of the phases of negotiation, including structure, process, procedures, outcome and post-agreement, could help in achieving a balanced settlement of conflicting claims. However, in spite of the importance of fairness in the process, it was clear that international agreements were not driven by considerations of fairness and justice alone. Factors such as knowledge (or lack of it) and the exercise of leadership may ultimately be more effective in terms of bringing about beneficial change (Albin, 2001).

4 PRACTICAL CONSIDERATIONS AND INTERNATIONAL PERSPECTIVES

Against the philosophical and moral dilemmas and consideration of fairness, the challenge of who should take responsibility for assessing climate change and the cost remains unresolved. Even so and as discussed previously, some countries are moving forward and implementing various forms of environmental taxation. This does give rise to the need to consider some of the practical implications of these reforms and their international consequences. Dresner *et al* (2006) considered the history and social response to environmental tax reform in the UK and suggested that many are sceptical as it is seen as just another way of the government collecting revenue from organisations and society. Tax revenue raising and pollution reduction are inconsistent goals (Hsu 2008). Further, Oates (2002) maintained that environmental tax rates should be determined by environmental objectives, not by revenue considerations.

However, others have dismissed such concerns and consider that industry has nothing to lose and everything to gain from environmental taxation. They have maintained that arguments such as taxation being opposed to the goals of economic expansion were based on the self-interests of a few. Tindale and Holtham (1996) suggested there were powerful interests, such as the fossil fuel and chemical industries, who opposed any change in the pattern of economic behaviour and whose lobbying operations were well-resourced, well-organised and not overly-principled. Environmental measures could spur firms to develop more resource-efficient methods of production and reduce costs.

The practical issues that arise from introducing environmental taxation have been addressed in some countries such as the UK. "When the tax is implemented, large firms and associations of energy users may be exempted, provided they commit in negotiated agreements to lower their CO₂ emissions" (Thalmann & Barazini, 2008, p.54). Concerns from energy intensive users in the UK were addressed through Climate Change Agreements and although there was some relaxation in the regulations, only approximately 60 per cent of manufacturing processes qualified (Pocklington, 2001). Agreements take a considerable time to complete and some which were concluded quickly have been considered to be less effective environmentally (Shaw, 2001). Enhanced capital allowances for energy efficient plant have had a mixed response (Hansford & Woodward, 2008). Whilst these allowances can provide businesses with a cash flow boost and an incentive to invest in energy-saving equipment, the lengthy administrative process can be off-putting for small and medium sized businesses.

Environmental taxation, requiring individual governments to set the tax rate and tax base, raised issues of international competition (Ekins & Barker, 2001; Hansford & McKerchar, 2008). In support of the argument in favour of direct environmental taxation, positive experiences within Northern Europe (e.g. Scandinavia) have been cited to indicate that they could be introduced and uncompetitive effects successfully avoided. Where taxes were introduced or increased on a national scale only, there was a risk that particular industries would suffer (Smith, 1993). Following the introduction of the UK Climate Change Levy (CCL) in 2001, the UK Confederation of British Industry (CBI), together with the Engineering Employers Federation (EEF), calculated that the UK CCL had resulted in manufacturing industries being the worst affected and that in the year since the introduction of CCL the sector faced a £328m increase in energy bills and a net £143m rise in costs (EEF/CBI, 2002).

Concerns about competitiveness were recognised in the UK following the changes brought about in 2001. John Prescott, then Deputy Prime Minister maintained, when introducing measures to cushion the effects of the CCL upon industry, that the government wanted to work closely with industry to ensure climate change objectives and improve energy efficiency were met in a way which helps rather than hinders overall competitiveness.

The use of indirect, input taxation on the purchase of energy has the advantage of administrative simplicity, as no expensive monitoring of pollution outputs is required, and it was one of the options adopted by the UK government (HM Treasury, 2006). There have been mixed results from research into the benefits of hypothecating environmental tax revenues. When the environmental tax revenue is not 'ring fenced' for environmental purposes, it can be 'recycled' by reducing other taxes, for example on income, labour, capital etc. within that country (Hansford *et al*, 2004). Alternatively, or additionally, it can also be used to reduce any regressive or distributional impacts. The Swiss experience warned about assuming too much could be achieved by hypothecation where full recycling of revenues was not sufficient to make a green tax acceptable (Thalmann & Barazini, 2008).

5 CONCLUSIONS

The philosophical framework initially suggested by Hume – the 'is-ought' question - has been used in this paper in order to reflect upon whether environmental taxation can ever be considered as fair. This paper has taken as a given the 'is'; that climate change is a fact that few scientists now challenge, with the initially reluctant US finally 'joining the club' and seeing the need to take action. The main body of the paper has focused on the 'ought' requirement; how the obligations to address the issues of climate change can be met fairly, internationally and over time.

The standard fairness assessment of 'ability to pay' is insufficient as there is added complexity for environmental taxation. The requirement to 'step up to the plate' implies that those countries that reap the greatest financial benefits should be prepared to bear the cost. The requirement for 'fair sharing' in environmental terms is problematic as it raises issues about sustainable development and the potential conflict of objectives of different nations. In addition there are the distributional concerns and the dilemma of justice in the international community. Procedural fairness brings into focus whether there is adequate representation internationally. In resolving these wide ranging issues more emphasis on the art of negotiating steps to bring about the necessary change is needed.

Recent alternative assessments of fairness have been extended to the distinction between subsistence and luxury emissions, with each individual being 'entitled' to an equal share. Although this is a monumental task, it is considered by some to be critical to any long-term solution. Mitigation policies that attempt to measure and reduce the impact of climate change need to address the impact in the future as well as currently. This is of particular interest when considering inter generational equity and will be a fascinating area for further research.

Practical concerns include the hypothecation of environmental taxes. Governments can find the taxes generated through 'good' environmental practice irresistible and so favour including them in general taxation. When the tax burden falls on specific sectors within national boundaries then that will generate hostility from those affected. Governments can take steps to enact legislation to mitigate the impact on affected sectors, but the devil is in the detail and there are cases of tax reduction strategies not achieving their goals. Scholars have maintained that social welfare can be improved by imposing a tax on the good, where the production or consumption results in a negative external effect. Empirical studies have shown that environmental taxation measures can result in the engagement of employees with first hand knowledge of ways to reduce pollution, within their particular industry. Rather than governments dictate how the reduction can be made, supporters of carbon tax maintain that it is more nimble, allowing the experience and expertise of skilled scientific practitioners to develop optimal solutions, thus using the wide range of knowledge 'insider IP' that is so important to many innovative companies. By using these companies as 'champions' then this can give an additional impetus for the wider adoption of environmentally sound practices and behaviour. Environmental tax pushes energy efficiency up the agenda of many industries by providing a clear financial message and encouraging the use of exempt or more efficient energy sources.

The various perspectives of fairness of environmental tax discussed in this paper highlight the complexity of the tasks facing governments and policy makers. With the scientific evidence of the impact of climate change irrefutable then those responsible need to consider appropriate changes that will affect current and future generations of tax payers. Strong leadership that takes responsibility and implements change has never been more important in order to address this particular 'is-ought' gap.

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