

Articles

A NARRATIVE OF JUSTICE¹

SVEN RUDOLPH, ELENA AYDOS, ACHIM LERCH²

ABSTRACT

Justice plays an increasingly important role in sustainable development and in climate policy. In order to achieve the 2°C target, mitigation efforts have to be stepped up, while at the same time the implementation is supposed to ‘reflect equity’. Carbon markets are still the most promising way to do so at minimum cost. In addition, they are explicitly envisaged in the Paris Agreement, and they have spread across the globe and all governance levels. In Australia, however, the former Carbon Pricing Mechanism was repealed by the Abbott Government in 2014, claiming it to be unfair in many senses. But did this claim really stick to the facts or was it an early case of post-truth politics? Can carbon markets ever be made just? To answer these questions, first, we review normative justice theory and derive justice criteria for carbon market design. Second, we evaluate former and current carbon pricing schemes in Australia based on these criteria. We argue that justice can be fostered by well-designed carbon markets and that early Australian schemes, including the Carbon Pollution Reduction Scheme (CPRS) and the Carbon Pricing Mechanism (CPM), were fairer than the Emission Reduction Fund (ERF) and the Safeguard Mechanism (SM).

I. INTRODUCTION

Halls of justice painted green, money talking, ... justice is lost, justice is raped, justice is gone, ... seeking no truth, winning is all, find it so grim, so true, so real, is what the San Francisco based heavy metal band Metallica bemoaned in their 1988 song ‘... And Justice For All.’ For carbon markets, some observers pose the same accusation, though admittedly in a more

¹ Discussion paper presented at the Narratives of Climate Change Symposium, July 5-6, 2018, University of Newcastle, Australia.

² Dr. Sven Rudolph, Associate Professor, Hakubi Center and Graduate School of Global Environmental Studies, Kyoto University, Japan, rudolph@econ.kyoto-u.ac.jp; Dr. Elena Aydos, Senior Lecturer, University of Newcastle Law School, Australia, elena.aydos@newcastle.edu.au; Prof. Dr. Achim Lerch, FOM Hochschule für Oekonomie und Management, Kassel, Germany, achim.lerch@fom.de.

scientific phrasing: carbon markets are said to be ‘the selling of indulgences, ... a money printing machine for utilities, ... not capable of capping the bottle that released the CO₂-Genie, [and] ... not in line with principles of social justice in a globalized world.’³ But is this really true? Or can a well-designed carbon market foster justice; despite of former Prime Minister Tony Abbott calling the Australian Carbon Pricing Mechanism (CPM) a ‘useless, destructive tax’ that would ‘clobber the economy’?⁴

Without doubt, anthropogenic climate change or global warming is one of the major threats to humankind with yet inconceivable consequences for human livelihood, ecosystems, and even the face of our planet.⁵ Hans Joachim Schellenhuber, former head of the renowned German Potsdam Institute for Climate Impact Research and the German Advisory Council on Global Change, once compared the climate crisis with that of a sinking ship:

Certainly, there are other problems than the loss of the cruise ship: Food in the third class is bad, sailors are underpaid, the band plays horrible stuff. But if the ship sinks, all this becomes irrelevant. If we cannot stop climate change, if we cannot keep the ship afloat, we do not need to worry about income disparities, racism, or bad tastes anymore.⁶

The latest political response to climate change on the global level, the Paris Agreement, can certainly be considered a diplomatic success. By the end of September 2018, the Agreement had been signed by 197 countries and ratified by 180 countries. The major goal is ‘[h]olding the increase in the global average temperature to well below 2°C.’⁷ However, current national climate policy proposals, the (Intended) Nationally Determined Contributions ((I)NDCs), fall significantly short of that goal and will still lead to a global average temperature increase of around 3°C.⁸ While the Agreement already obliges signatory states to improve their NDC every

³ Elmar Altvater and Achim Brunnengräber (eds), *Ablasshandel gegen klimawandel? Markbasierte instrumente in der globalen klimapolitik und ihre alternativen*, tr Elmar Altvater and Achim Brunnengräber (VSA 2008) 9.

⁴ Julia Baird, ‘A Carbon Tax’s Ignoble End’, *The New York Times* (online, 20 September 2019) <<https://www.nytimes.com/2014/07/25/opinion/julia-baird-why-tony-abbott-axed-australias-carbon-tax.html>>.

⁵ Intergovernmental Panel on Climate Change, *Climate Change 2014: Summary for Policy Makers* (Synthesis Report, 2015).

⁶ Alex Rühle, ‘Gleicht einem kollektiven Suizid’, *Süddeutsche Zeitung* (online, at 20 September 2019) <<https://www.sueddeutsche.de/kultur/klimawandel-gleicht-einem-kollektiven-suizidversuch-1.3978878?reduced=true>>.

⁷ *Paris Agreement under the United Nations Framework Convention on Climate Change (Paris Agreement)*, opened for signature 26 April 2016, UNTS I-54113 (entered into force 04 November 2016).

⁸ *Aggregate Effect of the Intended Nationally Determined Contributions* (Synthesis Report, 2 May 2016).

five years, these NDCs not only need more stringent goals, but they also need to be underpinned by ambitious policy instruments.

As one flexibility option, the Paris Agreement explicitly allows the use of ‘internationally transferred mitigation outcomes’ (ITMO), or, in economic terms, the trading of emission rights. This emissions trading or more correctly cap-and-trade has almost unanimously been supported by economists on the grounds of environmental effectiveness and economic efficiency,⁹ or, as the founding father of the idea of tradable emission rights, John H. Dales, once put it: ‘If it is feasible to establish a market to implement a policy, no policy-maker can afford to do without one.’¹⁰

In climate policy, this means that cap-and-trade schemes are capable of contributing to accurately achieving domestic greenhouse gas (GHG) emission reductions target under the Paris Agreement and of lowering social costs of target achievements.¹¹ In one of the first applications, i.e. US air pollution policy in the 1990s, it achieved the intended emission reductions at costs about 50% lower than with a traditional command-and-control type of environmental standards.¹² And despite early problems with the first large-scale climate policy cap-and-trade scheme, the EU Emissions Trading Scheme (EU ETS), ex-ante studies calculated costs to be 30-50% lower than in a command-and-control scenario.¹³

These positive predictions seem to have led to a global spreading of this policy instrument across many continents and all governance levels.¹⁴ Many of these programs, including the EU ETS, the California Cap-and-Trade Program and the Regional Greenhouse Gas initiative (RGGI), have experienced major revisions with forms throughout their lifetime with considerable improvements such as emission coverage extensions to up to 85% (California) or cap reductions to below 50% of base year emissions (RGGI). This type of domestic carbon market becomes even more attractive as a policy option when domestic markets are linked

⁹ Alfred Endres, *Environmental Economics*, tr Ian Fraser (Cambridge University Press, 2011).

¹⁰ John Dales, *Pollution, Property & Prices* (University of Toronto Press, 1968) 100.

¹¹ *Paris Agreement* (n 7) art 3.

¹² Denny Ellerman et al., *Markets For Clean Air: The US Acid Rain Program* (Cambridge University Press, 2000).

¹³ DIW Berlin, Ecofys and Öko-Institut, *Auswirkungen des europäischen -Emissionshandels-systems auf die deutsche industrie* (Report, September 2003)

<https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Emissionshandel/emissionshandel_endbericht.pdf>.

¹⁴ International Carbon Action Partnership, *Emissions Trading Worldwide* (Status Report, 2018).

across jurisdictions, which can significantly improve the environmental effectiveness and the economic efficiency of international climate policy.¹⁵

Besides environmental effectiveness and economic efficiency, attributes usually studied in environmental economics, justice plays a key role in sustainable climate policy. Justice, particularly intra- and intergenerational justice, was a founding principle of ‘sustainable development’.¹⁶

Empirical research has shown that people in various countries appreciate justice in climate policy and prefer an equitable approach to alternative options.¹⁷ Some authors claim that justice is ‘the key enabler of ambition.’¹⁸ And the Paris Agreement itself urges parties to the Agreement to ‘reflect equity.’¹⁹ Current energy transformation processes, which intend to achieve climate goals and at the same time phase-out nuclear energy, however, have raised serious doubts about fair burden-sharing in the respective policy mix.²⁰

Hence, we ask: Is it theoretically possible to design a carbon market that fulfils ambitious justice criteria? If so, how would it look like? And, in how far have past and current carbon pricing schemes in Australia complied with justice policy design criteria?

After this short introduction (I), we answer these questions by, first, reviewing normative concepts of justice and by applying them to climate policy and carbon market design (II). We then take a close look at Australian carbon pricing schemes past and present, the Carbon Pollution Reduction Scheme (CPRS), the Carbon Pricing Mechanism (CPM), and the Emission Reduction Fund combined with the Safeguard Mechanism (ERF/SM), respectively, and evaluate their design based on the justice criteria (III). The article will close with an overview of the results and policy recommendations for a possible future carbon market in Australia (IV).

¹⁵ Sven Rudolph, Takeshi Kawakatsu and Achim Lerch, ‘Developing The North American Carbon Market: Prospects For Sustainable Linking’ in Stefan Weishaar et al. (eds), *The Green Market Transition: Carbon Taxes, Energy Subsidies and Smart Instrument Mixes* (Edward Elgar Publishing, 2017) 209.

¹⁶ Volker Hauff (ed), *Our Common Future* (Oxford University Press, 1987).

¹⁷ Joachim Schleich et al., ‘Citizens’ Perceptions of Justice in International Climate Policy: An empirical Analysis’ (2016) 16(1) *Climate Policy* 50.

¹⁸ Sonja Klinsky and Harald Winkler, ‘Equity, Sustainable Development and Climate Policy’ (2014) *Climate Policy* 14(1) 1.

¹⁹ *Paris Agreement* (n 7) art 3.

²⁰ Peter Heindl, Rudolf Schüßler and Andreas Löschel, ‘Ist die energiewende sozial gerecht?’ (2014) 94(7) *Zeitschrift für Wirtschaftspolitik* 508.

II. HOW CARBON MARKETS FOSTER JUSTICE

The concept of justice has been controversially debated for hundreds of years, but still opinions differ on whether, firstly, justice can be at all defined in abstract terms and, secondly, how it can be applied to climate policy issues. While some scholars still believe justice to be a concept of competing claims and case-by-case negotiations, indeed, as Ott and Döring argue, even competing claims can be logically discriminated against, and priorities can be defined on justice grounds without ethically discriminating against individuals.²¹ Global warming, in turn, represents one of mankind's most pressing challenges with immediate justice implications. Most of the discussion on justice in climate policy relates to the following three strands:

- Climate Justice with major focal points on (a) inter-generational justice between those who caused the problem in the past and present and those who suffer in the future, and (b) intra-generational international justice between those who caused the problem in the rich industrialized world and those who suffer in poor countries.²² These concepts follow immediately from the concept of Sustainable Development and its definition in the Brundtland Report.²³
- Social Justice with a focus on the unfair distribution of the costs of climate policy, most prominently from carbon pricing, in industrialized countries. The argument originates from the fact that energy price increases have regressive effects and burden low income households relatively more than rich households, which also immediately affects the political feasibility of any carbon pricing instrument.²⁴
- Environmental Justice with a focus on unevenly distributed co-pollution by coal-fired power plants or health risks of nuclear power plants.²⁵

In fact, climate change strongly influences the livelihood of current and future generations, of industrialized and developing countries, of the rich and the poor, and carbon markets even distribute implicit private property rights to the use of the commonly owned atmosphere. So far, however, justice implications of carbon markets have not been sufficiently discussed.

²¹ Konrad Ott and Ralf Döring, *Theorie und Praxis Starker Nachhaltigkeit* (Metropolis, 3rd ed, 2011).

²² Ravi Kanbur and Henry She (eds), *Climate Justice: Integrating Economics and Philosophy* (Oxford University Press, 2018).

²³ *Our Common Future* (n 16).

²⁴ Recently e.g. Ira Dorband et al., 'Poverty and Distributional Effects of Carbon Pricing in Low-and-Middle Income Countries: A Global Comparative Analysis' (2019) 115 *World Development* 246.

²⁵ Recently e.g. Spencer Banzhaf, Lala Ma, and Christopher Timmins, 'Environmental Justice: The Economics of Race, Place, and Pollution' (2019) 33(1) *Journal of Economic Perspectives* 185.

Hence, defining abstract criteria for considering justice in carbon market design seems feasible and highly desirable.

A Justice Concepts and Climate Policy

In this section, we will apply a more comprehensive set of social and climate justice criteria than those outlined above. However, we will exclude environmental justice criteria, as we consider co-pollution an issue that, first, following the Tinbergen Rule,²⁶ has to be tackled by its own policy, and, second, is not a problem unique to the application of a cap-and-trade scheme. Social and climate justice, in turn, are at the core of carbon market design. Still, we will not be able to provide a concluding, definitive definition of justice in the realm of carbon market design. However, we will discuss the main arguments of a temporary, practical definition of justice that adequately addresses climate change and carbon market design. Based on this preliminary definition, we will be able to systematically discuss the implications of differing justice concepts for carbon market design, instead of simply applying somewhat arbitrary ad hoc justice definitions.

In order to establish a comprehensive set of social and climate justice criteria to be considered in carbon market design, the following concepts apply:²⁷ First, the concepts of procedural justice and result-based distributional justice can be differentiated. Procedural justice implies that only procedures and rules of social processes can be just, while result-based justice refers to fair outcomes of social processes. Critics state that referring to the concept of result-based justice alone implies presumptuousness with respect to the availability and manageability of knowledge;²⁸ it would dictate an abstract distributional result independent of its genesis. However, using some notion of the concept of result-based distributional justice is indispensable already on theoretical grounds; in addition to that, economic psychology studies show that individuals base their economic decisions on result-based concepts of fairness rather than on procedures alone.²⁹

²⁶ The Tinbergen Rule basically states, that for each and every policy target there must be at least one policy tool. If there are fewer tools than targets, then some policy goals will not be achieved. Tinbergen, J. (1952). *On the theory of economic policy*. Amsterdam: North Holland.

²⁷ Ernst Helmstader, 'Über Die Gerechtigkeit Gerechter Regeln' in Matrin Held (ed), *Normative Grundfragen der Ökonomik* (Metropolis, 2003) 543; Angelika Krebs (ed), *Gleichheit Oder Gerechtigkeit* (Suhrkamp, 2000); Achim Lerch, *Individualismus, Ökonomik und Naturerhalt: Zu den Normativen Grundlagen der Ökologischen Ökonomik* (Metropolis, 2003).

²⁸ Friedrich A. von Hayek, *Die Anmaßung von Wissen* (Mohr, 1996); Robert Nozick, *Anarchy, State, and Utopia* (Basic Books, 2013).

²⁹ Daniel Kahneman, Jack L. Knetsch and Richard Thaler, 'Fairness as a Constraint on Profit Seeking: Entitlements in the Market' (1986) 76(4) *The American Economic Review* 728.

Within the concept of result-based distributional justice, justice in transfer and acquisition, justice within allocation, and redistributive justice can be distinguished.³⁰ Justice in transfer and acquisition demands that an effort is compensated by an equivalent service; a requirement inherently fulfilled by market transactions. Justice within allocation, in contrast, asks for a fair distribution of goods according to individual claims. Redistributive justice refers to a fair outcome of redistributive procedures subsequent to market allocations.

The necessary acceptance of the latter two concepts, however, raises the question on what the criteria for (re-)distribution should be. Welfare-based justice calls for a fair distribution to be based on individuals' needs, while desert-based justice requires it to be based on each individual's share of contribution in the production of a good.

Desert-based justice is thus faced with at least two serious problems: First, effort can be measured either in input or in output terms. Second, with respect to natural resources, even if their appropriation is legitimate due to the fact that it needs human labor in addition to nature's services, still, a relevant part of the result is provided by nature. A combination of desert-based and welfare-based justice – 'from each according to his ability, to each according to his needs' implicitly proposed by Marx,³¹ however, does not set proper economic incentives. Rawls,³² in turn, proposed a more promising combination of the two concepts, which will be discussed later.

Does a fair distribution necessarily imply an equal distribution? In the 'why equality' debate, egalitarianism is strongly challenged, and inviolable standards such as human dignity are proposed as alternatives.³³ However, while equality certainly cannot be considered the sole criterion for justice, and it anyway has to be accompanied by minimum standards, preferring equality to inequality seems theoretically adequate³⁴ and empirically justified.³⁵

³⁰ Ernst Helmstader, 'Über Die Gerechtigkeit Gerechter Regeln' in Matrin Held (ed), *Normative Grundfragen der Ökonomik* (Metropolis, 2003) 543.

³¹ Karl Marx, 'Kritik des Gothaer Programms' in Karl Marx and Friedrich Engels (eds), *Werke Vol. 19* (Dietz, 1972).

³² John Rawls, *A Theory of Justice: Revised Edition* (Harvard University Press, 2nd ed, 1999).

³³ Angelika Krebs (ed), *Gleichheit Oder Gerechtigkeit* (Suhrkamp, 2000).

³⁴ Ott and Döring (n 21).

³⁵ Schleich et al. (n 17).

Even if equality is accepted, the ‘equality of what’ question arises.³⁶ Reference points proposed in the literature include preferences and talents not under individual control,³⁷ basic rights,³⁸ or income.^{39,40} While a naïve notion of equality in terms of equal welfare for everybody is obviously inadequate, Rawls called for equality in terms of rights and freedom as well as chances and opportunities.⁴¹ Inequalities, however, can only be accepted for income and capital, if, and only if, they provide the highest benefit to the poorest – compared to a situation of equality, in which the poorest benefit less –, and, if offices and positions are equally open to everybody (difference principle).

Last, for sustainability, the Brundtland Report emphasized that the needs of both current and future generations should be taken into account.⁴² While intra-generational justice refers to the distribution within one current generation, e.g. on the national (rich vs. poor citizens) or international (industrialized vs. less developed countries) level, inter-generational justice accounts for distributional issues between present and future generations.

This variety of justice aspects certainly makes deriving concrete design recommendations for carbon markets quite a challenge. As questions on economically efficient and environmentally effective carbon markets have already been discussed in the environmental economics literature in detail, and justice is still widely ignored in this debate but indispensable in sustainable carbon market design,⁴³ we now apply the comprehensive set of justice criteria to carbon market design.⁴⁴

B Justice in Carbon Market Design

Result-based distributional justice calls for a close look at the actual carbon market design in practice. It is understandable that establishing a fair climate policy and carbon market

³⁶ Amartya Sen, ‘Equality of What?’ in Amartya Sen (ed), *The Standard of Living: The Tanner Lectures in Human Values* (Cambridge University Press, 1989) 197.

³⁷ Ibid.

³⁸ Robert Nozick, *Anarchy, State, and Utopia* (Basic Books, 2013) [pinpoint] (See P 98 AGLC4) OR Nozick (n 28).

³⁹ Herman E Daly, *Beyond Growth: The Economics of Sustainable Development* (Beacon Press, 2nd ed, 1997).

⁴⁰ Lerch (n 27).

⁴¹ Rawls (n 32).

⁴² Hauff (n 16).

⁴³ Sven Rudolph et al., ‘Towards Sustainable Carbon Markets: Requirements for Effective, Efficient, and Fair Emissions Trading Schemes’ in Larry Kreiser et al. (eds), *Carbon Pricing, Growth and the Environment* (Edward Elgar Publishing, 2012).

⁴⁴ Achim Lerch, ‘Co2-Emmissionshandel: Effizient Oder Gerecht?’ (2011) 48 *Zeitschrift für Sozialökonomie* 39; Hermann E Ott and Wolfgang Sachs, ‘The Ethics of International Emissions Trading’ in Luiz Pinguelli-Rosa and Mohan Manasighe (eds), *Ethics, Equity and International Negotiations on Climate Change* (Edward Elgar Publishing, 2002) 159.

negotiation procedure alone, e.g. under the United Nations or democratically elected national governments, is not sufficient. We have to thoroughly consider the program outcome, in this case the detailed carbon market design itself.

As proposed by its inventor John H. Dales,⁴⁵ a carbon market, or more precisely, a GHG cap-and-trade scheme does the following: It, first, fixes a total amount of allowed emissions for a jurisdiction and a certain time period according to the environmental goal (cap). Second, it distributes emission allowances to polluters and obliges them to cover each and every unit of emissions by the respective amount of allowances (distribute). Third, it allows polluters to transfer emission allowances amongst each other (trade).

In climate policy real-life, however, designing a carbon market is much more complex.⁴⁶ Table 1 column 1 below gives an overview of the major design elements of a carbon market in practice. By applying justice concepts to carbon market design, we are able to propose the following criteria for a just carbon market design.

1 Coverage

A just carbon market would cover all pollutants and make participation mandatory for all polluters, because only full coverage and compulsory participation would fulfill the equality, the intra- and inter-generational justice, and the polluter-pays-principle.⁴⁷ The polluter-pays principle reflects desert-based justice and allows for taking into account historic responsibilities for climate change.

If only selected GHG would be covered, first, emitters of covered gases would be disadvantaged compared to those emitting non-covered gases, which would both violate the intra-generational justice and the equality criterion. Second, this exemption would leave some pollutants unregulated, which might hurt future generations' rights. Excluding some GHG would only be justifiable if the reliability of monitoring is questionable or if monitoring costs are prohibitive. In addition, carbon dioxide equivalents (CO₂e) are an easy way to allow the inclusion of all GHG.

Exempting selected polluters would have the same detrimental effects on justice as excluding certain pollutants and the polluter-pays-principle would also be violated. Obligatory

⁴⁵ John Dales, 'Land, Water and Ownership' (1968) 1(4) *The Canadian Journal of Economics* 791.

⁴⁶ Samuel Fankhauser and Cameron Hepburn, 'Designing Carbon Markets, Part II: Carbon Markets in Space' (2010) 38(8) *Energy Policy* 4363; Stefan Weishaar, *Emissions Trading Design* (Edward Elgar Publishing, 2014).

⁴⁷ Rudolph et al. (n 43).

participation alone would guarantee compliance with reduction targets and the complete emission cost payment by all relevant polluters thus complying with inter-generational justice, the polluter-pays principle, and the equality criterion.

Covering all emitters and emissions could lead to special hardship for smaller or financially less potent emitters, which would create a trade-off between the polluter-pays-principle and justice within allocation. Compensation originating from auction revenues could fix that problem. We discuss this aspect in detail below.

2 Cap

Just carbon markets should have absolute volume caps in line with the well below 2°C Paris Agreement target, in order to comply with inter-generational justice. As global warming is determined by GHG concentrations in the atmosphere, absolute emission amounts matter. Hence, in order to prevent dangerous global warming and protect future generations from excessive burdens, absolute volume targets and caps are indispensable. Intensity targets (e.g. emissions per product or per unit GDP), in contrast, allow for absolute emission volume increases even at low emission rates, in the case that the total production output increases.

Concerning a number target, while an exact global climate policy goal is still difficult to justify, scientific evidence⁴⁸ and the political will at the Paris Agreement sufficiently supports the notion of a (well below) 2°C target being able to at least protect future generations from the worst consequences of global warming. As a consequence, industrialized countries would have to reduce their emissions by 25-40% by 2020 and by 80-95% by 2050.⁴⁹ The Budget Approach⁵⁰ calculates only 600 million tons of CO₂eq emissions to be acceptable between 2010 and 2050 in order to still achieve the 2°C target.

Equality arguments would then call for equal rights to the use of natural resources for each citizen of the world. If, as a supplement, the polluter-pays-principle would be applied, the historic responsibility for climate change would even call for further re-distribution in favor of the developing world.

Based on these ideas, theoretically, national carbon caps could be calculated and justified on a justice basis. However, as the distributional consequences of such an approach would be

⁴⁸ Intergovernmental Panel on Climate Change, *Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Contribution to Report, 2014).

⁴⁹ *Ibid.*

⁵⁰ German Advisory Council on Global Change, *Solving the Climate Dilemma: The Budget Approach* (Special Report, 2009).

sudden and dramatic, intra-generational justice calls for a more moderate transitional approach such as Contraction and Convergence.⁵¹ Over a specified period of time, the total number of emissions allowances would contract from the status quo to the target level and the distribution of emission rights would converge to equal per capita rights. It is important to keep in mind that even dramatic re-distributional burdens could also be alleviated by the well-targeted spending of carbon pricing revenues.

3 Allocation

The initial allocation of emissions allowances should be done by auctioning alone. Only then would the design comply with the polluter-pays-principle and result-based justice in transfer and acquisition as well as in allocation. Mutual compensation for efforts would be provided, the resulting distribution would be according to individual claims and polluters would have to pay resource use costs fully. In free allocation models, in turn, the scarcity rents introduced by the cap are transferred to polluters, who can make windfall profits if they can pass on costs to consumers.

4 Revenue Use

Where all allowances are sold, major parts of the scarcity rents remain with the government and can be used for multiple purposes. Therefore, in general, full auctioning combined with a well-designed re-distributional scheme addresses justice issues most adequately.

Depending on the exact design of revenue spending, it serves inter- and intra-generational justice as well as the equality criterion to a differing extent. First, they can be used for lowering distortionary taxes, create a double dividend, and increase overall efficiency,⁵² thus mainly serving national intra-generational justice. Second, investing revenues in additional climate mitigation measures would primarily promote inter-generational justice as future global warming burdens would be further reduced. Third, using revenues for adaptation measures or damage compensation in countries or regions that suffer most from climate change would especially foster international intra-generational justice. Fourth, compensating low-income for higher energy costs or even cushioning cost increases for selected industries in order to prevent carbon leakage would cater to national intra-generational justice. Fifth, the Sky Trust proposal⁵³ suggests reimbursing revenues to citizens on an equal per capita basis; this follows

⁵¹ Aubrey Meyer, *Contraction & Convergence: The Global Solution to Climate Change* (Green Books, 2000).

⁵² A Lans Bovenberg, 'Green Tax Reforms and the Double Dividend: An Updated Reader's Guide' (1999) 6(3) *International Tax and Public Finance* 421.

⁵³ Peter Barnes, *Who Owns the Sky?* (Island Press, 2001).

the principle of equal entitlements to natural resource use for all citizens and would also serve international intra-generational justice.

5 Flexibility Mechanisms

Both borrowing and banking reduce compliance costs and serve intra-generational justice. However, while banking (the saving of early reduction credits for later use) might foster inter-generational justice, borrowing (the present use of future reductions) may be in violation of this criterion. Borrowing allowances for compensating present emissions without reducing emission in the future increases GHG concentrations in the atmosphere and hurts future generations. Differently, banking could additionally profit future generations if banked allowances are not used in the future.

Offsets may serve justice. While bad offsets violate several justice criteria, high quality offsets may serve inter-generational as well as intra-generational justice as compliance cost reductions, money, and technology and know-how transfers are possible. Quantity limits to high quality offsets are dispensable for the same reasons and in addition the polluter-pays-principle fully applies anyway.

6 Price Management

Market design should guarantee easy and equal access for all emitters, at best use price floors but not price ceilings, and implement short compliance periods in order to comply with inter- and intra-generational justice, the polluter-pays-principle, and result-based justice in transfer and acquisition. Equal access to the market should be granted in order not to disadvantage specific groups or individuals and follow the equality principle.

Intervening into the market by increasing the amount of allowances when prices hits a certain level (safety valves) jeopardizes inter-generational justice where extra allowances are not ex ante included in the cap. It also violates the polluter-pays-principle and the result-based justice in transfer and acquisition. At first glance, price ceilings seem to protect present generations from excessive cost burdens and thus serve national intra-generational justice. Also, price floors can be seen to guarantee revenues usable for re-distributional measures even in the case of a lack of scarcity. Still, price corridors prevent the market from exhibiting the real scarcity

of the resource and from making the polluter fully pay, thus interfering with inter-generational justice, polluter-pays-principle, and the result-based justice in transfer and acquisition.

Using auction revenues for compensating excessive burdens and reducing the cap or internationally linking carbon markets would be preferable solutions. Compliance periods should be short, because this allows for short-term control over reduction achievements and provide opportunities for immediate penalties and ex-post emission compensation in the case of non-compliance. This would significantly foster inter-generational justice. Trading periods can be long, however, if supplemented by short-term submission requirement for major parts of used emissions rights.

7 Compliance

Reliable monitoring and quenching penalties are a necessary component of inter-generationally just carbon markets, which also make polluters fully pay, and comply with result-based justice in transfer and acquisition. In emission markets, authorities have to check whether emitters can compensate each and every unit of emissions by an emission allowance in its hold. Only this guarantees that emissions at one point are compensated for by emission reductions at another point, which, in turn, would lead to compliance with the overall cap.

Continuous emissions monitoring or verified self-reporting both seem to be sufficiently reliable. In the case of non-compliance, severe penalties, ex post, punish polluters for breaching the rules; ex ante, such penalties discourage emitters from non-compliance. Only this would safeguard future generations, make polluters fully pay, and comply with result-based justice in transfer and acquisition. In addition, those criteria call for ex post compensation of allowance shortages. Equality demands identical fine levels for all non-complying polluters.

8 Supporting Measures

Protective measures such as border (tax) adjustments are reasonable from an intra-generational international and inter-generational justice as well as from an equality perspective. Ambitious domestic carbon markets may suffer from leakage, if competitors do not use comparably stringent policies. Leakage can be prevented by either creating an ambitious common market of all major competitors or protecting ambitious climate policy countries by implementing border (tax) adjustments or making domestic carbon markets less stringent.

While the first alternative is obviously the most desirable – though politically the most difficult – from the perspective of e.g. equality, inter-generational justice, and the polluter-pays-principle, and the last is clearly unacceptable for the same reasons, border (tax) adjustment

levels the playing field for domestic emitters and thus caters to the equality criteria, international intra-generational justice, and inter-generational justice.

III. HOW AUSTRALIAN CARBON PRICING ANSWERED THE CALL FOR JUSTICE

In 2008, the Australian Labor government under Prime Minister Kevin Rudd proposed the introduction of an emissions trading scheme (ETS) known as the Carbon Pollution Reduction Scheme (CPRS).⁵⁴ A thorough policy development process was put in place, starting with a Green Paper on design issues in July.⁵⁵ This was followed by the release of a comprehensive independent report on the impacts of climate change on the Australian economy,⁵⁶ the Treasury modelling and a White Paper in December.⁵⁷

In 2009 and 2010, the Rudd government introduced three consecutive Bills in an attempt to implement the CPRS.⁵⁸ The Bills passed the House of Representatives but failed to pass through chambers. The Bills arguably would have passed through Senate, but in a historical political turn, six days before the Senate vote of the Carbon Pollution Reduction Scheme Bill (No. 2) 2009 (Cth), Tony Abbott won the opposition leadership replacing Malcolm Turnbull and opposed the bill.⁵⁹ Rather surprisingly, the Australian Greens voted with Abbott against the CPRS. After a third failed attempt in 2010,⁶⁰ Rudd deferred the CPRS legislation until the end of the first commitment period of the Kyoto Protocol in 2012. This decision to postpone the CPRS Bills eventually cost Rudd his position as Labor Party Leader and Prime Minister.⁶¹

In July 2011, Labor Prime Minister Julia Gillard proposed the introduction of a carbon market called the Carbon Pricing Mechanism (CPM).⁶² This time backed by the Greens, the legislative

⁵⁴ Carbon Pollution Reduction Scheme Bill 2009 (Cth) ('CPRS 09').

⁵⁵ Department of Climate Change, 'Carbon Pollution Reduction Scheme: Green paper' (2008) ('CPRS GP 08').

⁵⁶ Ross Garnaut, 'The Garnaut Climate Change Review': Final Report (Cambridge University Press, 2008) 101.

⁵⁷ Commonwealth of Australia, 'Australia's Low Pollution Future: The Economics of Climate Change Mitigation' (2008); Department of Climate Change, 'Climate Change Carbon Pollution Reduction Scheme: White paper (Vol 1, 2008)' ('CPRS WP v1 08'); Department of Climate Change, 'Climate Change Carbon Pollution Reduction Scheme: White paper (Vol 2, 2008)' ('CPRS WP v2 08').

⁵⁸ CPRS 09, (n 54); Carbon Pollution Reduction Scheme Bill (No. 2) 2009 (Cth); Carbon Pollution Reduction Scheme Bill 2010 (Cth) ('CPRS 10').

⁵⁹ Peter Sopher, Anthony Mansell and Clayton Munnings, 'Australia: The World's Carbon Markets: A Case Study Guide to Emissions Trading' Environmental Defense Fund IETA, 2014) (online, at 1 October 2019) <https://www.edf.org/sites/default/files/EDF_IETA_Australia_Case_Study_May_2013.pdf>.

⁶⁰ CPRS 10 (n 58)

⁶¹ Sopher (n 59).

⁶² Australian Government, 'Securing a clean energy future: The Australian government's climate change plan' (2011) (online, at 30 October 2019) ('CER UC') <<http://large.stanford.edu/courses/2012/ph240/aslani2/docs/CleanEnergyPlan-20120628-3.pdf>>.

package passed the Parliament in November 2011, and received Royal Assent in December 2011.⁶³ The CPM commenced on 1 July 2012.

After two years of a well-working Australian carbon pricing scheme, newly elected Prime Minister Abbott delivered on a campaign promise of abolishing the CPM. A legislative package entered into force on 1 July 2014, dismantling the CPM.⁶⁴

Following the abolition of the CPM, the Coalition Government's main climate change policy instrument became the Emission Reduction Fund (ERF), which was built upon the already existing legal framework for the Carbon Farming Initiative (CFI), a domestic voluntary offsets scheme that offered a range of abatement and carbon sequestration opportunities in the land sector.⁶⁵ The ERF is an incentive-based scheme, in which the Federal Government subsidizes sequestration or emission avoidance projects through the direct purchase of offset credits known as Australian Carbon Credit Units (ACCU). The process for purchase of ACCU is completed via reverse auctions and tenders, whereby project proponents compete for the undertaking of emissions abatement projects. The purchaser, in this case, the government, selects the successful bids to enter into a contract with.⁶⁶

Linked to the ERF is the Safeguard Mechanism (SM), which commenced operations on 1 July 2016.⁶⁷ The SM is a baseline and credit mechanism covering a relatively small number of high emitters in Australia. The latest amendments to the ERF/SM scheme came into effect on 7 March 2019, under the Morrison Government, and were implemented through delegated

⁶³ *Clean Energy Act 2011* (Cth) (CEA 11); *Clean Energy Regulator Act 2011* (Cth); *Climate Change Authority Act 2011* (Cth); *Australian National Registry of Emissions Units Act 2011* (Cth); *Clean Energy (Charges—Customs) Act 2011* (Cth); *Clean Energy (Charges—Excise) Act 2011* (Cth); *Clean Energy (Consequential Amendments) Act 2011* (Cth); *Clean Energy (Household Assistance Amendments) Act 2011* (Cth) ('CEHAAA 11'); *Clean Energy (Unit Issue Charge—Auctions) Act 2011* (Cth); *Clean Energy (Unit Issue Charge—Fixed Charge) Act 2011* (Cth); *Clean Energy (Unit Shortfall Charge—General) Act 2011* (Cth); *Clean Energy (Tax Laws Amendments) Act 2011* (Cth) ('CETLAA 11').

⁶⁴ *Clean Energy Legislation (Carbon Tax Repeal) Act 2014* (Cth) sch 1 pt 1. For an analysis of the underlying reasons for the Coalition government to adopt its current climate change policy, see Elena Aydos and Sven Rudolph, 'Climate Policy Made 'Down Under': The Political Economy of a New Carbon Market in Australia' (2018) 12 *Climate and Carbon Law Review* 304; Elena Aydos, 'What Went Wrong? Lessons from a Short-Lived Carbon Price in Australia' in *Tributacao e Sustentabilidade Ambiental* (FGV Editora, 2015) 75.

⁶⁵ *Carbon Farming (Carbon Farming Initiative) Act 2011* (Cth) ('Carbon Credits 11'); *Carbon Farming Initiative Amendment Act 2014* (Cth) ('CFIAA 14').

⁶⁶ *Ibid*; Australian Government, Clean Energy Regulator, *Understanding Contracts* (online, at 4 April 2016) ('CER UC') <<http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Step-2-Contracts-and-auctions/understanding-contracts>>.

⁶⁷ *National Greenhouse and Energy Reporting Act 2007* (Cth) ('NGERA 07'); *CFIAA 14* (n 65) *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015* (Cth) ('NGERSMR 15').

legislation.⁶⁸ The key features of the CPRS, CPM and ERF/SM schemes are compared below and assessed against the criteria for a just carbon market.

A Coverage

The (Climate) justice criteria on coverage calls for mandatory participation of all polluters and coverage of all greenhouse gases (GHG), fulfilling the equality, the intra- and inter-generational justice, and the polluter-pays-principle. These requirements are only partially fulfilled by the Australian CPRS and the CPM, with the CPRS complying to the greatest extent, while the ERF/SM fails to comply with the (Climate) justice criteria.

The CPRS would have covered all six GHG listed under the Kyoto Protocol, but was designed to only be mandatory for approximately 1,000 large polluters from the energy conversion, transport, fugitive emissions, industrial processes and waste sectors, emitting 25,000 tons or more of Carbon Dioxide equivalent (CO₂-e) per year, thus covering approximately 75% of Australia's emissions.⁶⁹ Excluded from the CPRS were emissions from agriculture, forestry, fugitive emissions from decommissioned underground coal mines, certain synthetic GHG and emissions from biomass combustion.⁷⁰

The CPM was also mandatory to liable companies. It covered approximately 360 large polluters from aluminum smelting, stationary energy conversion, non-legacy waste, transport,⁷¹ industrial processes and fugitive emissions emitting 25,000 tons of CO₂-e per year or more, thus being responsible for around 60% of Australia's emissions.⁷² The CPM covered only four of the six Kyoto GHG. The scheme excluded emissions from agriculture, forestry, fugitive emissions from decommissioned coal mines, legacy waste and road transport. Legislation on fuel tax and synthetic GHG imposed an equivalent carbon price on some businesses' transport emissions, the non-transport use of liquid and gaseous fuels (except natural gas) and synthetic GHG.⁷³

⁶⁸ *National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment Rule (No. 1) 2019* (Cth) ('*NGERSMAR No 1*').

⁶⁹ CCCPRS WP V1 (n 57) 6.

⁷⁰ Explanatory Memorandum, Carbon Pollution Reduction Scheme Bill 2010 (Cth) ('*EMCPRS 10*') 1.64.

⁷¹ Rail, domestic aviation and shipping.

⁷² *CEA 11* (n 63) s 20(4); Explanatory Memorandum, Clean Energy Bill 2011 (Cth) ('*EMCEB 11*') s 33.

⁷³ *Ibid.* The AUS CPM covered exclusively CO₂, CH₄, N₂O and PFCs from aluminium smelting.

The voluntary participation in the ERF coexists with a mandatory participation for approximately 200 large businesses with annual emissions of over 100,000 tons of CO₂-e.⁷⁴ The ERF/SM covers exclusively direct GHG emissions from power generation, mining (coal and metal ores), oil and gas extraction, gas supply, manufacturing, transport, heavy and civil engineering construction, and (new) waste.⁷⁵

B Cap

Just carbon markets should have absolute volume caps in line with the well below 2°C Paris Agreement target. The criterion was only partially fulfilled by the CPRS and the CPM, with the ERF/SM lagging behind.

Australia has a history of committing only to weak reduction targets. At the time of the CPRS proposal, Australia had committed not to a reduction, but to an 8% increase in emissions compared to 1990 levels for the first Kyoto Protocol compliance period.⁷⁶ Under the Doha Amendment to the Kyoto Protocol, Australia's reduction targets were set between 5% and 15% below 2000 levels by 2020.⁷⁷ In the event that there is comprehensive international agreement, the ambition of the target could be increased to 25% below 2000 levels by 2020.⁷⁸ The weak national targets reflected on the weak cap setting model.

In the first 12 months of the CPRS there was no absolute emissions cap, primarily due to transitional measures put in place to prevent price volatility. However, from 2012-13, absolute volume caps would have been set by regulations, based on the indicative (not very ambitious) national targets in the relevant year.⁷⁹ Furthermore, the Government would provide guidance to businesses on future absolute caps through the use of gateways.⁸⁰

⁷⁴ *NGERA 07* (n 67) s 22XJ; *NGERSMR 15* (n 67) r 8; Australian Government, 'Safeguard Facility Reported Emissions 2017-18', Clean Energy Regulator (online, at 13 May 2019) <<http://www.cleanenergyregulator.gov.au/NGER/National%20greenhouse%20and%20energy%20reporting%20data/safeguard-facility-reported-emissions/safeguard-facility-emissions-2017-18>>.

⁷⁵ *NGERA 07* (n 67) s 22XI; *NGERSMR 15* (n 67) r 7; Australian Government, 'Coverage', Clean Energy Regulator (online, at 2 May 2019) <<http://www.cleanenergyregulator.gov.au/NGER/The-safeguard-mechanism/Coverage>>.

⁷⁶ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 11 December 1997, 2303 UNTS 148 (entered into force 16 February 2005) annex B.

⁷⁷ Conference of the Parties, *United Nations Framework Convention on Climate Change, Report of the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol on Its Eighth Session, Held in Doha from 26 November to 8 December 2012 – Addendum – Part Two: Action Taken by the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol at its Eighth Session*, UN Doc FCCC/KP/CMP/2012/13/Add 1 (28 February 2013) annex I.

⁷⁸ *Ibid.*

⁷⁹ *CPRS 10* (n 58) Pt 2.

⁸⁰ *EMCPRS 10* (n 70) 10.1.

Operating under the same federal emission reduction targets, emissions were not capped in the CPM framework during an even longer transitional period of three years.⁸¹ However, from 1 July 2015 onwards, an absolute cap would have been set by regulations,⁸² again, reflecting Australia's medium- and long-term GHG reduction targets.⁸³ While there was no pre-determined cap reduction path both under the CPRS and the CPM, caps were expected to gradually decrease via regulations.⁸⁴

The Coalition Government committed only to the lowest level of emission reduction for 2020, which is 5% below 2000 levels. Australia's intended nationally determined contributions under the Paris Agreement continued on a weak path, with a reduction target of 26-28% below 2005 levels by 2030.⁸⁵

Even more concerning is the lack of an absolute cap under the ERF/SM, in the present and foreseeable future of the scheme. Instead, individual baseline emissions number are set for each facility, calculated on the basis of their historical emissions data, with no mandatory graduation reduction of individual baselines. The 2019 amendments allowed facilities in the natural resources sectors to apply to have their baselines increased, with on their baseline, which will ultimately lead to an overall increase in emissions.⁸⁶ This model does not incentivise emission reductions and is not capable of preventing absolute emission volume increases at the national level.⁸⁷ The ERF/SM once again violates the justice criteria in relation to the cap.

C Allocation

Auctioning of emissions allowances complies with the polluter-pays-principle and result-based justice in transfer and acquisition as well as in allocation. This criterion would be increasingly fulfilled by the CPRS, while the CPM would eventually only partially fulfil the justice criterion for allocation. The assessment is not applicable for the ERF/SM, as explained below.

Both the CPRS and CPM frameworks created and issued allowances, each corresponding to one ton of CO₂-e emissions per year. During the first twelve months of the CPRS (2011-12),

⁸¹ *CEA 11* (n 63) s 100(7).

⁸² *Ibid* s 14.

⁸³ *CEA 11* (n 63) s 14(2).

⁸⁴ *EMCEB 11* (n 72) 2.4.

⁸⁵ Australia, 'Australia's Intended Nationally Determined Contribution to a new Climate Change Agreement', *INDCs as communicated by Parties* (INDC Submission, 11 August 2015) <<https://www4.unfccc.int/sites/submissions/indc/Submission%20Pages/submissions.aspx>>.

⁸⁶ *NGERSMAR No 1* (n 68).

⁸⁷ *NGERA 07* (n 67) s 22XL; *NGERSMR 15* (n 67) Sub-div 2; Grattam Institute, Submission to the Department of the Environment, Consultation Paper "Emissions Reduction Fund: Safeguard Mechanism (20 May 2015).

allowances would have been allocated at a fixed charge of AU\$10 per unit.⁸⁸ From 2012-13 there would have been auctioning of allowances, combined with targeted assistance via free allocation of permits to emissions-intensive trade exposed (EITE) industries and the coal sector.⁸⁹ Assistance would have been transitional and the scheme would have progressively moved towards full auctioning.

From 1 July 2012 until 30 June 2015, the framework of the CPM provided for the issuance of allowances for a fixed price of AU\$23 per tonne of CO₂-e in the financial year 2012-13, AU\$24.15 per tonne in the financial year 2013-14, and \$25.40 in the financial year 2014-15.⁹⁰ After 1 July 2015, allowances would have been auctioned.⁹¹ For both the fixed charge years and the following flexible charge years, the government would issue allowances free of charge to EITE sectors under the Jobs and Competitiveness Program. Two categories of eligibility for this program, i.e. moderately emissions-intensive and highly emissions-intensive, would determine the different levels of free allocation.⁹²

Under the ERF/SM no allowances are issued or traded, as the federal government enters into direct Carbon Abatement Contracts with program developers in order to directly purchase offset credits generated through sequestration or emission avoidance projects.⁹³

D Revenue Use

Both the CPRS and the CPM were set to be revenue neutral. Revenue from the CPRS would have been used to purchase international credits, such as avoided deforestation credits, and to assist household and industry assistance measures, thus promoting national and international intra-generational justice.⁹⁴

The design for revenue spending under the CPM is the most advanced in terms of meeting justice. Over 50 per cent of carbon price revenue was earmarked for cost compensation of approximately 1 million low-income households, promoting national intra-generational justice. The package effectively delivered a tax reform that compensated beyond the cost increase due

⁸⁸ *CPRS 10* (n 58) cl 80.

⁸⁹ *Ibid* cl 166.

⁹⁰ *CEA 11* (n 63) ss 5 (definition of 'fixed charge year'), 93; Commonwealth of Australia, 'Strong Growth, Low Pollution: Modelling a Carbon Price' (2011).

⁹¹ *Ibid* ss 4, 5 (definition of 'flexible charge year').

⁹² *CEA 11* (n 63) pt 7

⁹³ *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth); *Carbon Credits (Carbon Farming Initiative) Regulations 2011* (Cth); *Carbon Credits (Carbon Farming Initiative) Rule 2015* (Cth).

⁹⁴ *CPRS GP 08* (n 55); . *CPRS WP v1 08* (n 57); *CPRS WP v2 08* (n 57).

to the carbon price.⁹⁵ In addition to tax cuts, pensions, allowances and benefits were increased and there were other benefits to households with special needs.⁹⁶ The CPM also provided for investments in renewable energy and funding for emissions reduction projects in the land sector, promoting inter-generational justice by additionally reducing emissions.⁹⁷

Finally, 40 per cent of the revenue collected under the CPM were dedicated to industry support. A 'Jobs and Competitiveness Program' provided assistance to EITE sectors,⁹⁸ while a Coal Sector Jobs Package⁹⁹ and an Energy Security Fund¹⁰⁰ would guarantee free allocation of permits and cash payments to the coal sector, including coal mining and coal-fired electricity generators. Additionally, a Steel Transformation Package provided assistance to the Steel sector.¹⁰¹ As explained above, cushioning cost increases for selected industries in order to prevent carbon leakage may cater to national intra-generational justice. However, literature demonstrates that the assistance to industry under the CPM was overcompensating a number of sectors, including the Steel sector, violating the principles of intra-generational justice.¹⁰²

Contrarily, the ERF/SM is a subsidy-based scheme that uses government revenue to purchase offset credits. Therefore, the ERF/SM is not only incapable of generating revenue, but it is also transferring public revenue to polluters, contradicting all principles of justice.¹⁰³

E Flexibility Mechanisms

The justice criteria in respect to flexibility mechanisms allow for banking (as it serves both inter- and intra-generational justice) but disapprove borrowing of permits (serves intra-generational justice but violates inter-generational justice). The CPRS and the CPM somewhat complied with the criteria, allowing for banking of units after the fixed charge period. However, limited borrowing was also allowed.¹⁰⁴

⁹⁵ *EMCEB 11* (n 72) s 13.

⁹⁶ *CEHAAA 11* (n 63); *CETLAA 11* (n 63); *Clean Energy (Income Tax Rates Amendments) Act 2011* (Cth).

⁹⁷ *EMCEB 11* (n 72) s 16.

⁹⁸ *CEA 11* (n 63) s pt 7.

⁹⁹ *Ibid* pt 8.

¹⁰⁰ *EMCEB 11* (n 72) s 16.

¹⁰¹ Australian Government, *'Securing a clean energy future: The Australian government's climate change plan'* (2011) (online, at 30 October 2019) <<http://large.staford.edu/courses/2012/ph240/aslani2/docs/CleanEnergyPlan-20120628-3.pdf>>.

¹⁰² Elena Aydos, *'Paying the Carbon Price: The Subsidisation of Heavy Polluters Under Emissions Trading Schemes'* *New Horizons in Environmental and Energy Law* (Edward Elgar, 2017); Tony Wood and Tristan Edis, *'New Protectionism Under Carbon Pricing: Case Studies of LNG, Coal Mining and Steel Sectors'* (Grattan Institute, 2011) 3.

¹⁰³ *CFIAA 14* (n 65); *CER UC* (66).

¹⁰⁴ *CPRS 10* (n 58) cl 129(4), 130(4); *CEA 11* (n 63) ss 122(4), 133(6).

In general, a limited number of offsets that meet stringent requirements may serve inter- and intra-generational justice. Under the CPRS, a domestic offsets program offered opportunity to receive free Australian emissions units for sustainable offset projects. The CPRS would also accept international offset units, including certified emission reduction (CERs), emission reduction units (ERUs), removal units (RMUs), prescribed Kyoto units and prescribed non-Kyoto international emissions unit.¹⁰⁵ Not all eligible units would meet the justice criteria.

The CPM was linked to the Carbon Farming Initiative (in its original design), a domestic voluntary offsets scheme offering a range of abatement and carbon sequestration opportunities in the land sector.¹⁰⁶ The CPM would also link to international schemes from 2015 onwards, up to a limit of 50% of the participants' liability for the relevant year.¹⁰⁷ Similarly to the CPRS, not all eligible units meet the justice criteria.

Under the ERF/SM, facility operators can surrender eligible carbon offsets at any time to remain below their baseline. Credits issued under the Emissions Reduction Fund—also known as Australian Carbon Credit Units or ACCUs—are eligible offsets.¹⁰⁸ Not all eligible units meet the justice criteria.

F Price Management

As explained above, the justice criteria suggest that market intervention should be kept to the minimum. The CPRS and the CPM would progressively fulfil this requirement, as price flexibility was meant to increase over time. In the first 12 months of the CPRS, permits would have been sold for a fixed price, with a practical effect of a carbon tax.¹⁰⁹ From 2012-13, permits would be auctioned.¹¹⁰ In the first four years of auctioning, access to an unlimited store of additional permits issued at a pre-specified fixed price would have the practical effect of a price cap, starting at AU\$40.¹¹¹ These units would not be tradeable or bankable for future use.

Similarly, under the CPM, permits were sold during the fixed charge years at AU\$23 per permit. A price ceiling was in place for the first three flexible charge years.¹¹² The original design of the AUS CPM also included a price floor (AU\$15, rising annually by four per cent) in the first

¹⁰⁵ *EMCPRS 10* (n 70) 2.39.

¹⁰⁶ *CEA 11* (n 63) ss 125(7), 5 (definition of 'eligible Australian carbon credit unit').

¹⁰⁷ *Ibid* ss 121, 123A(8), 5 (definition of 'Kyoto unit').

¹⁰⁸ *CFIAA 14* (n 65).

¹⁰⁹ *CPRS 10* (n 54) s 89.

¹¹⁰ *Ibid* ss 99, 100.

¹¹¹ *Ibid* ss 89, 272.

¹¹² *CEA 11* (n 63) s 100(1).

three flexible charge years.¹¹³ However, this feature was removed when the Australia and the European Union declared that they would link the CPM with the European Union Emissions Trading System (EU ETS).¹¹⁴

It is not possible to assess the ERF/SM against this criterion, given that permits are not issued by the Government under this scheme.

G Compliance

The CPRS and the CPM greatly complied with the justice requirements for compliance, while, once again, the ERF/SM present a weak design in relation to this criterion. The compliance cycles of the CPRS and the CPM were the financial year.¹¹⁵ Both schemes imposed stringent penalties in case of unit shortfall, although it did not include (over)compensation for excess emissions. Penalties were strict under the CPM, with a unit shortfall charge applicable in the first three years (fixed charge period) equivalent to 130 per cent of the ACU fixed price, once again not including (over)compensation for excess emissions.¹¹⁶ In flexible charge years, the unit shortfall charge was set by regulations and would range between 130 per cent and 200 per cent (default rate) of the benchmark average auction charge for the relevant period.¹¹⁷ In case a unit shortfall charge remained unpaid after the due date, an extra penalty calculated at the rate of 20% per annum (or a lower rate specified in the regulations) on the amount unpaid was due.¹¹⁸

Under the ERF/SM, in addition to the generous baselines and very limited liability imposed by the SM, the ERF/SM has very weak compliance mechanisms. Participants may opt between one financial year or multi-year periods (two or three-year multi-year periods).¹¹⁹ The penalty for exceeding the baseline is virtually insignificant, with the option for the participant to adjust the facility's baseline or select a multi-year compliance approach for managing excess emissions. The authority, the Clean Energy Regulator, has discretion in applying a range of enforcement options, including the issuing of infringement notices, acceptance of enforceable undertakings, seeking injunctions and pursuing court action.¹²⁰ Still, enforcement options are

¹¹³ *EMCEB 11* (n 72) s 32.

¹¹⁴ Explanatory Memorandum, Clean Energy Legislation Amendment (International Emissions Trading and Other Measures) Bill 2012 and related Bills (Cth) 4.

¹¹⁵ *CPRS 10* (n 54) s 4; *CEA 11* (n 63) s 4.

¹¹⁶ *Clean Energy (Unit Shortfall Charge—General) Act 2011* (Cth) s 8(3)(a).

¹¹⁷ *Ibid* s 8(3)(b).

¹¹⁸ *CEA 11* (n 63) s 135(1)(a)-(b).

¹¹⁹ *NGERSMR 15* (n 67) r 65.

¹²⁰ *NGERA 07* (n 67) s 45.

unlikely to ever be applied given the generous baselines. The Regulator may seek civil penalties through the courts with the maximum amount set at 100 penalty points per day, to a maximum of 10,000 penalty points in total. In addition to paying the penalty, the facility operator remains under an obligation to rectify an excess emissions situation. This option is also very unlikely to take place, as the civil penalty is considered a last resort and will never apply to businesses that meet legislated safeguard requirements.¹²¹

H Supporting Measures

None of the Australian schemes to date provided for border adjustment to prevent carbon leakage. The main strategy to protect EITE sectors in the CPRS and the CPM was the free allocation of permits, which does not comply with the polluter-pays-principle and result-based justice.

In terms of creating an ambitious common market of all major competitors, the CPM was the only scheme that started work towards this goal. In August 2012, the linking of the EU ETS and Australia's CPM was announced. GHG emissions permits from the EU ETS (European Union Allowances) were to be eligible to be used for compliance under the AUS CPM from July 2015 until July 2018 ('one-way link'). From 1 July 2018, a two-way link would be put in place, with mutual recognition of carbon units between the two ETSs.¹²²

Differently, the ERF/SM does not allow for the linking with international units.

IV. CONCLUSION

Climate change is a major threat to humankind, and while the Paris Agreement is one important step forward, it needs to be substantiated by more ambitious targets and policies. Carbon markets have been proven to be environmentally effective and economically efficient, but the subject of whether they can also be made just has been largely neglected in the literature. Still, (climate) justice is a requirement present in the concept of sustainability, in climate policy in general, and the Paris Agreement in particular.

¹²¹ Ibid, s 22XF, pt 5.

¹²² Australian Government, 'Australia and european commission agree on pathway towards fully linking emissions trading systems' (2012) (online, at 20 October 2019) <https://ec.europa.eu/clima/news/articles/news_2012082801_en>.

By applying modern justice concepts to carbon market design in a comprehensive way, we have found that carbon markets can indeed be designed in such a way that they fulfill ambitious justice criteria. Table 1 compiles the results of our theoretical analysis in column 1 and 2.

Australia has over a decade of experience with discussing and using carbon pricing. Using the justice criteria for carbon market design as a basis, we evaluated past and present Australian carbon pricing schemes, namely the Carbon Pollution Reduction Scheme (CPRS), The Carbon Pricing Scheme (CPM), and the combination of the Emission Reduction Fund and the Safeguard Mechanism (ERF/SM). Table 1 columns 3, 4, and 5 compile the evaluation results for these schemes.

Table 1: Just carbon market design and Australian CPRS CPM and ERF/SM

	Just carbon market design	CPRS	CPM	ERF/SM
Coverage	mandatory participation	+	+	±
	all, AT LEAST major GHG (based on CO ₂ e)	+ / +	± / +	- / -
	all, AT LEAST major polluters	± / +	± / +	- / -
Cap	based on 2°C target (e.g. 25-40% by 2020, base 1990)	-	-	-
	absolute volume cap	+	±	-
	gradual cap reduction	±	±	-
Allocation	unit of 1 t of CO ₂ e/a	+	+	-
	100% auctioning	±	±	-
	frequent, non-discriminatory auctions	+	+	-
	equally accessible market	+	+	-
Revenue Use	100% revenue recycling	+	+	-
	per capita dividend OR mitigation/adaptation, compensation	- / +	- / +	-
Flexibility Mechanisms	unlimited banking	+	+	-
	no borrowing	±	±	-
	offsets limited to sustainable projects	±	±	-
Price Management	price floor (≥ 30 US\$),	±	-	-
	price ceiling (≥ 100 US\$)	±	±	-
Compliance	control periods not longer than 3 years	+	+	+
	continuous emission monitoring or verified	+	+	+

	reporting	+	+	+
	emission and allowance tracking and registration	+	+	-
	finances (>p) for non-compliance	-	-	-
	over-compensation of excess emissions (at least 2x)			
Supporting Measures	border adjustment	-	-	-
	linking	±	±	-

+ fulfilled ± partly fulfilled - not fulfilled

From Table 1 it is quite obvious that early carbon pricing schemes in Australia, namely the CPRS (proposed, but not implemented) and the CPM (implemented), did reasonably well in terms of complying with justice criteria. This is particularly true in comparison with the ERF/SM currently in use. From a justice perspective, a possible new carbon pricing scheme in Australia should therefore rather be based on the CPRS or CPM design than on the ERF/SM design.

From the political perspective, although undoubtedly based only on the anecdotal evidence given in this paper, the results suggest that the two schemes favoured by a Labor Party government take justice considerations into account to a much larger extent than the ERF/SM implemented by the Coalition. A recent political economy study, however, supports the view that a sustainable carbon market in Australia, i.e. a carbon market that is environmentally effective, economically efficient, and socially just, is much more likely under a Labor Party government than under a Coalition government.¹²³ The 2019 federal election will eventually show if a new government is willing and capable of establishing a new carbon market in Australia that takes justice seriously.

¹²³ Elena Aydos and Sven Rudolph, 'Climate Policy Made 'Down Under – The Political Economy of a New Carbon Market in Australia' (2018) 12(4) *Carbon and Climate Law Review* 304.