

DESIGNING AN EMISSIONS TRADING SCHEME TO ENCOURAGE THE REDUCTION OF GREENHOUSE GAS EMISSIONS: A COMPARISON OF AUSTRALIAN AND EUROPEAN EXPERIENCES

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Many States have implemented measures that create a price for one or more greenhouse gas (GHG) emissions to encourage their reduction and facilitate the transition towards an emissions-constrained economy. In the European Union, an emissions trading scheme (ETS) has operated since 2005. In July 2012, Australia's Clean Energy Act 2011 (Cth) created a price for some GHG emissions using a combination of tax and ETS components. Formal trading commences under this legislation in 2015. This article compares the design components of the Australian and European ETSs and considers whether particular features, incorporated into the Clean Energy Act to account for Australia's national circumstances, undermine or strengthen an ETS as a tool to encourage the mitigation of GHG emissions. This article concludes that the design of the ETS in Australia's Clean Energy Act has been manipulated to such an extent to account for national circumstances that its potential effectiveness to encourage the reduction of domestic GHG emissions could be undermined.

I INTRODUCTION

Climate change is one of the most challenging problems facing the international community today. Scientific research demonstrates that human activities are primary responsible for the significant increase in atmospheric emissions of GHG concentrations. Accordingly, the international community has called for States to take action to avoid climate change by mitigating domestic GHG emissions. Based on established principles of international environmental law, the *United Nations Framework Convention on Climate Change*¹ (UNFCCC) and the *Kyoto Protocol to the UNFCCC*² (Kyoto Protocol) form the basis of States international legal obligations to mitigate GHG emissions at a national level (international climate change regime). Whilst the UNFCCC encourages GHG emissions reduction to avoid 'dangerous anthropogenic interference with the climate system'³ it is the

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¹ *United Nations Framework Convention on Climate Change*, opened for signature 4 June 1992, 1771 UNTS 107, 31 ILM 849 (1992) (entered into force 21 March 1994).

² *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 16 March 1997, 37 ILM 22 (1998) (entered into force 16 February 2005).

³ UNFCCC, above n 1, art 2.

Kyoto Protocol that establishes specific GHG emissions reduction targets and obligations that guide the mitigation activities of participating States.⁴ Whilst the *Kyoto Protocol* initially adopted a target for the reduction of global GHG emissions to five per cent below 1990 levels in the first commitment period of 2008-2012, estimates about the level of reductions required to mitigate the most dangerous effects of climate change have since changed.⁵ Based on voluntary pledges made in 2009,⁶ the *Kyoto Protocol* has been revised to create a second commitment period from 2013 to 2020, during which participating States must reduce GHG emissions by 18 per cent below 1990 levels.⁷

The *Kyoto Protocol* includes several ‘flexibility’ mechanisms to assist States to reduce GHG emissions, including the clean development mechanism, joint implementation projects and an emissions trading scheme (ETS). Credits received by States for participating in the clean development mechanism or joint implementation can be put towards their GHG emissions reduction obligations under the *Kyoto Protocol*.⁸ Alternatively, participants can sell excess credits to other States that need further credits to meet their GHG emissions reduction commitments. The international ETS foreshadowed in Article 17 of the *Kyoto Protocol* was intended to create a formal market for the trade of these credits. However, an ETS for all GHG emissions was never formally established under the international climate change regime and instead a variety of ETSs have been established to enable entities to buy, sell or trade proprietary rights to emit certain substances into the atmosphere. For example, in the United States an ETS has been established to encourage the reduction of nitrous oxide and sulphur dioxide that cause acidification.⁹ In the European Union, an ETS has operated since 2005 (EU ETS)¹⁰ to encourage the reduction of carbon dioxide, as the most common GHG.¹¹ In total, GHG related ETS now operate in more than 30 States worldwide.¹²

⁴ *Kyoto Protocol*, above n 2, arts 2, 3 and 4.

⁵ United Nations Environment Program, ‘The Emissions Gap Report: Are the Copenhagen pledges sufficient to limit global warming to 2°C or 1.5°C? A preliminary assessment’ (2010); Detlef van Vuuren, Andries Hof and Michel den Elzen ‘Meeting the 2 degree target’ (Netherlands Environment Assessment Agency, 2009) 40.

⁶ UNFCCC ‘Quantified economy-wide emissions targets for 2020’ (2012) <http://unfccc.int/meetings/copenhagen_dec_2009/items/5264.php> and <unfccc.int/meetings/cop_15/copenhagen_accord/items/5265.php>.

⁷ *Kyoto Protocol*, above n 2, art 3 as amended by Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, *Report of the Conference of the Parties service as the meeting of the Parties to the Kyoto Protocol on its eighth session, held in Doha from 26 November to 8 December 2012* UN Doc UNFCCC/KP/CMP/2012/13/Add.1. Decision 1/CMP.8 ‘Amendment to the Kyoto Protocol pursuant to its Article 3, paragraph 9 (the Doha Amendment)’ (28 February 2013). Note that the Doha Amendment is yet to come into force in accordance with arts 20 and 21 of the *Kyoto Protocol*.

⁸ *Kyoto Protocol*, above n 2, art 3.

⁹ For example the trading scheme for sulphur dioxide and nitrogen oxide created under the *Clean Air Act of 1963* 4 CAA (1990) (United States of America).

¹⁰ *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowances Trading within the Community and Amending Council Directive 96/61/EC* [2003] OJ L 275/32, as amended by *Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community, in respect of the Kyoto Protocol’s Project Mechanisms* [2004] OJ L338/18, *Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities within the scheme for greenhouse gas emission allowance trading within the Community* [2009] OJ L8/3, and *Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community* [2009] OJ L140/63.

¹¹ Note the performance of the EU ETS in relation to GHG emissions reduction could be regarded as less than optimal due to specific regional conditions, including the recent financial crisis. Importantly, the EU ETS has consistently evolved over the time of its operation and arguably its design continues to improve. Thomas Spencer and Emmanuel Guerlin, ‘Time to reform the EU emissions trading scheme’ (2012) *European Energy*

The proliferation of these schemes highlights the increasing use of market forces to guide the price of one or more GHG emissions (carbon price). Stern reasons that putting a price on one or more GHG emissions can encourage a reduction in emissions intensive activities as they become too costly to operate in some cases and entities seek to reduce their liability to pay the carbon price by altering consumption or production preferences.¹³

The Australian Government has attempted to enact an ETS to create a carbon price on several occasions.¹⁴ Although both federal¹⁵ and State¹⁶ governments have each investigated how an ETS could be created in Australia in the past decade, neither investigation resulted in a formal proposal to enact an Australian ETS mechanism. Draft legislation for an ETS was finally introduced as the *Carbon Pollution Reduction Scheme Bill 2009* (Cth) following independent recommendations by the Garnaut Review on Climate Change,¹⁷ and revised government policy.¹⁸ Despite this, the Bill was generally unpopular and ultimately rejected in 2010.¹⁹ Although the recent *Clean Energy Bill 2011* (Cth) faced similar resistance, the combined tax and ETS mechanism passed both Houses of Parliament by a narrow majority. Under the *Clean Energy Act 2011* (Cth) (Clean Energy Act) an ETS mechanism will operate from the commencement of flexible charge years from 1 July 2015.

Accordingly, an ETS has been enacted in both Australia and the European Union to create a carbon price for certain activities in specific economic sectors. Whilst in the European Union this ETS has operated for some time, the ETS component of the *Clean Energy Act* is yet to begin, despite recent discussion that its commencement date may be sooner than expected. This article considers whether the effectiveness of the *Clean Energy Act*, as a GHG emissions mitigation tool, has been undermined or strengthened by the configuration of ETS components that take account of specific national circumstances, based on the functional comparison between the *Clean Energy Act* and the European Union ETS.

Part II of this article identifies a method for comparing Australian and European Union ETS. Principles are also identified in this Part as a means to consider the effectiveness of the instrument to encourage the reduction of GHG emissions. In Part III key features of the Australian and European Union ETS are identified, including scheme objectives, scheme coverage, pollution caps, international linking, concessions and revenue use. These features are then compared for literal similarity and difference, and are assessed in light of relevant national circumstances. Conclusions are drawn from the results of this functional comparison

Review; European Commission, 'Commissioner Hedergaard's Statement on Today's Vote by the European Parliament on the Back-Loading Proposal' (Media Release, Memo 13/343, 16 April 2013).

¹² Climate Commission, *The Critical Decade: International Action on Climate Change* (Climate Change Commission, 2013) annex reports that emissions trading schemes have been created or are under development to create a carbon price in the European Union plus at least nine additional States.

¹³ Nicholas Stern, *The Economics of Climate Change: The Stern review* (Cambridge University Press, UK, 2006).

¹⁴ Carbon Pollution Reduction Scheme Bill 2009 (Cth); Carbon Pollution Reduction Scheme Bill 2009 [No. 2] (Cth); Carbon Pollution Reduction Scheme Bill 2010 (Cth).

¹⁵ Australian Government, *Report of the Task Group on Emissions Trading* (2007).

¹⁶ National Emissions Trading Taskforce, *Possible Design for a National Greenhouse Gas Emissions Trading Scheme* (2006).

¹⁷ Dr Ross Garnaut, *Garnaut Climate Change Review* (Cambridge University Press, Melbourne, 2008).

¹⁸ Commonwealth of Australia, *Carbon Pollution Reduction Scheme: Australia's Low Pollution Future* (2008).

¹⁹ This was despite reintroduction as the Carbon Pollution Reduction Scheme Bill 2009 [No. 2] (Cth), and the Carbon Pollution Reduction Scheme Bill 2010 (Cth) that incorporated over 140 amendments.

in Part IV. In Part V comments are then made about whether the design of Australia's *Clean Energy Act* has been undermined by changes made to account for national circumstances, in comparison to the design of the EU ETS.

II COMPARISON ACCORDING TO FUNCTION

Although the comparison of laws has emerged as a discrete legal subject, there is no universally accepted definition of what constitutes comparative law. Despite this, German theorists Zweigert and Kötz argue that because 'every legal system faces the same problems',²⁰ comparing the function of laws and regulations across different jurisdictions can be used to solve specific legal problems or to guide more general legal reform.

Comparison can be made in a literal sense between the provisions or components of the EU ETS and the *Clean Energy Act* that serve the same or equivalent functions in their respective jurisdiction. However, although Zweigert and Kötz identify the conditions and steps leading up to comparison of laws,²¹ no express method has been prescribed for the comparison of laws and legal regulations in practice, apart from the necessity of undertaking a literal study of similarity and difference.²² Practically however, comparison of laws and regulations in different States for the purpose of law reform or to answer a specific legal question requires further consideration of underlying factors that have contributed to the particular design of legislation. Other proponents of functional comparison emphasise this point, arguing that a study of similarity and difference between laws must extend to consideration of other factors, including the interaction between laws, as well as non-legal factors including historical, political, cultural or social circumstances.²³ These factors provide an explanation of the function of the laws and regulations in their home jurisdiction. They can also be used to inform an assessment of whether laws and regulations might be suitable sources for legal reform in other States in light of domestic circumstances.

A Determining the Effectiveness of an ETS

In this article, similarities and differences between the EU ETS and the ETS component of Australia's *Clean Energy Act* are discussed. From this discussion the author considers the Australian ETS differences to the EU ETS under the *Clean Energy Act* in light of Australia's domestic circumstances to ascertain whether these differences undermine its effectiveness. As the *Clean Energy Act* has only operated since 1 July 2012, it is impossible to measure whether the *Clean Energy Act* has actually resulted in any reduction of Australia's GHG emissions. As an alternative measure, the *Garnaut Review of Climate Change* proposed a set

²⁰ Konrad Zweigert and Hein Kötz, *An Introduction to Comparative Law* (Tony Weir translator, Clarendon Press, Oxford, 3rd ed, 1998) 34 [trans of: *Einführung in die Rechtsvergleichung*, (first published 1977)].

²¹ *Ibid*, ch 3.

²² Zweigert and Kötz, above n 20, 43-44; John Reitz, 'How to Do Comparative Law' (1998) 46 *American Journal of Comparative Law* 617, 620; Also similarity in difference and difference in similarity, see Gerhard Dannemann, 'Comparative Law: Study of Similarities or Differences?' in Mathias Reimann and Reinhard Zimmermann (eds) *The Oxford Handbook of Comparative Law* (Oxford University Press, Oxford, 2006) 383, 419.

²³ Reitz, above n 22, 626.

of principles and design features for an Australian ETS,²⁴ which can be summarised as follows:

- (i) Principle one - scarcity aligned with an emissions target: participants must have confidence that permits are in scarce supply and reflect the targets and trajectories for desired reductions of GHG emissions. Scheme coverage of activities and GHG emissions should be as broad as possible within ‘practical constraints’;
- (ii) Principle two - credibility of institutions: conditions of the ETS should not be capable of influence by political pressure. Changes to rules of the ETS should be done through reliable, steady and transparent processes.
- (iii) Principle three - simplicity of rules: ETS rules should be applied consistently and special rules (including concessions and exemptions) avoided;
- (iv) Principle four - tradability of emissions permits: emissions permits should be tradable; and
- (v) Principle five - integration with other markets: barriers between different ETS should be minimised.

The likely effectiveness of the *Clean Energy Act’s* ETS component to encourage the reduction of GHG emissions can be considered against these principles and design features. In this context, several key design features of the *Clean Energy Act* have been selected for comparison with EU ETS provisions which include scheme objectives, scheme coverage, pollution caps, international linkage, concessions and use of revenue. Relevant provisions of the *Clean Energy Act* and the EU ETS are compared in the next section of this article based on the dual approach to functional comparison, by (i) literally comparing equivalent provisions to identify similarity and difference, and (ii) considering how these provisions apply in each jurisdiction in light of national circumstances.

III SIMILARITIES AND DIFFERENCES BETWEEN THE *CLEAN ENERGY ACT* AND THE EU ETS

A *ETS Objectives*

According to the first principle guiding the design of an ETS to encourage GHG emissions mitigation, an ETS should be designed to restrict available emissions in line with an emissions target. At one level, the primary objectives of both the *Clean Energy Act* and the EU ETS are consistent with this principle as they each promote the reduction of domestic or regional GHG emissions.

The objects of the *Clean Energy Act* aim to meet Australia’s international obligations and domestic interest to reduce GHG emissions.²⁵ The *Clean Energy Act* is intended to give effect to Australia’s obligations under the international climate change regime and support the development of an international agreement consistent with ‘Australia’s national interest in ensuring that average global temperatures increase by not more than [two] degrees Celsius

²⁴ Garnaut, above n 17, ch 14. In relation to design of Australian and European scheme see, Commission of the European Communities, *Green Paper on Greenhouse Gas Emissions Trading within the European Union* COM (2000) 87 final [3]; Australian Government, *Carbon Pollution Reduction Scheme: Australia’s Low Pollution Future* (vol 1, 2008) [5.3.1]. International material includes United Nations Environment Programme, ‘*An Emerging Market for the Environment: A Guide to Emissions Trading*’ (2002) pt 2.

²⁵ *Clean Energy Act 2011* (Cth) s3.

above pre-industrial levels.’²⁶ Reference is also made to domestic long-term reduction targets, specifically to flexible and cost-effective action directed towards meeting Australia’s long-term target of reducing Australia’s net GHG emissions to 80 per cent below 2000 levels by 2050.²⁷ However, it is also an objective of the *Clean Energy Act* to put a price on GHG emissions, in a way that not only encourages investment in clean energy but also supports jobs, competition and economic growth.²⁸

In Europe, Article 1 of European Union *Directive 2003/87/EC* states the purpose of enacting the ETS in general terms as to ‘promote reductions of [GHG] emissions in a cost-effective and economically efficient manner.’

1 *A Literal Comparison of Legislative Provisions*

For the purposes of identifying the literal similarities and differences between objectives of the *Clean Energy Act* and the EU ETS, it is clear that the legislative objectives of each scheme are different. Whilst the *Clean Energy Act* is designed to contribute to the mitigation of Australia’s GHG emissions, in the context of global GHG emissions reductions, these reductions are to be achieved in a very particular way. Although fewer specific restrictions are placed on the objectives of the EU ETS than the *Clean Energy Act*, the EU ETS objectives are not referable to any specific reduction of GHG emissions unlike the Australian scheme. Whether the design of *Clean Energy Act* objectives will undermine the effectiveness of the ETS to encourage GHG emissions reduction when trading commences in 2015, or could be improved based on the design of equivalent provisions of the EU ETS, cannot be determined by literal comparison alone. Instead, reasons underlying the design of scheme objectives in this manner must be considered.

2 *Practical Implementation of Provisions – Influence of National Circumstances*

Scheme objectives must be considered in light of the circumstances that led to the initial enactment of the legislation. In Australia, development of GHG emissions mitigation measures, in particular those that create a carbon price, has been slowed by the ‘defend and protect’²⁹ stance adopted by previous governments against the assignment of ‘punitive’ GHG emissions reduction targets that do not account for Australia’s ‘special circumstances’.³⁰ There appears to still be some debate about the extent of GHG emissions mitigation Australia should take in light of these circumstances, evidenced by allowances made for some of these factors in the current ‘Securing a Clean Energy Future’³¹ policy (Clean Energy Policy). A consequence of this course of events is that consideration about the use of ETS and other carbon pricing mechanisms in Australia has only been undertaken in fairly recent times, so that the adoption of the *Clean Energy Act* has occurred in a very different context to the creation of a carbon price in Europe.

²⁶ Ibid ss3(a) and (b).

²⁷ Ibid s3(c).

²⁸ Ibid s 3(d).

²⁹ John Howard, *Safeguarding the future: Australia’s response to climate change* (Commonwealth of Australia, 1997).

³⁰ Ibid.

³¹ Australian Government, *Securing a Clean Energy Future: The Australian Government’s climate change plan* (Commonwealth, 2011).

By comparison, European climate change and energy policies already supported the use of pricing mechanisms to encourage the reduction of GHG emissions and achieve related energy goals³² when the EU ETS was adopted in 2003.³³ There was also already awareness about emissions pricing mechanisms in the region, generated from existing measures that had been designed to reduce both the effects of trans-boundary environmental problems including acidification.³⁴ In this regard, preparatory documents to the EU ETS suggest that the operation and potential consequences of this mechanism were not completely unfamiliar.³⁵ Also, being supported by existing policy, the objective of the EU ETS is given further meaning by the preamble to *Directive 2003/87/EC*. The preamble not only identifies the EU ETS as a way to satisfy the region's international GHG emissions reduction obligations more effectively, but suggests that these obligations should be met by the EU ETS only 'with the least possible diminution of economic development and employment'.³⁶

In light of these different starting points, it is unsurprising that the objective of the EU ETS is subject to fewer qualifications than the *Clean Energy Act*, and that greater emphasis is placed on supporting investment, economic growth and employment in the *Clean Energy Act*. On closer inspection however, there are also practical reasons behind the design of objective provisions in each jurisdiction.

Australia's national circumstances affect the way in which the *Clean Energy Act* can be used to encourage the reduction of domestic GHG emissions. According to Australia's 2012 greenhouse gas inventory, the stationary energy and transport sectors make the largest contributions to domestic emissions (54.1 per cent and 15.3 per cent respectively).³⁷ A key reason for this is that fossil fuels are a key source of energy for Australia. In respect of stationary energy, domestic electricity sources are dominated by coal (76.7 per cent) and gas (15 per cent) and renewable energies only comprise eight per cent of the electricity market.³⁸ This is unsurprising, given that Australia has ten per cent of the world's black coal resources,³⁹ and that energy industries contributed over \$69billion to Australia's economy in 2009-10, employing over 106,000 people.⁴⁰ The abundance of domestic fossil fuel sources

³² Commission of the European Communities, *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – 20 20 by 2020: Europe's Climate Change Opportunity* COM (2008) 30; Commission of the European Communities, *Communication from the Commissioner to the European Council and the European Parliament: An Energy Policy for Europe* COM (2007) 1.

³³ *Directive 2003/87/EC*, above n 10.

³⁴ As parties to the protocols under the *Geneva Convention* on long range trans-boundary air pollution. *Geneva Convention*, opened for signature on 13 November 1979, 18 ILM 1442, (entered into force on 16 March 1983); see United Nations Economic Commission for Europe, *Protocols* <http://www.unece.org/env/lrtap/status/lrtap_s.html>.

³⁵ Commission of the European Communities, *Green Paper on Greenhouse Gas Emissions Trading within the European Union* COM (2000) 87 final, 8.

³⁶ *Directive 2003/87/EC*, above n 10, [4] – [5].

³⁷ Commonwealth of Australia, *Australian National Greenhouse Accounts: National Inventory Report 2010, the Australian government submission to the United Nations Framework Convention on Climate Change April 2012* (2012) 28. Table 2.1 identifies that energy (stationary, transport, fugitive) accounted for 76.9 per cent of Australia's emissions in 2010. Within this, stationary energy accounted for 54.1 per cent of total emissions, transport for 15.3 per cent and fugitive emissions for 7.5 per cent.

³⁸ Department of Resources, Energy and Tourism and Bureau of Resources and Energy Economics, *Energy in Australia* (Commonwealth, 2012) 33.

³⁹ *Ibid*, 1.

⁴⁰ Comprising coal, petroleum, electricity and gas supply industries, see Department of Resources, Energy and Tourism and Bureau of Resources and Energy Economics, above n 38, 3.

also means that the price of electricity generated in Australia from these sources, as compared to other OECD countries, is relatively low.⁴¹ Conversely, the retail price of electricity generated from renewable energy sources remains more expensive than fossil fuel equivalents.⁴² Based on Australia's electricity fuel mix, it is clear how arguments could be made against creating a carbon price to encourage the rapid mitigation of stationary energy sector GHG emissions because of the threat that this would cause to economic growth and local jobs contrary to scheme objectives. In this regard, the entrenched position of fossil fuels in Australia's stationary energy sector alone supports the qualifications made to scheme objectives.

The way that fossil fuels were used in Europe at the time the EU ETS was adopted in 2003, posed a different mitigation challenge for the EU ETS. In the (then) 15 member States of the European Union, only 23 per cent of electricity was produced from coal,⁴³ because of the dominant use of nuclear (30.2 per cent), natural gas (22 per cent) and renewable energies (14 per cent) for the production of electricity.⁴⁴ This trend has been sustained to the present day, as the renewable energy sector continues to make a sizeable contribution to the regional economy⁴⁵ and commands a large workforce.⁴⁶ Accordingly, the minor qualifications made to the EU ETS objective could be explained by the reversed role of fossil fuels and renewable energy or nuclear sources in Europe when the EU ETS was adopted. Given Europe's fuel mix, creating a carbon price that will increase the cost of consuming fossil fuels is likely to be compatible with causing the *least possible* diminution of economic development and employment as required by *Directive 2003/87/EC*.

Although the *Clean Energy Act* and the EU ETS both have similar objectives to encourage the reduction of GHG emissions, different qualifications are made to this primary objective in each scheme that could undermine the effectiveness of the ETS to encourage GHG emissions mitigation. In Australia it is arguable that these qualifications are likely to override the environmental objectives of the *Clean Energy Act* because of the crucial position of the stationary energy sector for economic growth and employment in Australia. Conversely in the European Union it is arguable that environmental objectives are not threatened to the same extent, because the region is less reliant on energy from fossil fuels and the EU ETS objectives do not require the express support of economic development and employment.

B Covered Emissions

⁴¹Department of Resources, Energy and Tourism and Bureau of Resources and Energy Economics, above n 38, 41; cf 2012 report made to the Energy Users Association of Australia that suggests that rates are now more comparable because of high value of Australian dollar. See also Bruce Mountain, 'Electricity Prices in Australia: An International Comparison' *Carbon+Energy Markets* (March 2012).

⁴²Retail energy companies offer electricity from renewable sources at a surcharge on standard consumption charges per kilowatt hour. For example, see Origin Energy 'Green Power and Green Gas' pricing information (2013) < <http://www.originenergy.com.au/1544/GreenPower-Green-Gas>>.

⁴³Bureau of Resources and Energy Economics, *Energy in Australia 2012* (2012) 33. For 2009-10, note the calculation of renewable energy includes 'other' at three per cent.

⁴⁴In 2005 at the commencement of the EU ETS, see European Energy Agency, *Energy and Environment Report 2008* (EEA Report No 6/2008) [2.2].

⁴⁵EurObserv'er, 'The State of Renewable Energies in Europe' (12th edition, 2012) 174-5 reports turnover in renewable energies across EU in 2012 as €137 274 million.

⁴⁶Ibid, 172 -3 reports 1186 460 people employed in renewable energy sector across the European Union.

The principle of emissions scarcity identified by Garnaut for the design of an ETS in Australia to encourage the reduction of domestic GHG emissions is also relevant to scheme coverage. Garnaut highlights that an ETS should be designed to be as broad as possible, within practical constraints. This not only ensures that the burden of carbon pricing is spread amongst the largest number of relevant emitters, but that scarcity of emission permits can be delivered across all domestic GHG emissions sources. An ETS will not be able to effectively encourage the reduction of domestic GHG emissions if it has a limited scope or inadequate coverage of key sources of GHG emissions across economic sectors.

However, neither the *Clean Energy Act* nor the EU ETS is designed to cover all GHG emissions from every activity in every sector of the economy. The EU ETS has been designed to apply to a limited percentage of activities causing GHG emissions in the European Union, and applies to only 40 per cent of regional GHG emissions.⁴⁷ Whilst stationary energy, transport and agriculture sectors make the greatest contributions to Europe's regional GHG emissions, the EU ETS does not apply to road transport or GHG emissions from agricultural activities.⁴⁸ Entities can opt out of the EU ETS if they emit less than 25000 tonnes of GHGs per annum.⁴⁹

By comparison, both the tax and ETS components of the *Clean Energy Act* apply to a larger portion of Australia's domestic GHG emissions (60 per cent).⁵⁰ Given that stationary energy, transport and agriculture also provide the largest contributions to Australia's domestic GHG emissions, ideally the *Clean Energy Act* would apply to emissions in these sectors. However, this is not the case as emissions from transport fuels subject to excise and customs duty,⁵¹ agricultural activities⁵² and land use⁵³ are specifically excluded from the scope of the legislation.⁵⁴ Similar minimum GHG emissions thresholds also apply to the *Clean Energy Act* (25 000 tonnes) although a lower threshold of 10 000 tonnes applies where GHG are emitted from landfill.⁵⁵

1 A Literal Comparison of Legislative Provisions

By literally comparing the coverage of the *Clean Energy Act* and the EU ETS, both similarities and differences can be identified. Both schemes have limited coverage, and GHG emissions arising from road transport and agriculture are common exclusions. Other sources have been subject to exclusion on a limited basis. For example GHG emissions from aviation

⁴⁷ Denny Ellerman and Paul Joskow, 'The European Union's emissions trading scheme in perspective' (Pew Centre on Global Climate Change, 2008) 3.

⁴⁸ European Energy Agency, 'GHG trends and projections in the EU-27' annex to the European Energy Agency, 'Greenhouse gas emissions trends and projections in Europe 2012 – tracking progress towards Kyoto and 2020 targets' (EEA Report No 6/2012). See *Directive 2003/87/EC*, above n 10, annex I.

⁴⁹ *Directive 2003/87/EC*, above n 10, art 27 as inserted by *Directive 2009/29/EC*.

⁵⁰ Clean Energy Regulator, *Guide to Carbon Pricing Liability under the Clean Energy Act 2011* (2012) 5. Sources of GHG emissions excluded from the *Clean Energy Act* are identified in section 30.

⁵¹ *Clean Energy Act 2011* (Cth) s 30(2).

⁵² *Clean Energy Act 2011* (Cth) s 30(4). Note that the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) enables credits to be obtained for agricultural and forestry activities that mitigate or store GHG emissions, that can be used by entities that have direct liability under the *Clean Energy Act*.

⁵³ *Clean Energy Act 2011* (Cth) s 30(5).

⁵⁴ The previous *Carbon Pollution Reduction Scheme Bill 2010* (Cth) attempted to cover emissions from transport and forestry.

⁵⁵ *Clean Energy Act 2011* (Cth) ss 20, 23.

were excluded from the EU ETS until 1 January 2013, whereas under the Australian scheme, voluntary opt-in rules apply to all large users of transport fuels (including for aviation) since the scheme's commencement.⁵⁶ Whether the coverage of the *Clean Energy Act* undermines its effectiveness to encourage GHG emissions reductions, or could be improved by reference to equivalent design of the EU ETS however, cannot be determined by literal comparison alone. Instead, reasons underlying the limits imposed on scheme coverage must be considered.

2 Implementation of Law in Practice – Influence of National Circumstances

A range of factors influence and justify the limitation of both the *Clean Energy Act* and the EU ETS from applying to all sources of GHG emissions in their respective jurisdictions. In Australia, Maslyuk and Dharmaranta argue the limited scope of the *Clean Energy Act* is justified because the scheme is in its initial years of operation.⁵⁷ Based on this argument, limited coverage can be justified for several more years, as the ETS component of the *Clean Energy Act* must also go through initial stages of operation when it commences in 2015. There is also merit in limiting coverage of an ETS based on difficulties associated with capturing those emissions within the scheme. For example, most emissions from Australia's transport sector arise from road transport.⁵⁸ Although the body of research about how an ETS may be applied to road transport emissions is growing, commentators also highlight that applying an ETS to road transport emissions as part of an economy-wide scheme may be difficult - the interaction between an ETS and existing road and fuel taxes,⁵⁹ and identification of an appropriate point of liability are some issues of concern.⁶⁰ Australia's agricultural sector faces different challenges, which the Clean Energy Plan states would be better addressed by encouraging farmers and landholders not only to reduce their own emissions, but also to remove the emissions of others from the atmosphere by bio-sequestration.⁶¹ A complementary credit system has been established in these sectors for this purpose, which is linked to the *Clean Energy Act*.⁶² Accordingly in Australia the exclusion of transport and agricultural and forestry emissions is supported by these factors.

Compared with the EU ETS however, exclusion of GHG emissions sources by the *Clean Energy Act* over the long-term should be questioned. This is because the limited coverage of industry sectors under the EU ETS is made in the context of Europe's wider energy policies and complementary pricing instruments and regulatory measures that cover many of the activities and sectors intentionally excluded from its scope. GHG emissions from road

⁵⁶ Directive 2003/87/EC, above n 10, art 3a -3g as inserted by Directive 2008/101/EC; *Clean Energy Act 2011* (Cth) ss 92A – 92H.

⁵⁷ Svetlana Maslyuk and Dinusha Dharmaranta, 'Comparative Analysis of the Existing and Proposed ETS' (Department of Economics Discussion Paper 15/11, Monash University, 2011) 26.

⁵⁸ Department of Climate Change and Energy Efficiency, *Australia's Emissions Projections* (Commonwealth, 2012) 25; Australian Government, *Australian National Greenhouse Accounts: National Inventory Report 2010 Volume 1* (2012) 76-77.

⁵⁹ Christian Flaschland et al, 'Climate policies for Road Transport Revisited (II): Closing the Policy Gap with Cap-And-Trade' (2011) 39 *Energy Policy* 2100, 2101.

⁶⁰ John German, 'Reducing Vehicle Emissions through Cap-And-Trade Schemes' in Daniel Sperling and James Cannon (eds) *Driving Climate Change – Cutting Carbon from Transport* (Academic Press, USA, 2007); Christian Flaschland et al, 'Climate Policies for Road Transport Revisited (II): Closing the Policy Gap with Cap-And-Trade' (2011) 39 *Energy Policy* 2100.

⁶¹ Australian Government, above n 31, ch 9.

⁶² *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth).

transport are one example. Although road transport GHG emissions are excluded from the EU ETS, energy taxes create a price signal based on environmental characteristics of transport fuels,⁶³ and vehicle manufacturers are motivated to produce vehicles with fewer emissions per kilometre in order to meet mandatory vehicle GHG emissions standards.⁶⁴ Accordingly, GHG emissions excluded from the EU ETS are at least partly addressed by other pricing mechanisms and regulations that complement the EU ETS, so that there is little requirement for the EU ETS to extend its coverage across the economy unless it is practical, effective and efficient to do so.

C Control of the Number of Emissions Permits

Scarcity can be created by mechanisms that restrict the number of emissions permits available for purchase or use by scheme participants. Determining the maximum number of available units is a vital component of any cap-and-trade ETS. It is this feature that controls the number of new permits issued by the scheme regulator during any one year to guide the reduction of GHG emissions towards a specific target and drive the market price of emissions permits. Although the *Clean Energy Act* and the EU ETS each include mechanisms to restrict the quantity of emissions units or allowances, the process by which this occurs is different in each jurisdiction.

Part II of the *Clean Energy Act* outlines a process for determining the ‘pollution cap’ used to control the quantity of carbon units issued under the ETS from its commencement in 2015. The structure of this cap can roughly be divided into primary or default caps. The primary cap is set by regulations determined five years in advance by the Minister for Climate Change and Energy Efficiency with Parliamentary consent.⁶⁵ The Minister must consider certain factors, and has the discretion to consider others, when setting the pollution cap. The only factors that the Minister must consider are Australia’s obligations under the international climate change regime and reports compiled by the independent Climate Change Authority about the pollution cap.⁶⁶ The Minister has greater scope to consider discretionary factors, including Australia’s undertakings to reduce GHG emissions at international law, its medium or long-term targets identified in domestic policy or law, and its progress towards achieving these targets.⁶⁷ Although these factors could be used to support progressive tightening of the pollution cap over time, other factors may be used to support the determination of less stringent pollution caps. Economic and social implications associated with setting the

⁶³ Council Directive 2003/96/EC of 27 October 2003 Restructuring the Community Framework for the Taxation of Energy Products and Electricity [2003] OJ L283/51; Note that this instrument imposes taxation based on the energy content of transport fuels. Whilst this is not directly a carbon price, amendments to this directive are currently under consideration to include carbon dioxide emissions in the base of this tax, see European Commission, *Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee: Smarter Energy Taxation for the EU: Proposal for a Revision of the Energy Taxation Directive* COM (2011) 168 final.

⁶⁴ Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 Setting Emission Performance Standards for New Passenger Cars as Part of the Community’s Integrated Approach to Reduce CO₂ Emissions from Light-Duty Vehicles [2009] OJ L 140/1; Regulation (EU) No 510 of 2011 of the European Parliament and of the Council of 11 May 2011 Setting Emission Performance Standards for New Light Commercial Vehicles as Part of the Community’s Integrated Approach to Reduce CO₂ Emissions from Light-Duty Vehicles [2011] OJ L 145/1.

⁶⁵ *Clean Energy Act 2011* (Cth) ss 14, 15 and 16.

⁶⁶ *Ibid* s 14(2)(a) and (b). Note that the Climate Change Authority has commenced review of the pollution cap for 2015-16 to be released February 2014.

⁶⁷ *Ibid* s 14(2)(c).

pollution cap at various levels are factors that the Minister may consider in this regard. If the Minister fails to determine the pollution cap, or a determined cap has been disallowed by Parliament, a ‘default cap’ applies. Under the default cap, the number of carbon units is reduced according to a prescribed formula.⁶⁸

In comparison the method of controlling the number of allowances available under the EU ETS is less complex. Under the European scheme the quantity of available allowances is reduced annually by a fixed percentage (1.74 per cent), which has been aligned to a trajectory that reduces regional emissions at a constant rate towards the regional emissions reduction target required at 2020 (being 20 per cent below 1990 levels).⁶⁹ However, this linear formula has only applied since 1 January 2013, before which member States could request a certain number of allowances to be allocated to them, according with estimates contained in a national allocation plan.⁷⁰

1 *A Literal Comparison of Legislative Provisions*

It is clear that when compared literally, different methods are currently used in the EU ETS and the *Clean Energy Act* to set and reduce the number of emissions permits available for purchase. Nevertheless, the *Clean Energy Act*’s pollution cap also differs from the previous EU ETS method based on national allocation plans. Although discretion is common between the Australian pollution cap and historical European national allocation plan processes, the Australian provisions at least restrict this discretion to a Minister of the Government. Whether the design of Australia’s pollution cap procedure undermines the effectiveness of the ETS to encourage GHG emissions reductions requires more detailed consideration of the underlying reasons for designing cap provisions in this manner.

2 *Implementation of Law in Practice – Influence of National Circumstances*

Despite the differences in how the quantity of available emissions permits is controlled in Australia and the European Union, both approaches have been justified according to local circumstances.

Political influence and economic conditions have impacted negatively on the capping provisions of the EU ETS. During Phase I of the EU ETS (2005-2007), the initial allocation of allowances made in accordance with ‘National Allocation Plans’ created by member States was based on projected rather than historical GHG emissions baselines.⁷¹ This led to an initial over-allocation of emissions allowances because member States, industry and State lobbyists were able to influence the cap imposed on GHG emissions.⁷² It took several years for an emissions baseline to be created from reported GHG emissions, and a linear reduction

⁶⁸ Ibid ss 17, 18.

⁶⁹ *Directive 2003/87/EC*, above n 10, art 9 as inserted by *Directive 2009/29/EC*; see also *Directive 2009/29/EC*, above n 10, [13].

⁷⁰ *Directive 2003/87/EC*, above n 10, art 9 as repealed by *Directive 2009/29/EC*.

⁷¹ Where member States controlled the allocation of permits, favourable treatment was expected, see European Commission, *Green Paper on Greenhouse Gas Emissions Trading within the European Union* COM (2000) 87, 17.

⁷² A Ellerman, B Buchner and C Curraro (eds) *Allocation in the European Emissions Trading Scheme: Rights Rents and Fairness* (Cambridge University Press, Cambridge, 2007); Markus Wråke et al, ‘What have we Learnt from the European Union’s Emissions Trading Scheme’ (2012) 41 *Ambio* 12, 13.

trajectory to be introduced, to reduce the possibility for future interference with allowance allocation.⁷³

More recently, financial instability in the European Union has adversely affected the relationship between the new linear reduction of available allowances and the price of those allowances in the EU ETS market. Although the European Union remains on track to meet its regional GHG emissions reduction targets,⁷⁴ authorities have highlighted that wavering industrial outputs have caused a decrease in demand for available allowances.⁷⁵ In a 2012 review of the EU ETS, the Centre for European Policy Studies theorises that this situation will reduce the market price of those allowances, enabling entities to make more GHG emissions for the same price, or to invest in emissions-intensive capital that will be ‘stranded’ once allowances prices are restored.⁷⁶ Rather than aligning the allowance cap with the reduced GHG emissions levels, the European Commission proposed to ‘back-load’ allowance auctions during Phase III to remove 900 million allowances from auctions occurring between 2013 and 2015, and adding them to auctions at the end of Phase III in 2020.⁷⁷ These events highlight that Europe’s adoption of a linear GHG emissions cap and reduction trajectory has been made in response to political influence, but maintained despite more recent economic pressure. Political and economic factors must also be considered in regulating the number of units available under the Australian scheme.

The design of Australia’s pollution cap could be vulnerable, as was the cap of the EU ETS, to political influence and economic conditions. Political influence may be asserted during determination of the pollution cap by the Minister, because of the extensive discretion given to the Minister in determining the cap and the limited guidance provided about how to weigh both mandatory and discretionary factors when coming to this determination. Political pressure may also arise in the context of Parliamentary consent. This is because no guidelines are given about the grounds that could be used by the Parliament to justify rejection of a pollution cap. Accordingly, it is possible that a cap may be rejected to serve political or private interests.⁷⁸

⁷³ Denny Ellerman and Barbara Buchner, ‘Over-allocation or Abatement? A Preliminary Analysis of the EU ETS based on 2005 Emissions Data’ (Fondazione Eni Enrico Mattei working paper, November 2006) 17-8. Note that the linear reduction trajectory was added after Phase I to address this issue. Linear reductions trajectory incorporated by *Directive 2009/29/EC*, above n 10.

⁷⁴ European Commission, *Report from the Commission to the European Parliament and the Council: Progress Towards Achieving the Kyoto Objectives* COM (2012) 626 final.

⁷⁵ European Environment Agency, ‘Why did Greenhouse Gas Emissions Fall in the EU in 2009?’ (EEA Analysis in Brief, European Environment Agency, 2009) 2.

⁷⁶ Christian Egenhofer, Andrei Marcu and Anton Georgiev, ‘Reviewing the EU ETS Review’ (Centre for European Policy Studies, 2012) 5.

⁷⁷ As contemplated by Article 29a of *Directive 2003/87/EC*. Note this proposal has not yet been approved, see European Commission, ‘Emissions Trading: Commission Prepares for Change of the Timing for Auctions of Emission Allowances’ (Press Release IP/12/850, 25 July 2012); European Commission, ‘Commission staff working document: information provided on the functioning of the EU emission trading system, the volumes of greenhouse gas emission allowances auctioned and freely allocated and the impact on the surplus of allowances in the period up to 2020’ SWD (2012) 234; European Commission, *Commission reacts to European Parliament back-loading vote* (Memo 13/343, 16 April 2013).

⁷⁸ For example Rodney J Keenan et al, ‘Commentary: Science and the Governance of Australia’s Climate Regime’ (2012) 2 *Nature Climate Change* 477, 478 highlights that balancing diverse interests is a challenge in setting an emission reduction target.

Indeed, stakeholders have already shown keen interest in the development of the *Clean Energy Act* in Australia, including the issue of units, concessional treatment and the overall price of GHG emissions.⁷⁹ It is reasonable to expect that these groups will continue to assert their interests in the ongoing development of the *Clean Energy Act*, which could be considered by the Minister as social or economic impacts of carbon pricing, or taken into account by the Parliament when deciding whether to approve a pollution cap. General public support could be a source of influence. Research suggests that the perception of an ETS's effectiveness to reduce Australia's GHG emissions influences public willingness to pay additional costs associated with a carbon price.⁸⁰ However, if the general public perceive the effectiveness of the ETS to reduce domestic GHG emissions poorly, then public resistance to the carbon price is likely to be greater. Public resistance to carbon pricing may therefore become an additional social or economic factor that could be considered by the Minister or the Parliament in relation to the pollution cap. Without greater control over factors considered by the Minister and the Parliament, there could be substantial variance in Australia's pollution cap from year to year, leading to uncertainty for scheme participants about the number of available units.

Furthermore, participants are unlikely to receive extensive notice of any changes to Australia's pollution cap, because of the design of provisions requiring advance notice of cap determinations. Australia's primary pollution cap is set only five years in advance.⁸¹ In this short period of time, the Climate Institute highlights that changes to the pollution cap with limited notice is unlikely to reduce investor confidence in sectors covered by the scheme.⁸² However, in the longer term, this notice period may be a problem, particularly for entities that require long term certainty to make investment decisions, business plans and other decisions.⁸³ For example, activities that require long-term planning, such as power plant construction or the development of new industrial facilities or processes, may be avoided if entities are uncertain about the number of units that will be available for purchase over time, given Australia's carbon price is closely linked to the supply and demand of available units.

D *International Linkage of ETS*

According to Garnaut, emissions permits should be tradeable and ETSs linked with minimal barriers to other similar markets. Linking of schemes provides participants with greater flexibility to satisfy their liabilities under a domestic scheme, as well as providing flexibility for States in the reduction of GHG emissions on a global scale.⁸⁴

Article 25 of *Directive 2003/87/EC* outlines the conditions in which credits created under the *Kyoto Protocol* may be recognised and how the EU ETS may be linked to other trading schemes. Since the start of Phase II in 2008, participants of the EU ETS have been able to use

⁷⁹ For example evidenced by stakeholder and interested party participation during public consultation phases to develop reports, and policies including Garnaut, above n 17, Australian Government, above n18, Senate Select Committee on the Scrutiny of New Taxes, Parliament of Australia, *The Carbon Tax* (2011); Australian Government, above n 31.

⁸⁰ Aktar and Bennett, 'Household Perceptions of Climate Change and Preference for Mitigation Action: The Case of the Carbon Pollution Reduction Scheme in Australia' (2011) 109 *Climatic Change* 417, 429.

⁸¹ *Clean Energy Act 2011* (Cth) s 15.

⁸² The Climate Institute, 'Achieving carbon pollution reduction and a switch to clean energy with carbon pollution pricing, limits and supporting policies' (Discussion paper, 2011) 10.

⁸³ Wråke et al, above n 73, 15-16.

⁸⁴ Garnaut, above n 17, 229-230.

Kyoto Protocol ‘credits’⁸⁵ in a limited way to satisfy their obligations. Use of *Kyoto Protocol* credits is not only limited by credit source⁸⁶ and type,⁸⁷ but also in relation to temporal flexibility mechanisms such as banking and borrowing. Importantly, *Kyoto Protocol* credits cannot be used by participants to satisfy more than 50 per cent of total emissions liabilities under the EU ETS between 2008 and 2020.⁸⁸ Agreements can also be made to link the EU ETS with other regional or domestic schemes, as long as those schemes are mandatory and have been designed with an absolute emissions cap. A preliminary commitment has been made to link the *Clean Energy Act*’s ETS and the EU ETS, so that Australian carbon units will be recognised in the EU ETS from 2018.⁸⁹ However, this is still subject to agreement on key issues including reporting and verification arrangements, accepted unit types, role of land-based domestic offsets, treatment of sectors that require support for competition and trade exposure and comparable market oversight.⁹⁰

The *Clean Energy Act* also provides for linking with other schemes, including the EU ETS, which enables liable entities to use a range of ‘eligible international units’⁹¹ to satisfy⁹² up to 50 per cent⁹³ of their liability for annual GHG emissions. Eligible international units are widely defined to include foreign units and, expressly, EU ETS allowances.⁹⁴ The *Clean Energy Amendment (International Emissions Trading and Other Measures) Bill 2012* (Cth) (Clean Energy Linking Act) confirms that *Kyoto Protocol* credits and EU ETS allowances will be recognised under the *Clean Energy Act* as soon as trading commences in 2015.⁹⁵

1 A Literal Comparison of Legislative Provisions

Compared literally, the ETS contained in the *Clean Energy Act* and EU ETS can both be linked with other trading scheme subject to several conditions. Whether the design of linking provisions in the *Clean Energy Act* undermines the effectiveness of the ETS to encourage GHG emissions reductions requires more detailed consideration of the underlying factors support the design of linking provisions.

2 Implementation of Law in Practice – Influence of National Circumstances

⁸⁵ ‘Certified Emission Reduction’ units in relation to ‘Clean Development Projects’ and ‘Emissions Reduction Units’ in relation to ‘Joint Implementation Projects’, *Kyoto Protocol*, above n 4, arts 6, 12.

⁸⁶ *Directive 2004/101/EC*, above n 10, [8].

⁸⁷ Removal units not recognised under EU ETS in relation to land use, land use change and forestry activities.

⁸⁸ *Directive 2003/87/EC*, above n 10, 11a(8) as inserted by *Directive 2009/29/EC*.

⁸⁹ European Commission and the Minister for Climate Change and Energy Efficiency, ‘Joint Press Release: Australia and the European Commission Agree on a Pathway towards Fully Linking Emissions Trading Schemes’ (IP 12/916, 28 August 2012).

⁹⁰ *Ibid.*

⁹¹ *Clean Energy Act 2011* (Cth) s122 refers to the surrender of ‘eligible emissions units’ which are defined in s 5 of the Act to include ‘eligible international emissions units’.

⁹² Note that linking to foreign schemes is prohibited before flexible charge years commence on 1 July 2015, see *Clean Energy Act 2011* (Cth) s 122(8). This limitation applies only to 2020.

⁹³ *Clean Energy Act 2011* (Cth) s 123; Explanatory Memorandum to the *Clean Energy Bill 2011* (Cth), [3.99].

⁹⁴ *Australian National Registry of Emissions Units Act 2011* (Cth) s 4 defines ‘eligible international unit’ to include types of *Kyoto Protocol* credits (certified emission reduction units from the Clean Development Mechanism, emissions reduction units from Joint Implementation, and removal units from land use, land use change and forestry provisions) as well as a ‘prescribed international unit’ which is a unit from a foreign scheme including the EU ETS.

⁹⁵ A price floor of \$15 (2015) was set pursuant to the *Clean Energy (International Unit Surrender Charge) Act 2011* (Cth) (repealed).

Despite both the *Clean Energy Act* and the EU ETS providing for links with other trading schemes, local circumstances are likely to impact on the influence that these links have on the effectiveness of each of the linked schemes to encourage the reduction of GHG emissions.

Concerns have been raised in each jurisdiction about the capacity for the EU ETS and the *Clean Energy Act's* ETS to be linked effectively with other trading schemes. In Europe, commentators⁹⁶ argue that although small differences between linked schemes can be tolerated, large variation in key linking criteria or scheme components⁹⁷ could result in pricing and permit transfer difficulties and may compromise the environmental and economic integrity of each of the linked schemes. In the Australian context, Jotzo and Betz also argue that scheme objectives must be compatible for schemes to be linked or risk creating political obstacles, such as the perception of 'comparable effort' towards GHG emission reductions in 2020.⁹⁸ Accordingly, even if the treatment and recognition of emissions permits is compatible between the Australian and European schemes, differences in scheme objectives, according to Jotzo and Betz, could be reason enough to delay linking of these schemes until these features are reconciled.

A key issue in Australia and Europe is the emerging discrepancy between the price of emissions permits. According to the *Clean Energy Linking Act*, the price of EU ETS allowances replaces the 'price floor' that was initially imposed on eligible international units used under the *Clean Energy Act*, set at \$15 per tonne. The price floor was imposed as an important safety feature of the ETS, to ensure that the risk of sharp reductions of the carbon price did not undermine long-term investment in clean technologies.⁹⁹ However, the current market price of EU ETS allowances is substantially lower than \$15, having fallen to less than €3 in April 2013.¹⁰⁰

Although the price of EU ETS allowances has been used to question whether Australia's carbon price is too high,¹⁰¹ it is important to remember that the EU ETS creates a carbon price for participants in European circumstances. Where the price of EU ETS allowances is however used as the 'price floor' of the Australian scheme, this will allow Australian entities to reduce the cost of complying with their obligations under the *Clean Energy Act*. In this respect, the lower price of EU ETS allowances is likely to encourage Australian entities to use EU ETS allowances to the maximum permitted level to satisfy their obligations under the *Clean Energy Act* (50 per cent). This may have adversely affected the reduction of GHG emissions from Australian sources.

⁹⁶ Gerard Kelly, 'An Evaluation of the European Union's Emissions Trading Scheme in Practice' (2006) 15 *European Environmental Law Review* 175, 184. For discussion of the likely success of linking scheme to the EU ETS see T Gibbs T and S Retallack, *Trading Up: Reforming the European Union's Emissions Trading Scheme* (Institute for Public Policy Research, 2006).

⁹⁷ William Blyth and Martina Bosi, *Linking Non EU Domestic Emissions Trading Scheme with the EU Emissions Trading Scheme* (2004) 6, 31; Wolfgang Sterk, et al, 'Ready to Link Up? Implications of Design Differences for Linking Domestic Emissions Trading Schemes' (Working Paper I/06, July 2006) 13.

⁹⁸ Frank Jotzo and Regina Betz, 'Australia's Emissions Trading Scheme: Opportunities and Obstacles for Linking' (2009) 9 *Climate Policy* 402, 408.

⁹⁹ Australian Government, above n 31, 27.

¹⁰⁰ Nick Perry, 'Coalition Warns of Carbon Black Hole' *Sydney Morning Herald* (online) 17 April 2013 <<http://news.smh.com.au/breaking-news-national/coalition-warns-of-carbon-black-hole-20130417-2hzl2.html>>.

¹⁰¹ For example, Adam Morton, 'The Price is Right? Is Australia's Carbon Price too High Compared with Other Major Countries, or it Will it be all Right in the End?' (Focus, The Age Newspaper, 17 May 2012) 15.

E Concessions for Vulnerable Sectors and Activities

The design and availability of concessions is a fundamental design feature of an ETS. However, concessions and exemptions that operate to allow entities to continue to emit GHG emissions covered by the scheme are likely to undermine its effectiveness to encourage the reduction of GHG emissions. These special rules can also increase the complexity of an ETS overall. Both of these contradict the third principle identified by Garnaut to design an ETS to encourage GHG emissions reductions.

The *Clean Energy Act* includes concessions for industries that are emissions intensive and trade exposed (EITE) and for entities that operate coal-fired electricity generator facilities (CFEG). Australia's 'Jobs and Competitiveness Program' (JCP)¹⁰² favours EITE entities that emit GHGs from carrying out certain emission-intensive activities. Under Part VII of the *Clean Energy Act*, entities that carry out eligible activities may be issued with carbon units free of charge.¹⁰³ The number of carbon units issued under the EITE concession is calculated according to an activity-specific allocative baseline multiplied by an assistance factor that depends on whether the EITE activity is 'moderately' (assistance rate of 66 per cent) or 'highly' (assistance rate of 94.5 per cent) emissions intensive.¹⁰⁴ Assistance levels will decrease annually by 1.3 per cent.¹⁰⁵

A fixed number of carbon units may also be issued freely to eligible CFEG entities between 1 September 2013 and 30 June 2017.¹⁰⁶ Units are issued to eligible CFEG entities according to a unique 'annual assistance factor' determined by the Clean Energy Regulator. In order to obtain units under the CFEG concession, entities must also submit a 'Clean Energy Investment Plan'.¹⁰⁷ CFEG concessions also include a specific 'Contracts for Closure' program,¹⁰⁸ under which the Government intended to negotiate the closure of 2000 megawatts of emission-intensive coal-fired electricity generation assets by 2020.¹⁰⁹ However, despite the potential for this program to encourage the retirement of Australia's most polluting electricity generation assets, the Australian Government has abandoned negotiations with electricity generators, because it believed that value for money could not be achieved in light of program objectives.¹¹⁰

The EU ETS also contemplates assistance for sectors vulnerable to carbon leakage and for electricity generators. Pursuant to articles 10a and 10b of *Directive 2003/87/EC*, entities in sectors that have an international trade intensity of more than ten per cent are likely to be eligible for EITE assistance.¹¹¹ Assistance is afforded at a flat rate of 80 per cent¹¹² of an

¹⁰² *Clean Energy Act 2011* (Cth) pt 7.

¹⁰³ *Clean Energy Act 2011* (Cth) s145; *Clean Energy Regulations 2011* (Cth) sch 1;

¹⁰⁴ *Clean Energy Amendment Regulation 2012* (No 1) Select Instrument 2012 No 12 (22 Feb 2012), r 907.

¹⁰⁵ *Ibid.*

¹⁰⁶ *Clean Energy Act 2011* (Cth) s160.

¹⁰⁷ *Ibid* s 177.

¹⁰⁸ *Ibid* pt8, div 6.

¹⁰⁹ See Explanatory Memorandum, *Clean Energy Bill 2011* (Cth) [6.169] – [6.181]. As a result of expression of interest processes in 2011-12, five generators were identified by the Government for this program, see Australian Government, 'Contracts for closure negotiations extended' (Media Release, 29 June 2012).

¹¹⁰ Minister for Resource and Energy, 'Contracts for closure negotiations cease' (Media Release, 5 September 2012) <<http://minister.ret.gov.au/mediacentre/mediareleases/pages/cfc-cease.aspx>>.

¹¹¹ *Directive 2003/87/EC*, above n 10, art 10a as inserted by *Directive 2009/29/EC*.

installation's emissions liability, although this assistance level will decrease annually to 30 per cent by 2020 and nil by 2027.¹¹³ The European Commission also has the discretion to provide assistance to electricity generators until 2020 in accordance with Article 10c of *Directive 2003/87/EC*. However, the number of free allowances available to entities under this concession is progressively decreases - at the commencement of Phase III, the rate of assistance provided by member States must not exceed 70 per cent, and should decrease until assistance is withdrawn in 2020.¹¹⁴

1 *A Literal Comparison of Legislative Provisions*

Compared literally, the *Clean Energy Act* and EU ETS both include a range of concessions for EITE entities and entities involved in electricity generation. However, each ETS has been designed to suit characteristics of vulnerable entities and scheme timelines according to local characteristics. For the purpose of functional comparison, the now-defunct 'Contracts for Closure' program of the *Clean Energy Act* appears incomparable because no equivalent program is contained in the EU ETS. Tiered assistance levels under Australia's JCP are also unique. Whether the design of concessions in the *Clean Energy Act* undermines the effectiveness of the ETS to encourage GHG emissions reductions requires more detailed consideration of the underlying reasons for designing cap provisions in this manner.

2 *Implementation of Law in Practice – Influence of National Circumstances*

The design of *Clean Energy Act* concessions have been influenced by local circumstances. Australia's JCP concession is intended to curb the risk of carbon leakage and ensure that domestic exports are not competitively disadvantaged against products from States that do not have the same level of carbon pricing. For example, this would be important for Australia's substantial export of coal for both metallurgical and thermal purposes to Asia.¹¹⁵ However, CFEG concessions are designed primarily to support Australia's energy security,¹¹⁶ in light of Australia's fossil-fuel dominated energy mix, as existing generators transition towards a low-carbon economy. Nevertheless, generators have also sought concessions for the expected loss of business or asset value caused by the creation of a carbon price, even though commentators have been critical of 'compensation' provided on this basis.¹¹⁷

In Europe, concessions to address carbon leakage and support energy security were recently incorporated into the EU ETS as temporary measures to offset expected increases to the price of EU ETS allowances towards 2020.¹¹⁸ Against these expected prices, commentators suggested that for electricity generators at least, these concessions were necessary to 'buy

¹¹² *Directive 2003/87/EC*, above n 10, art 10a(11) as inserted by *Directive 2009/29/EC*.

¹¹³ *Ibid.*

¹¹⁴ *Directive 2003/87/EC*, above n 10, art 10c(2) as inserted by *Directive 2009/29/EC*.

¹¹⁵ Department of Resources, Energy and Tourism and Bureau of Resources and Energy Economics, above n 38, 61.

¹¹⁶ *Clean Energy Act 2011*, s 159; As implied in submissions by coal fired electricity generators, for example see Loy Yang Power, Submission to the Senate Select Committee on the Scrutiny of New Taxes *The Carbon Tax Inquiry* 15 September 2011.

¹¹⁷ Frank Jotzo, 'Commentary: Australia's Carbon Price' (2012) 2 *Nature Climate Change* 475, 476.

¹¹⁸ Inserted by *Directive 2009/29/EC*, see also reference in Sander de Bruyn, Dagmar Nelissen, Marnix Koopman, 'Carbon Leakage and the Future of the EU ETS Market' (CE Delft, April 2013) 12.

industry acceptance'¹¹⁹ of a higher carbon price. However, continuing economic instability in the region may cause EU ETS allowance prices to stay well below the price expected and prompt revision of these concessions as part of ensuring the EU ETS remains effective as a mechanism to encourage the reduction of GHG emissions.¹²⁰

F *Use of Revenue*

Although the use of revenue is not specifically identified in the principles stated by Garnaut for designing an ETS to encourage GHG emissions reductions, revenue generated by an ETS can be used to strengthen the effectiveness of the ETS as a whole. In economic terms, whilst the primary 'dividend' of the ETS is to encourage the reduction of GHG emissions, revenue generated by the scheme is a 'secondary dividend' that can be used for other purposes.¹²¹

The EU ETS generally requires that revenue from the sale of allowances is used to 'tackle climate change in the European Union and third countries'.¹²² More specifically, the EU ETS requires at least 50 per cent of revenue to be used to reduce GHG emissions, develop renewable energy or energy efficiency to meet European Union targets,¹²³ avoid deforestation, enhance sequestration or storage of GHG emissions, encourage transition to low-carbon transport, finance research and development projects or cover the cost of scheme administration.¹²⁴

In Australia however, the use of revenue generated from the sale of units is not limited to purposes that complement the reduction of GHG emissions,¹²⁵ and the *Clean Energy Act* does not contain any provisions that restricts how scheme revenue can be used.

1 *A Literal Comparison of Legislative Provisions*

Only the EU ETS contains express provisions about the use of revenue generated by the EU ETS, making comparison with the functionally equivalent provisions of the *Clean Energy Act* impossible. Nevertheless, in comparison to statements made about the use of revenue in the Clean Energy Policy and the preparatory documentation to other complementary legislation introduced under that policy, it is clear that different approaches are taken to the use of scheme revenue.

2 *Implementation of Law in Practice – Influence of National Circumstances*

¹¹⁹ Christian Egenhofer, 'The Making of the EU Emissions Trading Scheme: Status, Prospects and Implications for Business (2007) 25 *European Management Journal* 453, 454.

¹²⁰ de Bruyn, Nelissen, and Koopman, above n 119.

¹²¹ David Pearce, 'The Role of Carbon Taxes in Adjusting to Global Warming' (1991) 101 *The Economic Journal* 938, 947. See also Hatfield-Dodds, 'Assessing the Effects of Using a Share of Carbon Price Revenues for Targeted Tax Reform: A Report to the Garnaut Review 2011' (CSIRO, May 2011) which suggests that using carbon pricing revenue to reduce other taxes may reduce the economic impacts of reducing Australia's domestic GHG emissions.

¹²² *Directive 2003/87/EC*, above n 10, 3d(4).

¹²³ Commission of the European Communities *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – 20 20 by 2020: Europe's Climate Change Opportunity* COM (2008) 30.

¹²⁴ *Directive 2003/87/EC*, above n 10, art 10(3).

¹²⁵ Although earlier proposals for an ETS in Australia recommended the use of ETS revenue for complementary purposes – Australian Government, above n 15, 118.

The number of complementary policies and measures in the European Union, that are each in need of funding, provides some explanation of why EU ETS revenue has been earmarked. For example, some classes of earmarked revenue are specifically relevant to complementary policies on energy (renewable energy and energy efficiency)¹²⁶ and transport (low-carbon transport)¹²⁷ which complement GHG emissions mitigation objectives of the EU ETS.

In Australia, the failure to earmark funds for environmental purposes can also be explained by the infancy of the scheme and the overwhelming need to provide a source of funds for concessions and other assistance measures promised as part of the wider Clean Energy Policy.¹²⁸ Forward estimates attached to the Clean Energy Policy indicate that the JCP, assistance to businesses and individuals through income tax laws and administrative costs will demand more revenue than will be delivered by the sale of units alone.¹²⁹ This is before any funding is provided to complementary measures to improve energy efficiency, expand renewable energy or enhance GHG emissions mitigation.

IV RESULTS FROM THE FUNCTIONAL COMPARISON

In Part III of this article, key design features of the *Clean Energy Act* were identified in light of principles used to design an ETS to encourage the reduction of GHG emissions and compared to functionally equivalent provisions of the EU ETS. Functional comparison has been made by not only undertaking a literal study of similarity and difference of scheme provisions, but by considering factors that might influence the design of those provisions in each home jurisdiction. As a result of comparing the ETS component of the *Clean Energy Act* and EU ETS in both of these ways, it is clear that many model features of an ETS designed to encourage the reduction of GHG emissions have been manipulated to account for Australian circumstances, with potentially adverse consequences.

Compared to the EU ETS, the objectives of the *Clean Energy Act* contain a number of qualifications that have been included on the basis of political and public responses to the carbon pricing in Australia. However, by including these qualifications, the objectives of the *Clean Energy Act* already detract from the theoretical objective of an Australian ETS, which is to reduce Australia's GHG emissions in accordance with domestic and international obligations. Although the fuel mix in the European Union suggests that the EU ETS has a 'smaller' task to reduce GHG emissions from the sector that makes the largest contribution to regional GHG emissions, different fuel mixes in their own right, cannot be sufficient grounds alone to justify the different approaches taken in each jurisdiction to GHG emissions mitigation by the *Clean Energy Act* and the in the EU ETS. In this regard, the way that GHG emissions mitigation objectives have been framed in the *Clean Energy Act*, in comparison to the EU ETS, undermines the effectiveness of the scheme to encourage the reduction of

¹²⁶ Renewable energy and energy efficiency targets, see Commission of the European Communities, *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – 20 20 by 2020: Europe's Climate Change Opportunity* COM (2008) 30; *Directive 2009/28/EC of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC* [2009] OJ L14/16.

¹²⁷ Commission of the European Communities, *The Future Development of the Common Transport Policy: A Global Approach to the Construction of a Community Framework for Sustainable Mobility* COM (92) 494.

¹²⁸ See details of the household assistance package – *Clean Energy (Household Assistance) Act 2011* (Cth); *Clean Energy (Consequential Amendments) Act 2011* (Cth). See also Australian Government, above n 31.

¹²⁹ Australian Government, above n 31, appendix C (table 1).

Australia's domestic GHG emissions. This does not mean Australia should forgo these objectives in its transition to a low-carbon economy, but that its 'primary' carbon pricing instrument may not be the most suitable forum in which to address all of these issues.

Qualifications could be removed from the objectives of the *Clean Energy Act* by giving the Australian scheme limited but focused coverage of GHG emissions in particular economic sectors. Comparison of the *Clean Energy Act* and the EU ETS highlight that the coverage of both schemes is limited in some way, particularly to exclude GHG emissions arising from transport and agriculture. Such limited scheme coverage does not undermine the effectiveness of the *Clean Energy Act's* ETS to reduce GHG emissions in sectors actually covered by the scheme. However, in comparison to Europe, this restricted scope may be less justifiable because alternative pricing and regulatory measures are yet to be developed in Australia to address GHG emissions in excluded sectors. Whilst complementary measures are being developed in Australia for some of the GHG emissions excluded from the *Clean Energy Act*, most are yet to commence operation.¹³⁰ Accordingly, until complementary pricing and regulatory mechanisms are implemented in economic sectors that make substantial contributions to Australia's GHG emissions (e.g. Australia's transport sector) limiting the scope of the *Clean Energy Act* is likely to undermine its effectiveness to reduce GHG emissions from all Australian sources.

Even in covered sectors however, the design of Australia's pollution cap to account for changing national circumstances could render it vulnerable to political and economic influence, and cause the effectiveness of the *Clean Energy Act* to encourage reduction of GHG emissions in those sectors to be undermined. Changes to the EU ETS have sought to avoid such influence by using a linear reduction trajectory. Despite these differences being justifiable, this does not mean these approaches contribute equally to the effectiveness of each ETS to encourage the reduction of GHG emissions. Although the inclusion of a linear reduction trajectory could improve the design of the *Clean Energy Act* to withstand influence from political pressure, this may not completely resolve the need for political intervention from time to time. Accordingly, whilst the design of Australia's pollution cap has the potential to undermine the effectiveness of the ETS created by the *Clean Energy Act* to encourage the reduction of GHG emissions, careful monitoring of sources of influence and the use of appropriate accountability procedures could reduce the chances of this occurring.

Linking the *Clean Energy Act's* ETS to the EU ETS, and allowing Australian units and European allowances to be recognised in each scheme gives rise to different sources of influence. A key problem highlighted in this article is the emerging difference of permit prices in each respective market. In this case, it is perhaps more accurate to say that it is the absence of the price floor safeguard as part of the linking process that has the potential to undermine the effectiveness of the *Clean Energy Act*, rather than the design of any particular provision relevant to scheme linking. Furthermore, whilst scheme linking might not undermine the effectiveness of an ETS to contribute to the reduction of global GHG

¹³⁰ For example, the 'equivalent carbon price' created by the *Clean Energy (Fuel Tax Legislation Amendment) Act 2011* (Cth) has limited coverage within the fuel tax credit regime. Despite releasing a discussion paper on emissions standards for light vehicles, a binding regime is yet to supersede voluntary industry standards, see Department of Infrastructure and Transport, 'Light vehicle CO₂ Emissions Standards for Australia: Key Issues – Discussion Paper 2011' <http://www.infrastructure.gov.au/roads/environment/co2_emissions/files/Light_Vehicle_CO2_Standards_Discussion_Paper.pdf>, cf the national average carbon emission standards (known as NACE standards) overseen by the Federal Chamber of Automotive Industry.

emissions, this is not the case from a domestic perspective. Where the price of European allowances remains substantially below the price of Australian units, the absence of a price floor has the capacity to undermine the effectiveness of the *Clean Energy Act's* ETS to encourage the reduction of GHG emissions from Australian sources.

The reduction of GHG emissions from key sources, such as emissions-intensive activities and coal fired electricity generation facilities can be further undermined by the design of concessional provisions in the *Clean Energy Act*. In particular, the CFEG concession might strengthen the effectiveness of the *Clean Energy Act* during the initial years of operation by ensuring participation of these CFEG entities, these special rules could undermine the long-term effectiveness of an ETS. This is because the CFEG is likely to support operations that would otherwise be unsustainable under a carbon price, particularly if those concessions do not require these entities to change business practices or processes to adjust to a carbon price in the time concessional treatment is provided. Arguably, the CFEG concession does not include appropriate limitations in this regard. For example, it is a condition of the CFEG concession that entities submit an annual 'Clean Energy Investment Plan.' Whilst a similar limitation is found in the EU ETS, the EU ETS also enables concessional treatment to be discontinued based on the content of, or adherence to, that plan.¹³¹ This requirement provides an important check-and-balance to ensure that recipients are actively reducing GHG emissions associated with their activities or are otherwise contributing to the transition of a particular member State to low-carbon electricity. No such provision is included in the *Clean Energy Act*. Accordingly, whilst CFEG entities will have full liability for the carbon price from 1 July 2017, the failure of the CFEG concession to require eligible entities to reduce GHG emissions or make changes to their business practices during the transitional period, could undermine the effectiveness of the ETS in the long-term.

Funding these concessions on a long-term basis from the revenue generated by the sale of units under the *Clean Energy Act* may also be counterproductive. Arguably, using revenue raised from the sale of units under the *Clean Energy Act* for this purpose could be perceived as supporting the emission of GHGs, by indirectly offsetting the cost of emissions-intensive activities for certain businesses. Accordingly, these concessions could have the unintended effect of propping up businesses whose practices would otherwise be unsustainable in a low-carbon economy¹³² so that they can continue to operate. Accordingly, whilst transitional funding may be needed in the initial years of carbon pricing, continued use of scheme revenue for this purpose could undermine the effectiveness of the *Clean Energy Act* to encourage the reduction of Australian GHG emissions in the long term.

V CONCLUSION

This article has illustrated that Australia and the European Union have each implemented an ETS to create a carbon price based on very different starting points. Whilst the EU ETS has operated since 2005, the Australian ETS does not formally commence trading until 2015. Although Australia has based many design elements of the *Clean Energy Act's* ETS on the design of functionally equivalent provisions of the EU ETS, it is clear that the design of each has been greatly influenced by unique domestic circumstances.

¹³¹ *Directive 2003/87/EC*, above n 10, art 10(c)(6) as inserted by *Directive 2009/29/EC*.

¹³² For example refer Steffen Hentrich, Patrick Matschoss and Peter Michaelis, 'Emissions Trading and Competitiveness: Lessons from Germany' (2009) 9 *Climate Policy* 316, 325-326.

Despite justification on these grounds, when compared to functionally equivalent provisions in the EU ETS, it is clear that certain provisions of the *Clean Energy Act* could easily undermine the effectiveness of the ETS that it creates to encourage the reduction of GHG emissions in Australia. In this regard, although it is the global emission of GHGs that contributes to climate change, it is important to distinguish the role of the *Clean Energy Act* in the international sphere, from the GHG emissions reductions that it is also intends to encourage at a domestic level. The objectives of the *Clean Energy Act* clearly refer to the reduction of domestic GHG emissions, in addition to any contribution that these reductions make to global mitigation efforts.

Australia should not be expected to ‘reinvent the wheel’ in designing an instrument capable of creating a domestic carbon price to encourage the reduction of GHG emissions. Nevertheless, in designing the ETS component of the *Clean Energy Act* Australia may have overlooked the perils of ‘legal borrowing’,¹³³ because it was presumed that the design of the operative EU ETS would also perform adequately in Australia in its borrowed form.¹³⁴ Accordingly, although it is appropriate for Australia to closely examine the EU ETS as one way that an ETS can be used to encourage the mitigation of GHG emissions, Australia should not automatically implement a similar scheme before evaluating whether underlying domestic circumstances can be resolved, or whether other GHG emissions mitigation measures should be implemented before an ETS can effectively encourage the mitigation of GHG emissions in Australia.¹³⁵ Without this, the design of the ETS component of the *Clean Energy Act* may actually undermine the effectiveness of the instrument that it seeks to implement, to encourage the reduction of domestic GHG emissions.

The wording of *Clean Energy Act* objectives suggests that GHG emissions mitigation is an important, but not the primary focus of the scheme as a whole. In this case, it must be questioned why Australia has drawn on key design features used in the EU ETS as a basis for the ETS component of its carbon pricing instrument, when the objectives of the European scheme have greater emphasis on environmental outcomes. Using the ETS created by the *Clean Energy Act* to satisfy the range of objectives may be difficult, and there is a risk that one or more of these objectives may not be met. In light of the way Australia’s ETS has been manipulated to account for national circumstances it is more than likely that it will be the GHG emissions mitigation objectives that are undermined.

¹³³ Sanja Bogojevic, ‘Ending the Honeymoon: Deconstructing Emissions Trading Discourses’ (2009)21 *Journal of Environmental Law* 443, 459.

¹³⁴ Lisa Heinzerling, ‘The Environment’ in Peter Cane and Mark Tushnet (eds), *The Oxford Handbook of Legal Studies* (Oxford University Press, Oxford 2005) 701, 712-3.

¹³⁵ Scott Segal, ‘Be Cool! Staying Open Minded About Climate Policy Development’ (2008) 18 *Duke Environmental Law & Policy Forum* 307, 323.