



# Executive Summary

## Australia's Carbon Tax: An Economic Evaluation

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Australia has implemented a carbon tax, and it is failing to deliver any of its promised benefits. Its failures have made the tax a highly politicized issue, and may provide lessons for other nations. The tax, which is currently set at \$24.15<sup>1</sup> is the central component of the Australian Government's climate change policy. The tax applies directly to around 370 Australian businesses<sup>2</sup> and was originally designed as a precursor to a "cap and trade" scheme, with the transition to a flexible price originally (and currently) scheduled to take place on July 1, 2015.

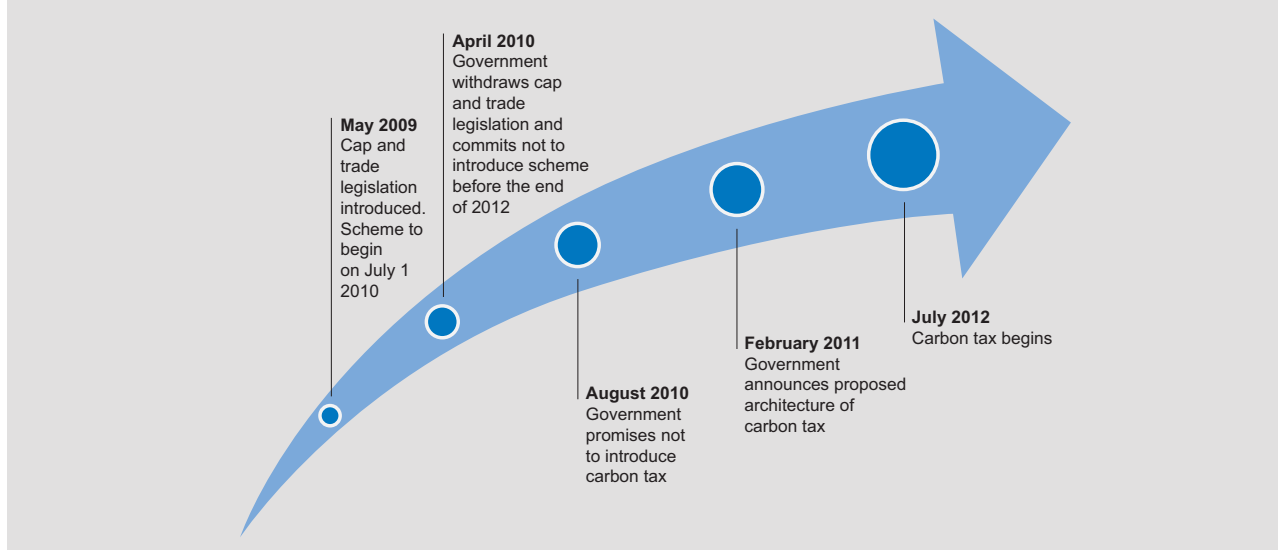
This report, commissioned by the Institute for Energy Research, evaluates Australia's carbon tax experience and draws lessons for policymakers in the United States and other jurisdictions, who may be considering following the Australian example and implementing their own carbon taxes or cap and trade schemes. The analysis establishes a number of key points, which are summarised below.

## **Establishing a Robust, Sustainable and Credible Carbon Tax is Politically Difficult. Policy Uncertainty and Time Inconsistency are Likely to be the Rule Rather than the Exception**

Figure E1 below summarises the legislative evolution of Australia's carbon tax and shows that the policy

was plagued by uncertainty well before it was formally introduced. Prior the 2010 election, neither major political party in Australia supported a carbon tax - yet less than a year later, legislation to give effect to the tax was introduced into Parliament. *In addition, the tax was subjected to a number of significant changes almost immediately after it came into effect, reducing certainty for businesses and directly negating one of the original justifications for the tax.* For example, originally the proposed scheme was to have a fixed price for the first three years, followed by a floating price which would be subject to floor and ceiling prices. However, on August 28, 2012, less than two months after the scheme began, the Government announced that there would no longer be a floor price.

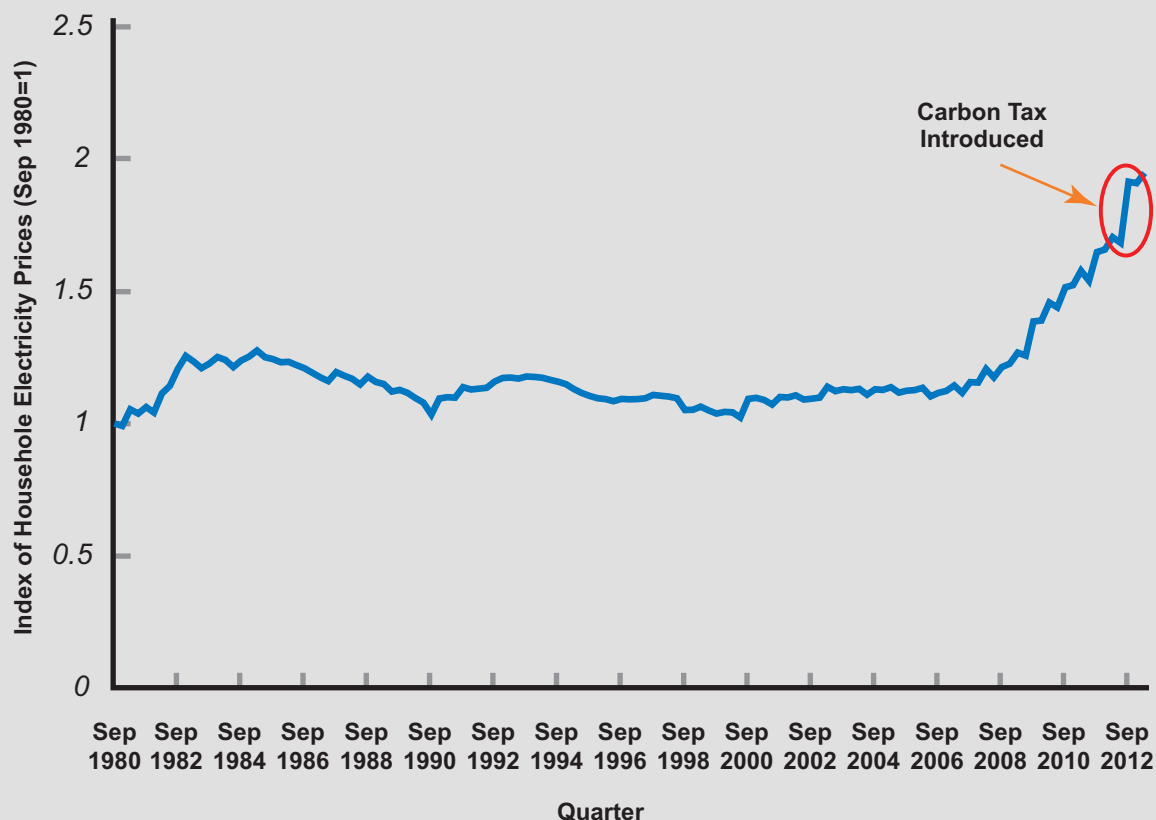
**FIGURE E1:  
SUMMARY OF THE LEGISLATIVE HISTORY OF THE CARBON TAX**



1 Unless otherwise indicated, all dollar figures used in this paper refer to Australian dollars.

2 An up to date database of entities that are directly liable to pay the carbon tax can be found at <http://www.cleanenergyregulator.gov.au/Carbon-Pricing-Mechanism/Liable-Entities-Public-Information-Database/LEPID-for-2012-13-Financial-year/Pages/default.aspx>

**FIGURE E2: INFLATION-ADJUSTED HOUSEHOLD ELECTRICITY PRICES, 1980 TO 2013**



That such significant changes were made to the scheme so soon after it began suggests that the original design contained significant flaws.

Despite the carbon tax passing both the House of Representatives and the Senate and becoming law, political and popular support for the policy has been weak. Recently the Australian Government has proposed further major changes to the tax, announcing its desire to move earlier towards a cap and trade scheme, with the new transition taking place on July 1, 2014. However, legislation to give effect to this proposed change has not yet been introduced into Parliament; and in any case, it is unclear whether such legislation would actually be passed.<sup>3</sup>

As a result, there is still a great deal of uncertainty surrounding the future status of the carbon tax. Depending on the result of the forthcoming election,

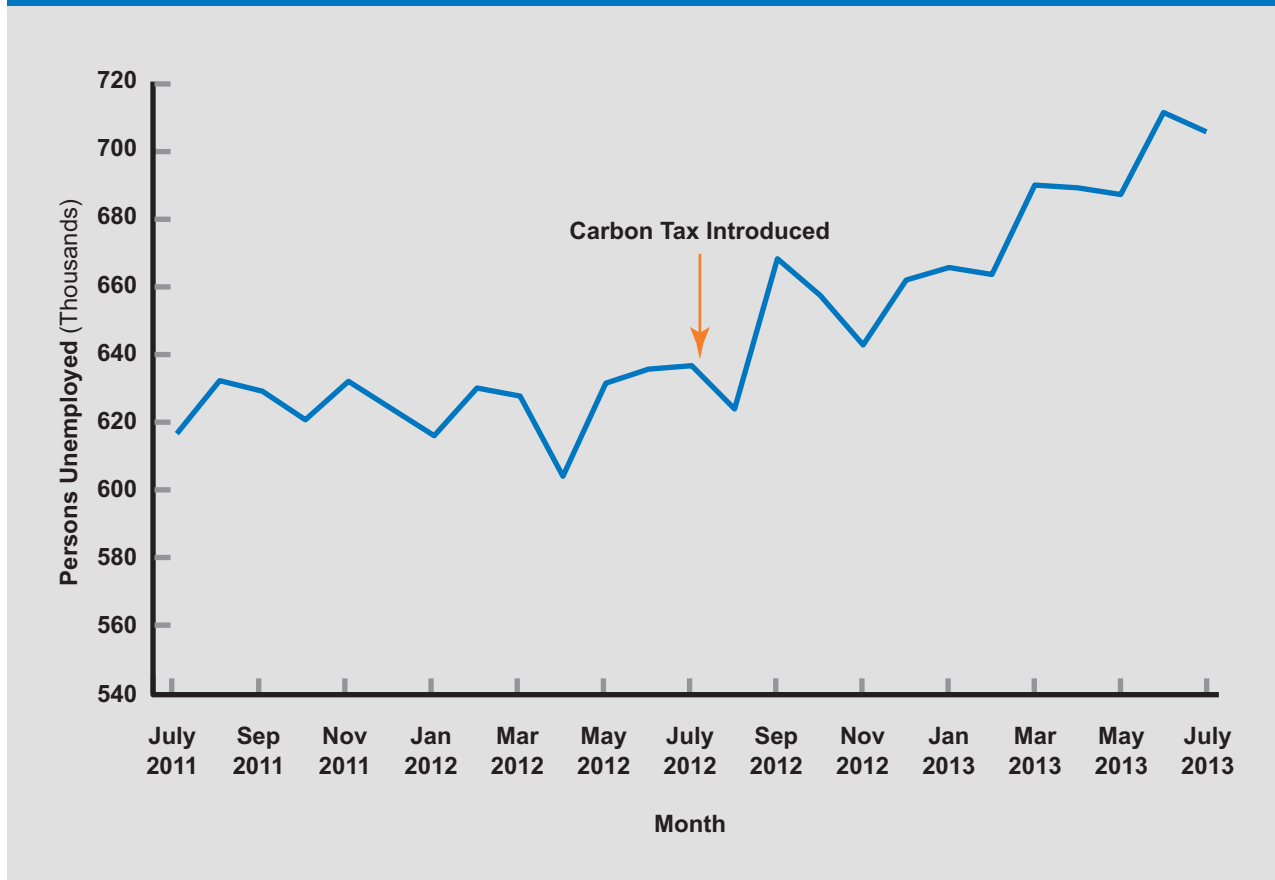
the tax may either remain in place and transition to cap and trade in 2015, or it may move to a cap and trade scheme in 2014, or it may be abolished completely.

**In Assessing the Case for a Carbon Tax or Cap and Trade Scheme, the Incremental Net Benefits of All Feasible Policy Options Were Not Estimated.**

One reason for the lack of robustness of the carbon tax policy is that its development followed a flawed policy process. The role of climate change policy is not to assess the possible damage of climate change, but rather to focus on the incremental net benefits of possible policy options. A central tenet of good economic policymaking is that a full cost benefit analysis (CBA) should be undertaken, weighing up the gains and losses across a wide range of policy alternatives so that political decision-makers can be better informed of the economic effects of various

<sup>3</sup> Draft legislation for the new policy was released on July 25 2013. See: <http://www.climatechange.gov.au/sites/climatechange/files/files/consultations/Explanatory%20paper-Moving%20to%20ETS.pdf>

**FIGURE E3: UNEMPLOYMENT BEFORE AND AFTER THE INTRODUCTION OF THE CARBON TAX**



options. Sensitivity analysis should be undertaken in order to determine the extent to which the results of such analysis depend on modelling assumptions and other inputs. If sensitivity analysis shows that a proposed policy’s estimated net benefits vary wildly with assumptions, the policy should be treated with a great deal of care and probably rejected on the grounds that it is unlikely to result in net benefits.

Whilst a number of Government-commissioned reports attempted to examine the economic costs of carbon taxes and emissions trading schemes, the incremental net benefits of the policy were never assessed. In other words, costs and benefits were never compared. Instead, Government-sponsored reports purported to measure benefits by examining the possible future damage that may be caused by climate change in Australia. But estimating these costs is not the same as estimating the benefits of various policies. In particular, there was never an

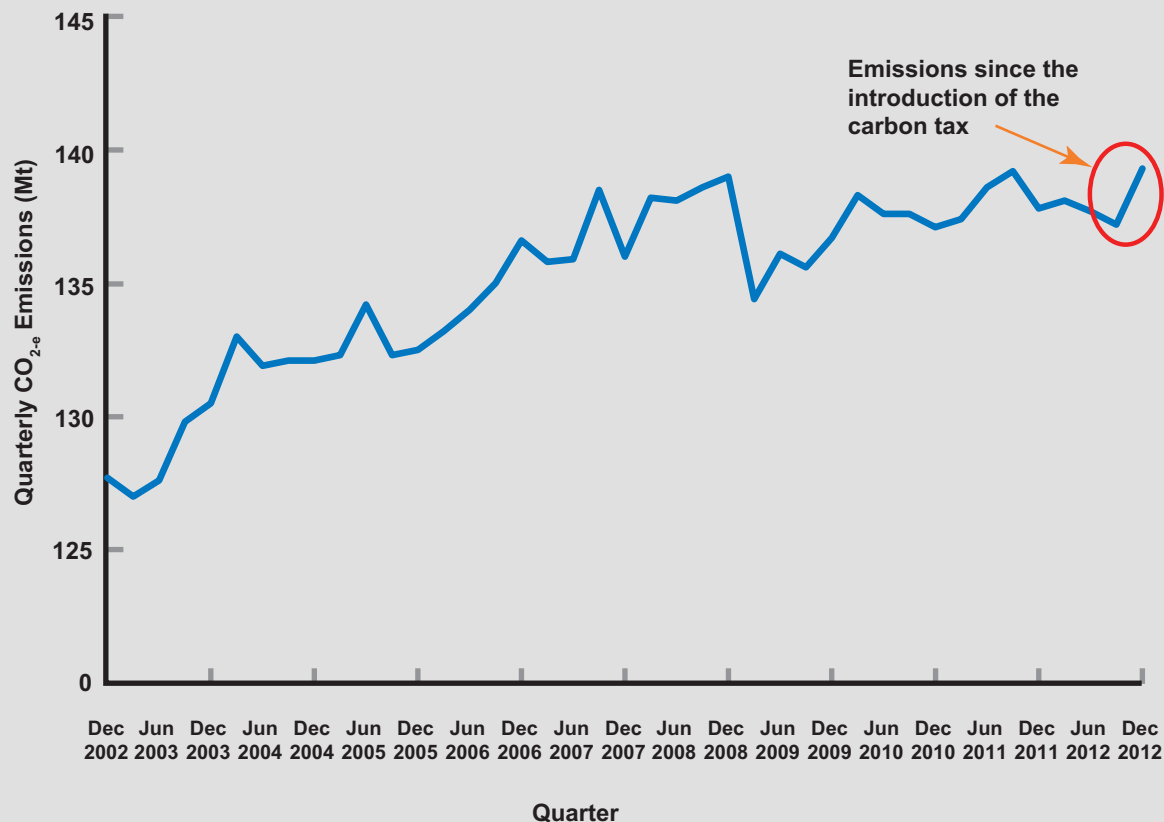
assessment of the incremental net benefits to Australia of limiting emissions, versus other measures such as adaptation. The Australian debate has always been framed as limiting emissions on the one hand, versus doing nothing on the other.

In addition, the Government’s quantitative modelling of the costs made a number of highly unrealistic assumptions and lacked transparency (Ergas and Robson, 2012). This made it impossible for neutral third parties to replicate and evaluate the results, or modify the assumptions to test the robustness of the results.

**The Cumulative Economic Costs of Carbon Taxes or Cap and Trade Schemes are Likely to be Substantial Over the Long Term, with Lower Discount Rates Resulting in Higher Cumulative Costs in Present Value Terms**

Under the carbon tax, most of the abatement that Australia will take credit for over the period to 2050

**FIGURE E4: AUSTRALIA'S TOTAL CO<sub>2</sub>-E EMISSIONS, SEASONALLY ADJUSTED WEATHER NORMALISED, 2002-2013**



will be undertaken overseas, with Australian businesses paying their foreign counterparts to reduce emissions. Nevertheless, the tax will have significant economic costs. So far the main economic effect of the tax has been to increase energy prices (particularly electricity costs) for households and businesses (see Figure E2). According to the Australian Industry Group (AIG), energy cost increases have averaged 14.5 per cent for businesses as a result of the carbon tax, whilst TD Securities and the Melbourne Institute found that due to the introduction of the carbon tax, the price of electricity for households rose by 14.9 per cent. The increase in household electricity prices after the carbon tax was introduced was the highest quarterly increase on record.

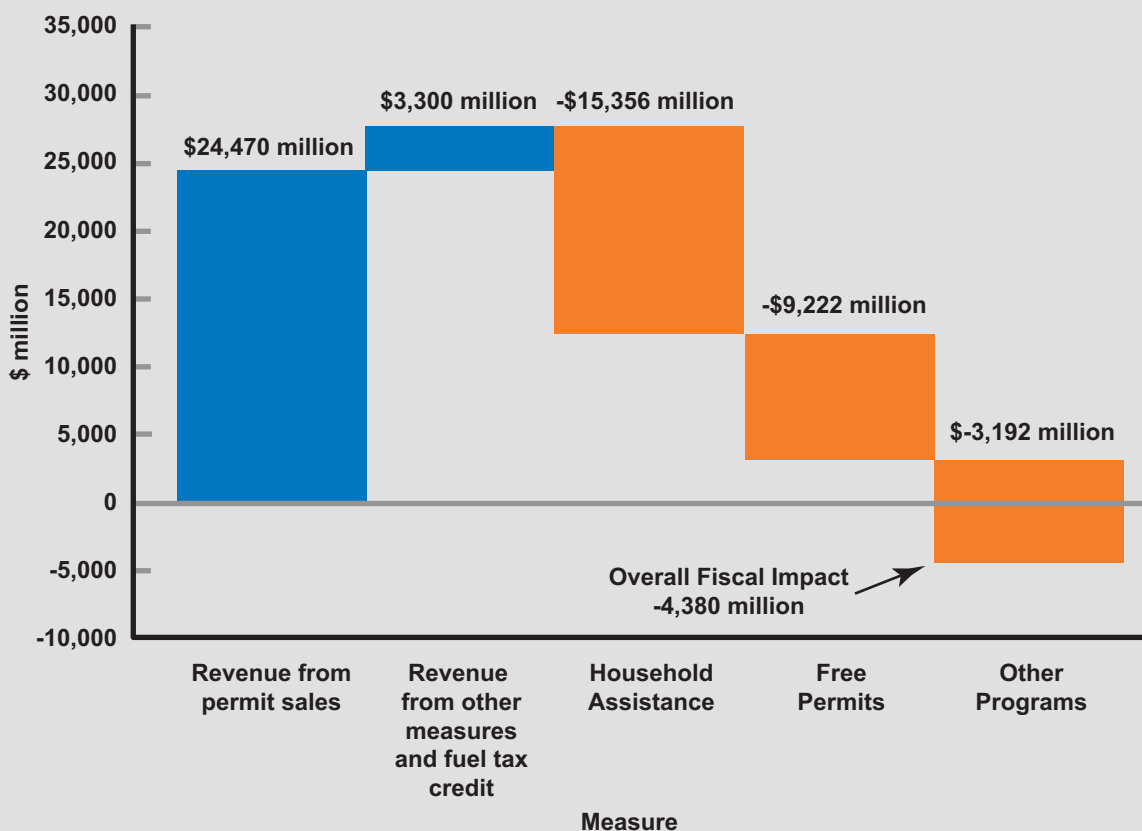
The Government's own modelling (which, as the report discusses, are likely to have underestimated the costs of the tax) indicates that Australia's Gross Domestic

Product (GDP) will be lower than it otherwise would be for every year that the tax is in place. Depending on the discount rate used, the present value of these costs could be as high as 83 per cent of current Australian GDP, or \$1.25 trillion. The carbon tax has been directly linked to a number of business closures and job losses, with overall unemployment rising significantly since the tax was introduced (see Figure E3).

Furthermore, government data shows that the tax has not reduced the level of Australia's domestically produced CO<sub>2</sub>-e emissions (Figure E4). This is not surprising, since under the carbon tax Australia's domestic emissions are not expected to fall below current levels until 2045.

**Carbon Leakage is Likely and will Create Economic Costs with no Offsetting Environmental Benefit**  
Overall, Australia's exports are relatively emissions

**FIGURE E5: EXPECTED CUMULATIVE FISCAL IMPACT OF THE CARBON TAX AND ASSOCIATED POLICIES, 2011-12 TO 2014-15**



intensive. Hence a carbon tax is likely to increase the cost of exports, whose prices are largely determined on world markets. There is little opportunity for Australian export industries to pass on the increases in costs that are due to the carbon tax. In other words, the effect of the carbon tax on Australia's emissions-intensive, trade-exposed industries is similar to a tax on exports or a tax on import-competing industries. Providing free permits to these industries does not alter marginal incentives. Domestic emissions in these industries may fall after a carbon tax is imposed, but that cannot be counted as an environmental gain if the ultimate effect is that the businesses shut down and emissions simply rise overseas. The net effect will be a pure deadweight cost to the Australian economy.

**Fiscal Impacts are Likely to be Uncertain, with both Carbon Taxes and Cap and Trade Schemes Adding to Existing Revenue Volatility**

Due to the structure of the carbon tax and accompanying policies, a sizeable fiscal gap has opened up between the revenues generated by the tax on the one hand, and the increases in government spending and tax cuts that accompanied the scheme on the other. A significant proportion of compensation payments were "locked in", whilst revenue from the tax is likely to be lower than originally anticipated. Hence the introduction of the tax, together with other policies, is likely to worsen Australia's budget bottom line going forward, leading to higher deficits and higher public debt than would otherwise have been the case.

**TABLE E1: ESTIMATED CONTRIBUTION OF THE INTRODUCTION OF THE CARBON TAX AND OTHER GREEN SCHEMES TO A TYPICAL ANNUAL HOUSEHOLD ELECTRICITY BILL, QLD AND NSW**

	QLD (2012-13)	NSW (2013-14)
RENEWABLE ENERGY TARGET	\$102	\$107
SOLAR BONUS SCHEME/OTHER SCHEMES	\$67	\$53
CARBON TAX	\$190	\$172
TYPICAL HOUSEHOLD BILL	\$1900	\$2073
GREEN SCHEMES/TOTAL	19 PER CENT	16 PER CENT

**Attention Needs to be Paid to the Effects and Costs of “Complementary” Policies, Which Are Likely to Result in Efficiency Losses Rather than Efficiency Gains, Compounding any Negative Effects of a Carbon Tax or Cap and Trade Scheme**

Table E1 below shows that the carbon tax, together with other green schemes, now account for a significant portion of a typical Australian household’s electricity bills. Proponents of carbon taxes have pointed to several kinds of efficiency gains that may accompany such taxes. It is often claimed, for example, that imposing a carbon tax allows policy makers to eliminate other, more costly “complementary” measures that are designed to reduce emissions, such as green subsidies (eg for solar and wind power), renewable energy targets, and so on.

However, these efficiency gains are unlikely to materialise in Australia’s case: the complementary measures have remained in Australia after the carbon tax was put in place. To make matters worse, new complementary measures have been introduced which will likely increase economic costs. Hence any hypothetical efficiency gains that may have occurred as a result of eliminating other programs remain just that: hypothetical.

**Overall, Australia’s exports are relatively emissions intensive. Hence a carbon tax is likely to increase the cost of exports, whose prices are largely determined on world markets.**

**The “Double Dividend” is Elusive in Theory and Difficult to Achieve in Practice**

Carbon tax proponents also argue that carbon tax revenue can be “recycled” and used to reduce marginal income tax rates, thus providing a “double dividend.” The report also shows how the double dividend hypothesis is a dubious proposition in theory, due to the interaction between the carbon tax and the existing tax system (particularly personal income taxes and corporate taxes). In addition, as part of the household compensation package for the carbon tax, the Australian Government lowered some average income tax rates but actually *increased* marginal tax rates for around 2 million taxpayers. This increase in marginal tax rates is exactly the opposite policy of what a Government would do if it were trying to capture a “double dividend” from environmental taxation. In practice, therefore, there has been no double dividend from Australia’s carbon tax.

**Conclusion**

Poor policy processes tend to lead to poor policy outcomes. Australia’s carbon tax experience provides a number of important lessons in how not to go about implementing sensible climate change policy. Although a number of Government reports examined the possible costs of the carbon tax, none of them assessed the incremental net benefits of the policy. For a variety of reasons, it is unlikely that Australia’s carbon tax will achieve “abatement at least cost.” The most significant complementary climate change policies have remained in place after the introduction of the tax, and a range of new, costly measures were introduced to accompany the policy. These factors have weakened—perhaps fatally—the economic case for Australia’s carbon tax.



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