

2022-02-14

Anchoring policies, alignment tensions: reconciling New Zealand's climate change act and emissions trading scheme

Bailey, Ian

<http://hdl.handle.net/10026.1/18771>

University of Plymouth

All content in PEARL is protected by copyright law. Author manuscripts are made available in accordance with publisher policies. Please cite only the published version using the details provided on the item record or document. In the absence of an open licence (e.g. Creative Commons), permissions for further reuse of content should be sought from the publisher or author.

Article

Anchoring Policies, Alignment Tensions: Reconciling New Zealand’s Climate Change Act and Emissions Trading Scheme

Tor Håkon Jackson Inderberg ^{1,*} and Ian Bailey ²¹ Fridtjof Nansen Institute, Norway² School of Geography, Earth and Environmental Sciences, University of Plymouth, UK* Corresponding author (thinderberg@fni.no)

Submitted: 4 August 2021 | Accepted: 3 December 2021 | Published: in press

Abstract

Climate Change Acts (CCAs) seek to anchor national climate policy by establishing long-term targets and lines of accountability that guide the development of other climate policy instruments. However, counter-pressures to modify CCAs can occur where tensions exist with the provisions of already-established policies that enjoy substantial political and stakeholder support. Such tensions can be especially pronounced where CCAs necessitate major changes to emissions trading schemes (ETs) that have formed the mainstay of efforts to reduce national emissions. This article employs a novel anchoring policy framework to examine the dynamics of aligning ETs with CCAs. We investigate debates on reforms to the New Zealand Emissions Trading Scheme following the introduction of the Zero Carbon Act in 2019 to examine how alignment pressures between anchoring and subordinate policies are negotiated. The analysis reveals several tactics used to increase the acceptability of reforms to the New Zealand Emissions Trading Scheme and protect the Zero Carbon Act’s integrity. The article concludes by arguing that a greater understanding of alignment pressures between anchoring and subordinate policies is essential in enabling both CCAs and ETs to contribute to achieving decarbonisation goals.

Keywords

anchoring policies; climate change acts; emissions trading; New Zealand; policy alignment

Issue

This article is part of the issue “Carbon Pricing Under Pressure: Withering Markets?” edited by Jørgen Wettestad (The Fridtjof Nansen Institute) and Lars H. Gulbrandsen (The Fridtjof Nansen Institute).

© 2022 by the author(s); licensee Cogitatio (Lisbon, Portugal). This article is licensed under a Creative Commons Attribution 4.0 International License (CC BY).

1. Introduction

In 2019, New Zealand joined the UK and a number of other countries in adopting a framework climate change act (CCA) to guide the development of its national climate strategy (Muinzer, 2021). Although New Zealand had already introduced general climate legislation under the Climate Change Response Act (CCRA) of 2002, Nash and Steurer (2019, p. 1053) describe CCAs as a new breed of “legislation...that lays down general principles and obligations for climate change policymaking...with the explicit aim of reducing greenhouse gas emissions in relevant sectors through specific measures to be implemented at a later stage.” CCAs are thus seen as distinc-

tive from the majority of national climate laws adopted during the 2000s that lacked the legal force to exert a systematic or lasting impact on greenhouse-gas emissions and played little role in whether and how governments progressed climate mitigation policy (Casado-Asensio & Steurer, 2016).

CCAs can take multiple forms but are typically distinguished by the following attributes: a legal duty for governments to act; a binding long-term emissions target; the adoption of carbon budgets to ensure progress towards the target; and the establishment of independent bodies to monitor progress and advise governments on climate policy (Fankhauser et al., 2018). CCAs rarely contain detailed provisions on how to reduce emissions

(Muinzer, 2021). Their intention instead is to define overarching premises and accountabilities that anchor the development of other policies and regulatory practices introduced to reduce emissions in specific sectors (Bailey et al., 2021; Swidler, 2001). The negotiation of anchoring policies (APs) can consequently be keenly contested but, once adopted, they are expected to remain stable and implementing policies are expected to respond to their requirements (Karlsson, 2021). The focus on long-term stability and high thresholds for future governments to amend CCAs is another feature distinguishing CCAs from other national climate laws that may be more susceptible to politically motivated changes (Muinzer, 2020). For these reasons, the anchoring capacity of CCAs is seen as critical to delivering the emissions cuts pledged by national governments under the Paris Climate Agreement. However, alternative dynamics may arise, especially during attempts to align established climate policies with newly introduced CCAs, where existing agreements, institutional practices, and vested interests may impede alignment and create counterpressures on the AP. CCAs may come under particular pressure where tensions surface with emissions trading schemes (ETSs) that have operated as flagship policies for pricing and reducing emissions (Wetttestad & Gulbrandsen, 2018).

Pressures on other CCAs, particularly the UK CCA, have been discussed extensively in the literature (Gillard, 2016; Lockwood, 2013, 2021), and reveal that CCAs have largely succeeded in steering other national climate policies towards their goals (Climate Change Committee, 2021). However, New Zealand offers an important lens for analysing alignment pressures where attempts have been made to bring a previously-dominant climate policy—the New Zealand emissions trading scheme (NZETS)—into line with the requirements of a newly-established CCA, the Zero Carbon Act (ZCA). The NZETS was introduced in 2008, 11 years prior to the ZCA, and was for many years the country’s main policy for reducing greenhouse-gas emissions. The scheme was heavily criticised for creating weak incentives and exempting biogenic emissions from agriculture but was defended by the National Party government and many industry groups (Inderberg & Bailey, 2019; Inderberg et al., 2017). The ZCA—with its legal commitment to achieve net-zero emissions by 2050—created opportunities for sweeping reforms to the NZETS. However, although alignment has occurred in many areas, other measures remain contested, particularly biogenic agricultural emissions (Bailey et al., 2021).

In this article, we investigate how such alignment tensions are managed politically, the factors influencing how tensions between policies are navigated, and the implications of these tensions for CCAs as guiding frameworks for national climate mitigation policy. To achieve this, we use a novel analytical framework to explore interactions between national CCAs and ETSs from anchoring and path-dependency perspectives,

then examine political techniques used to reconcile pressures between New Zealand’s ZCA and NZETS. The following sections outline these perspectives and provide a brief background to New Zealand climate policy, before discussing the main alignment pressures between the ZCA and NZETS. The article then refines the framework utilising insights from the New Zealand case and offers conclusions.

2. Policy Hierarchies: Anchoring and Path-Dependency Perspectives

An extensive literature exists on the integration of environmental and climate considerations into other policy spheres (Adelle & Russel, 2013; Jordan & Lenschow, 2010; Matti et al., 2021) and how climate policies interact with other climate or energy policies (Boasson & Wetttestad, 2013; del Río & Cerdá, 2017). Various approaches have also been used to explain institutional change, ranging from analyses of changes to formal structures, procedures, and policy relationships to cultural conceptualizations of “institutional” and norm-based changes (Aberbach & Christensen, 2001; Mahoney & Thelen, 2010; Peters, 2019). However, beyond the examination of “formal structure” effects (e.g., Christensen & Peters, 1999), few analytical frameworks explore how the relative statuses of formal policies affect these interactions when a new policy is introduced. “Policies” in this sense can be understood as written plans, principles, support schemes, laws, or regulations issued by a government that create explicit expectations, goals, and rules and regulations that define some combination of what needs to be done, by when, by whom, and through what mechanisms (Christensen & Peters, 1999). To address this knowledge gap, we employ a novel framework to provide a formalised exploration of policy relationships examining: *Anchoring-policy perspectives*, where subordinate policies (SPs) adapt to an AP; and *path-dependency perspectives*, where institutionalised SPs create pressures to modify the AP. We sketch the broad outlines of the framework in this section, then refine it later in the article based on New Zealand’s experiences.

The term “anchoring policies” (APs) is used throughout to describe official policies and regulations that seek to define and embed the key premises for SPs. Their “anchoring” function thus refers to their influence over the design of SPs that provide the detailed regulations and levers for achieving the AP’s goals (Inderberg, 2020). APs logically occupy a higher place in the hierarchy of policies affecting a policy area by virtue of the fact that they are introduced to establish general goals, principles, and rules that shape more targeted instruments introduced to achieve these goals. APs may thus express paradigmatic ideas that help APs to resist change and specify their logical and functional links to other policies (Hall, 1993; Inderberg, 2020).

In ordinary circumstances, APs would be expected to place alignment pressure on SPs following similar

dynamics to those suggested by goodness-of-fit theory and alignment between EU and national policies (Bailey, 2002; Börzel & Risse, 2003). Similarly, the AP perspective enables a focus on the functional relationship between policies and the potential for alignment gaps where APs and SPs contain inconsistencies. The larger these discrepancies, the higher the pressure is, under ordinary circumstances, to align SPs with the AP's principles and goals (Peters, 2019). This is illustrated in Figure 1 by the unidirectional relationships between the AP and SPs (1–4).

Alternative dynamics and mechanisms may occur, however, where political actors whose interests or ideas are affected by action in the policy area seek to influence specific instruments or the AP. The literature on vested interests and policy fields indicates that established political and economic actors with interests aligned with the economic and policy status quo will resist, or seek to modify, policies to defend their interests (Fligstein & McAdam, 2012; Kungl, 2015). Such resistance can delay new policy programmes years after their adoption or distort their implementation. This is especially the case where economic actors are supported by political parties, as occurred with Danish energy reforms in the 2000s and carbon pricing in Australia (Bailey, 2017; Eikeland & Inderberg, 2016). This may also generate feedback loops, where established policies create biased preferences among dominant actors towards the SP (Pierson, 2004). In such situations and where policy stances are entrenched (Fligstein & McAdam, 2012; Inderberg, 2020), alignment pressure may be heightened on the AP. Figure 1 indicates this distinction for SP no. 5 as the reversed relationship direction B.

The ZCA established new principles, goals, and rules for New Zealand climate policy that are consistent with features of a national climate AP, while the NZETS's now theoretically functions to deliver emissions targets articulated in the ZCA. However, the NZETS's status, prior to the ZCA, as New Zealand's flagship climate policy indi-

cates two alignment possibilities: an *anchoring outcome*, where the NZETS is aligned with the ZCA's goals and rules; and a *path-dependency outcome*, where established interests and status quo bias lead to resistance to alignment and, potentially, revisions to the ZCA to alleviate tensions with the NZETS.

Where alignment pressures occur, political strategies are needed to resolve them. Several options are examined later in the article, including: *pre-emptive concessions* to avert a potential threat to the AP; *incremental adaptation*; *deferring decisions*; the use of *political safety valves*; and *exploiting ambiguities* in AP requirements to ease tensions. Having outlined the general analytical framework, the next section provides a background to climate-policy debates in New Zealand to inform analysis of the alignment pressures that have occurred between the ZCA and NZETS. The analysis is based on the scrutiny of parliamentary debates, government papers, consultations, and Climate Change Commission (CCC) reports on the two policies. The main analysis covers 2018–2021, the focal period of debate on the two policies. The short time creates some uncertainties, as clear outcomes on the ZCA–NZETS relationship may take time to unfold. However, multiple decisions affecting the NZETS's design features were made during this time and areas of ongoing debate are noted.

3. Background to Climate Policy in New Zealand

New Zealand has an export-oriented economy with strong representation from the primary industries, especially livestock, dairying, forestry, and viticulture. New Zealand's gross emissions were 82.3 million tonnes CO₂e in 2019, 48% of which came from agricultural methane and nitrogen-based fertilisers (Ministry for the Environment, 2021a). Until 2008, the country had few mandatory emissions-reduction policies and relied mainly on informational and voluntary measures (Bührs,

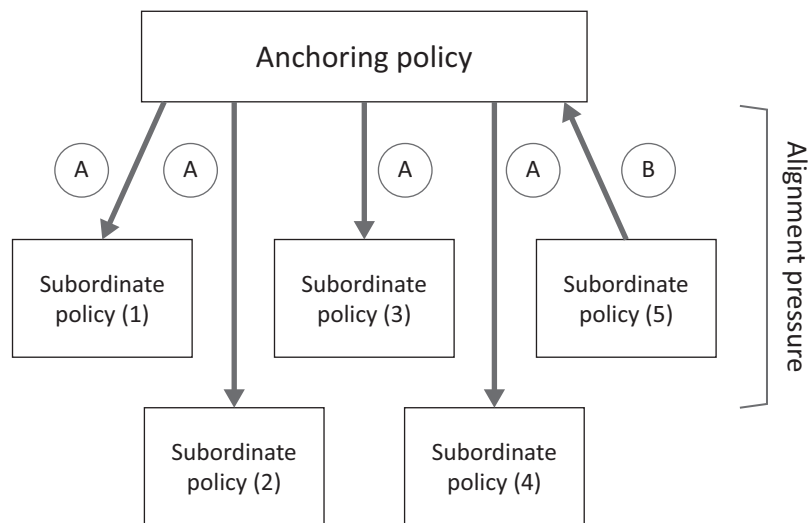


Figure 1. Alignment pressures between anchoring and subordinate policies.

2008). However, a 24.7% increase in emissions between 1990 and 2005 and the entry of the Kyoto Protocol into force in 2005 prompted political debate on the adoption of a carbon tax or an ETS. The latter was introduced in 2008 and market-based instruments are generally viewed within New Zealand's neoliberal political and economic culture as effective and economic ways of reducing emissions (Inderberg et al., 2017). New Zealand's political system operates mixed-member proportional voting, with governments typically led by the left-leaning Labour Party or centre-right National Party. The voting system has made coalition government and compromise politics a consistent feature of New Zealand government and other parties involved in coalitions at various times include the Green Party, New Zealand First, Māori Party, and the libertarian ACT.

3.1. The New Zealand Emissions Trading Scheme

The NZETS was introduced in 2008 under the CCRA, New Zealand's pre-existing legal framework for climate policy. Despite general support for market-based climate policies, the National Party opposed the introduction of the NZETS, arguing that emissions reduction was technologically and economically difficult in key industries and that mandatory emissions pricing for agriculture and other energy-intensive trade-exposed industries (EITEIs) conflicted with national economic interests (Bailey & Inderberg, 2016; Inderberg et al., 2017). In making these arguments, the National Party identified these sectors' interests as critical considerations for New Zealand climate policy (Driver et al., 2018). The National Party decided not to repeal the NZETS following its 2008 election victory but introduced reforms in 2009 and 2012 that weakened the scheme's emissions-reduction capacity (Inderberg et al., 2017). The government was able to make these changes because New Zealand adopted a relatively undemanding target under the Kyoto Protocol (to return emissions to 1990 levels rather than reducing them below this level) and the CCRA contained few provisions to prevent economic objectives from dictating national climate policy (Russell et al., 2014). In particular, the CCRA lacked the ambitious long-term target, carbon budgets, and scrutiny requirements normally associated with CCAs. The scheme's more contentious provisions and revisions included (Bertram & Terry, 2010):

- The absence of a defined ETS emissions cap, the logic for which was to enable New Zealand to make unlimited use of forest sequestration and international allowances to meet its Kyoto target. However, this meant the NZETS gave no certainty about the emissions levels within which the national economy must operate.
- A \$25 tonne⁻¹ price ceiling on emissions allowances (New Zealand Units [NZUs]) that muted the price incentive for emissions reduction.

- A dispensation allowing EITEIs to submit one NZU for every two tonnes of emissions, which effectively halved the abatement incentive for New Zealand's main industrial emitters.
- Free NZUs allocations to 26 EITEIs based on output and emissions-intensity benchmarks. This provision, combined with the lack of an overall scheme cap, created few incentives for industrial emitters to invest in emissions-reducing activities.
- Weak incentives and high potential liabilities for carbon sequestration from forestry as a route for meeting emissions targets.
- Indefinite deferral of agricultural biogenic emissions from the ETS.

Although the "two-for-one" scheme ended following further reforms in 2015 and New Zealand lost the right to participate in Kyoto international carbon markets after it decided not to ratify the Kyoto II agreement (Diaz-Rainey & Tulloch, 2018), disputes continued over the NZETS because the scheme's dominance in the national climate-policy portfolio meant that it underpinned the credibility of New Zealand's climate strategy.

3.2. The Zero Carbon Act

Support for framework climate legislation grew in New Zealand from 2015 onwards, fuelled by campaigning by Generation Zero, a youth-based environmental organisation, efforts by GLOBE-NZ, a cross-party parliamentary body created to build cross-party consensus on climate change (Graham, 2018), and the election in 2017 of a Labour-led government, whose leader, Jacinda Ardern, made climate change a key election issue (Bailey et al., 2021; Hall, 2020). Following a country-wide consultation in 2018, the ZCA was approved by the House of Representatives in November 2019 with the support of all political parties except ACT. In becoming the country's new climate AP, it established new goals and measures for New Zealand climate policy:

- A legal target to reduce all domestic emissions, except biogenic methane, to net zero by 2050.
- Reduction targets for biogenic methane of 24%–47% below 2017 levels by 2050, and 10% below 2017 levels by 2030.
- Five-year carbon budgets to provide a pathway towards the net-zero target.
- An independent CCC to provide impartial advice and monitoring to keep future governments on track to meet the ZCA's goals (New Zealand Parliament, 2019a).

Cross-party support came at the calculated cost of the lower target for biogenic emissions, however, and in overall terms, the ZCA constituted a balance between the views of different parties, including the National Party, New Zealand First (Labour's coalition partner),

and the Greens, whose co-leader, James Shaw, was given the role of Minister for Climate Change under a “confidence-and-supply” agreement. Despite this, the National Party expressed reservations about aspects of the ZCA, including the biogenic methane target and agriculture’s involvement in the NZETS (Bailey et al., 2021). Reflecting its importance to achieving the ZCA’s goals, reforming the NZETS became the government’s next climate-policy priority. These reforms were legislated under the Climate Change Response (Emissions Trading Reform) Amendment Bill (ETR Bill) in 2020 (New Zealand Parliament, 2020a). The next section discusses the research strategy before Section 5 charts the main debates on aligning the NZETS with the ZCA, including emissions caps, price controls, international allowances, agricultural emissions, and forestry.

4. Research Strategy

The research informing this analysis was undertaken over three phases between 2015 and 2021. The first phase (2015–2017) consisted of secondary document analysis and semi-structured interviews with 23 representatives from New Zealand’s main political parties, government departments, businesses, NGOs, and independent analysts. Its aim was to secure a cross-party and cross-sectoral perspective on factors shaping New Zealand climate politics and the design of the NZETS, focusing particularly on tensions over target- and price-setting, agricultural emissions, forestry, and international emissions allowances. The interviews accordingly probed the design and reform of the NZETS, the main actors involved in discussions, and the political processes accompanying its development (Inderberg & Bailey, 2019; Inderberg et al., 2017).

The second phase centred on the politics of negotiating the ZCA and subsequent reforms to align the NZETS with the ZCA (Bailey et al., 2021). Empirical material was drawn mainly from public documents, complemented by an interview with a leading NGO campaigner for the ZCA exploring the formal and informal processes involved in the negotiation of the ZCA and NZETS reforms. Seventy-eight documents from the following sources were used to map the positions taken by different actors during the policy process and the main arguments used to justify their stances:

- Publications by organizations promoting the ZCA.
- Consultations and reports on the ZCA and ETR Bill, including government documents produced to accompany the ZCA consultation; submissions from industry, NGOs, and other groups and individuals; and analyses of consultation findings.
- Texts of the Bills and Supplementary Order Papers.
- Hansard records of the bills’ parliamentary readings.
- Redacted cabinet papers and regulatory impact analyses of measures to manage livestock and fer-

tiliser emissions; and industry submissions proposing alternatives to mandatory pricing of these emissions.

The final stage of research involved further scrutiny of previously analysed documents supplemented by analysis of more recent ministerial, business, and independent reports, consultations, and media analyses, including the New Zealand CCC’s advice to the government on the ZCA’s first three carbon budgets and reforms to the NZETS (Climate Change Commission [CCC], 2021). The goal was to gather a broader perspective on discussions and decisions on how to reform key elements of the NZETS to achieve compatibility with the requirements of the ZCA.

5. Policy Alignment Between the Zero Carbon Act and the New Zealand Emissions Trading Scheme

The following section analyses the main alignment activities and pressures that have occurred between the ZCA and NZETS and the political dynamics that have shaped attempts to resolve areas of tension. The section accordingly examines the ZCA’s impact on the main design features of the NZETS: emissions caps; allowance allocations and price controls; the use of international units; and the management of agricultural emissions and forestry.

5.1. Emissions Caps

Although net-zero emissions formed the backbone of the ZCA, the decision to adopt a split target between long-lived and short-lived greenhouse gases indicated early tensions between the ZCA’s intent to anchor other climate policies and the need to secure the support of the National Party and New Zealand First for the ZCA (New Zealand Parliament, 2019a). To achieve this, ZCA campaigners accepted the need for the ZCA to recognise the distinctive greenhouse-gas forcing characteristics of methane to protect agriculture from excessive costs even before the ZCA was drafted, though it was never intended to lead to a lower target (Bailey et al., 2021). However, even the split target failed to quell National Party concerns about the ZCA:

The primary area of difference...is in relation to the methane target. There is...no satisfactory basis for setting the targets in 2030 and 2050 as high as the Government has chosen to do...in terms of methane and agriculture...that change is literally in the last three, four, five years before [the first] target is to be met in 2030. (New Zealand Parliament, 2019b)

Despite these reservations, rejecting the ZCA target for methane would have been politically risky for the National Party given the strength of support for climate action across New Zealand. However, questions remained over how it would translate into NZETS

emissions caps. The government centred on establishing caps that would align the scheme with ZCA budgets, while the opposition focused on the effects of tighter caps on businesses and households during the Covid crisis:

The new cap on the ETS of 160 million tonnes of carbon dioxide...What does that mean for the price of fuel, electricity, and goods?...what that means for everyday New Zealanders in a post-COVID world...[who] have lost their livelihoods, is a completely different thing. (New Zealand Parliament, 2020b)

The passage of the ETR Bill nevertheless enabled the government to cap NZETS emissions in line with ZCA budgets. The CCC's advice, published in early 2021, of a carbon budget of 278 MtCO₂e for 2022–2025 represented a major reduction from New Zealand's current emissions and recommended a first ETS cap of 167 MtCO₂e to reflect this increased ambition (CCC, 2021). However, the anchoring pressures created by the ZCA were underlined further when a group of 300 climate-concerned lawyers launched a legal challenge against the CCC's budget, arguing that it represented an annual increase of 2 MtCO₂e from a provisional budget published in 2019 and was therefore inconsistent with the goals of the ZCA (McLachlan, 2021).

5.2. Allowance Allocations and Price Controls

The NZETS initially allowed 90% free allocation of NZUs to industrial facilities set against a 2005 emissions baseline, with no expansion for new entrants, and was scheduled for phasing out between 2019 and 2029. However, the 2009 reform adopted an "output-and-emissions-intensity" model that gave EITEIs between 60% and 90% free allocations with no overall quantity limit and the phase-out rate was slowed (Leining et al., 2019). Again, demonstrating the ZCA's anchoring effect, the ETR Bill introduced quarterly allowance auctions from March 2021 and an accelerated phase-down of industrial free allocations between 2021 and 2050 (New Zealand Parliament, 2019a). The National Party claimed that this placed sectors like steel, cement, and aluminium businesses at a competitive disadvantage internationally, while Labour Party argued that the NZETS was unworkable without lower free allocations (New Zealand Parliament, 2019a). However, the government's majority was sufficient for the measure to remain and for the ZCA to guide the redesign of this element of the NZETS.

Neither the ZCA nor the ETR Bill specifies upper or lower prices for NZETS allowances. Instead, the ZCA steers NZU prices indirectly through its target and carbon budgets. However, the ETR Bill requires the climate minister to set price controls for five-year periods informed by advice from the CCC on the prices needed to meet future carbon budgets (New Zealand Parliament,

2020b). It also influences NZU prices through rules preventing allowances from being auctioned at unacceptably low prices that might inhibit clarity on the profitability of low-carbon investments. The Commission's recommended floor price of \$30 tonne⁻¹ for 2022 (from \$20 tonne⁻¹ in 2021), followed by annual increases of 5% plus inflation to 2026, and a cost containment price of \$70 (from its \$50 2021 price), followed by annual increases of 10% plus inflation, again represented a major increase in price signals from those previously generated by the NZETS (Ministry for the Environment, 2021b).

5.3. International Units

The loss of access to international carbon markets in 2015 theoretically created an opportunity to introduce a permanent ban or limits on international units. However, the ZCA instead established the more malleable principle that emissions budgets must be met through domestic emissions reductions and removals *wherever possible*. There also remains an opening for the limited use of international units in the event of significant changes in circumstances that alter the basis of emissions budgets or affect New Zealand's capacity to meet emissions budgets domestically. In such circumstances, the ZCA requires the government to consult the CCC on whether overseas units are necessary to meet budgets or control the NZETS's economic impact. The government's proposal, published in April 2021, recommended a limit of zero international allowances between 2021 and 2026 to reduce a stockpile of Kyoto units accumulated when the NZETS was open to international trading (Ministry for the Environment, 2021b). The CCC nevertheless left the door open for international allowances by calling for New Zealand to adopt more ambitious emissions targets and by recognising that the pace of change in achieving targets through domestic action alone would have substantial social and economic impacts (CCC, 2021). However, it also stressed the need for international units purchased by New Zealand to have high environmental integrity.

5.4. Agriculture and Forestry

Of all the NZETS' provisions, the management of biogenic emissions from agriculture has arguably posed the sternest challenge to the ZCA (Inderberg & Bailey, 2019; Taylor, 2020). Agriculture was originally scheduled to enter the NZETS by 2013 but its inclusion was deferred indefinitely in 2012 (Inderberg et al., 2017). During a parliamentary debate in 2017, David Parker, the Labour minister who oversaw the NZETS's introduction in 2008, declared that: "If we are elected, agriculture will be coming into the ETS very fast. We have always said it should...[because it] will drive so much other change" (New Zealand Parliament, 2017). Cross-party support for the ZCA appeared to clear the way for negotiations on the issue but the Primary Sector Leaders Group remained wary of ETS pricing and submitted counter-proposals

for a sector-government agreement (*He Waka Eke Noa*) as its preferred route for reducing emissions and building capacity for pricing methane and fertiliser within (or outside) the NZETS (Primary Sector Climate Action Partnership, 2021).

Regulatory impact analysis by the Ministry for the Environment indicated that processor-level pricing of livestock and fertiliser emissions from 2021 offered better guarantees of meeting emissions targets because the Primary Sector Leaders Group agreement did not accept pricing unconditionally and lacked detailed costings (Ministry for the Environment & Ministry for Primary Industries, 2019a). A consultation in mid-2019 on a sector-government agreement and pricing farm-level livestock and processor-level fertiliser emissions from 2025 (potentially with processor-level pricing of both between 2021 and 2025) also showed support for pricing provided all on-farm emissions removals counted towards targets (Ministry for the Environment & Ministry for Primary Industries, 2019a). Ministerial briefings nonetheless advised the climate minister to reassure agricultural leaders that the government would introduce measures to alleviate the social impacts of emissions pricing (Ministry for the Environment & Ministry for Primary Industries, 2019b).

In October 2019, the Climate Minister sought cabinet agreement for processor-level livestock and fertiliser pricing in the ETS from 2021 to provide clear investment signals and comparable regulation to other sectors. He nevertheless acknowledged that loss of industry goodwill remained a threat if NZETS involvement was imposed and the cabinet opted to pursue the industry agreement while maintaining a schedule to introduce NZETS farm-level livestock and processor-level fertiliser pricing from January 2025. The measures also included 95% free allocation of NZUs to honour a coalition agreement with New Zealand First but retained provisions for processor-level pricing on livestock emissions from 2025 if farm-level pricing had not been implemented.

Although this compromise only changed the delivery mechanisms for the agricultural emissions component of the ZCA rather than its fundamental goals, the National Party voted against the ETR Bill, arguing that insufficient time was being allowed to assess the Bill's socio-economic implications. The government rejected this accusation, arguing: "Every time there is an economic downturn...the National Party says, 'Let's defer action on climate change'....I'm afraid...climate change does actually have a time frame" (New Zealand Parliament, 2020c). The government also rejected allegations of imposing solutions and stressed its partnership with the primary sector: "We trust farmers...that's why we've entered into a historic agreement with them" (New Zealand Parliament, 2020a). "I haven't been advised that they foresee any significant delay...because of Covid-19." (New Zealand Parliament, 2020c)

Forest carbon sequestration theoretically provides an alternative route to ease tensions between the ZCA

and NZETS through the generation of low-cost emissions reductions and new revenue streams for farmers who plant trees on their land. However, two main problems have hindered forestry's involvement in the NZETS. First, participation is voluntary for forests planted after 1989 but the \$25 price ceiling gave limited incentives to plant or retain forests and only 45% of eligible forests were registered in the NZETS in 2017 (Leining et al., 2019). Second, owners of pre-1990 forests incurred emissions liabilities if they harvested more than two hectares of non-exempt forest in any five-year period but could not receive NZUs for increasing forest stock (Carver et al., 2017).

Reforms to the NZETS since the adoption of the ZCA have sought to address these issues in three ways. First, the raising of the NZETS's cost containment reserve has increased financial incentives for afforestation and the CCC (2021) anticipates that a \$35 NZU price could encourage 1.1 million hectares of new forest plantation. Second, changes in carbon accounting rules have reduced deforestation liabilities. Third, owners of pre-1990 forests can now harvest and replant forest without liability, though they still do not receive additional NZUs for forest stock increases (Manley, 2020). Despite these attempts to build synergies between the ZCA and NZETS, other political concerns have been raised that increased planting on farmland could damage agricultural livelihoods and "devastate rural communities" (New Zealand Parliament, 2019c). The government has pledged to avoid this, but the issue's sensitivity was underlined by New Zealand First's insistence that the social impacts of forestry be considered if high carbon prices encouraged higher-than-projected new planting (New Zealand Parliament, 2020b). More structurally, the CCC (2021) has argued that overreliance on forests could divert action from emissions reduction in other sectors and make it more difficult to maintain net-zero beyond 2050. The long-term effects of these reforms remain to be seen but the example nevertheless highlights the potential for tensions to resurface where policy safety valves and alternative solutions are used to ease alignment pressures.

6. Discussion: Exploring Alignment Pressures

The adoption of the ZCA has challenged the NZETS's status as New Zealand's pre-eminent climate policy by establishing an overarching goal of net-zero emissions and new requirements and accountability mechanisms to guide the development of other New Zealand climate policies, including the NZETS. In so doing, the ZCA has triggered processes to transform the NZETS from a policy instrument that was vulnerable to "political whim" (Hall, 2020, p. 87) into a key delivery mechanism for the ZCA's goals (Hall, 2020, p. 87; Taylor, 2020). In keeping with the *anchoring-policy perspective*, the ZCA has succeeded in influencing many aspects of the NZETS, including its emissions caps, price controls, and rules for international units. More broadly, it has shifted the paradigmatic logic of New Zealand climate policy from one that prioritised

economic efficiency over-ambitious targets to the pursuit of net-zero emissions as a normative and practical goal (Inderberg et al., 2017).

Evidence of resistance to the anchoring pressure applied by the ZCA nonetheless necessitates and enables refinement of the *anchoring-policy/path-dependency framework* through reflection on the different approaches used by governments to navigate tensions between anchoring and SPs and their implications for the integrity of APs.

The first technique involves *pre-emptive concessions* to APs to avert potential threats. The split emissions target was a precondition for the National Party supporting the ZCA and was justified by evidence that stabilising short-lived methane emissions would help to prevent increases in atmospheric greenhouse-gas concentrations (Ministry for the Environment & Ministry for Primary Industries, 2019b). However, others contend that it has perpetuated uncertainty about the government's commitment to 1.5 °C because methane's potency and short lifespan mean that tighter methane targets would produce rapid atmospheric cooling (Hall, 2020; Taylor, 2020), while lower targets for agriculture may also increase burdens on other economic sectors (Leining et al., 2019).

The second is the *incremental adaptation* of other policies to ease alignment tensions, for instance, through the progressive reduction in free allowances for EITELs and periodic reviews of ETS price controls to ensure they remain consistent with emissions budgets but avoid imposing excessive costs on affected sectors. A third involves *hedging against uncertainties*, for example, through provisions allowing carbon budgets to be adjusted and increases in the use of international units if future circumstances impede New Zealand's capacity to achieve budgets through domestic action alone. Related to this is the use of *safety valves* to defuse inflammatory issues, in this case by retaining conditional access to international units and enhancing incentives for forest sequestration to help farmers meet emissions liabilities and access alternative revenue streams.

A fifth approach involves *deferring decisions* (or ignoring misalignments) to protect the integrity of the AP. This approach could be said to characterise the government's approach to agriculture, where the commitment to pricing biogenic and fertiliser emissions remains but decisions on the role of industry agreements and pricing methods have been adjourned until firmer evidence exists on the performance of alternatives to ETS involvement (Bailey et al., 2021).

A final strategy is to create and *utilise lack of prescriptiveness* (Christensen & Røvik, 1999) in the mechanisms APs use to influence SPs. The ZCA's authority rests mainly on general obligations and principles rather than detailed measures. The domestic net-zero target, carbon budgets, and the obligation to explain departures from the advice of the CCC could all be described as serving background roles for steering discussions on the NZETS while giving flexibility over how obligations are achieved.

One risk of such strategies to reduce alignment pressures is if APs degenerate into symbolic policies that give the appearance of action while being stripped of their anchoring capabilities. If, as our analysis indicates, AP–SP relationships are typified by tensions between anchoring and path dependency, it provides a reminder that CCAs are not unshakable: “Ultimately, the[ir] task is to create enduring legislation that translates international commitments into domestic goals that are implemented and achieved” (Taylor & Scanlen, 2018, p. 68). This can make them major targets during their negotiation and attempts to reform SPs that enjoy strong stakeholder and political support. Defence of their integrity ultimately rests on securing public, stakeholder, and political support for reforms, while another important factor holding the authority of climate APs together is the expectations of the Paris Agreement as an international AP for the ZCA and other national climate strategies.

Summing up, the various strategies identified above share the objective of managing political pressures that might otherwise lead to zero-sum games and policy polarisation. The anchoring-policy perspective's prediction that SPs will align with the requirements of APs provides plausible explanations of reforms to the NZETS's emission caps, allocation and price controls, and, to some degree, the use of international units. However, the factors influencing the ZCA's influence on agriculture and forestry are more complex and indicate the continuing influence of path-dependency dynamics. The ZCA has generated pressure to include biogenic and fertiliser emissions in the NZETS, but support for the land-use sector (organised through the Primary Sector Leaders Group and National Party) deflected the Labour-led government's ambition by pressing for the *deferral of a decision* on pricing agricultural methane and fertiliser emissions in the NZETS and proposing *alternative solutions* for reducing these emissions. The first illustrates the contribution of path-dependency perspectives to understanding the dynamics of AP–SP relationships where interests are well-defined and settled, though the ZCA's carbon budgets restricts the viability of this as a way of reducing alignment pressure in the long run.

The latter—alternative solutions—draws attention to the utilisation of *safety valves* as a political compromise to defuse tensions between APs and SPs, but also illuminates an analytical weakness in examining the anchoring potential of an AP through its relationship with a single SP. In this case, the anchoring effect of the ZCA on the NZETS remained uncertain during the analysis period but the ZCA has still generated momentum for alternative solutions beyond the scope of the ZCA–NZETS relationship. As such, the *He Waka Eke Noa* agreement does not corroborate the path-dependency contention that alignment tensions will create reverse pressure to adjust the AP; it simply indicates the potential opening of an alternative route. Pressure on the ZCA might accumulate if the implementation of the agreement raises doubts about the technological and economic feasibility

of reducing biogenic emissions, but the ZCA nevertheless retains the overall power to drive the development of other SPs.

The longer-term failure to meet targets for biogenic emissions would potentially be more damaging to the ZCA but the evidence to date indicates that the ZCA has increased pressure for reforms to the NZETS and shifted the wider dynamics of New Zealand climate policy. Unless it is dismantled at some point, its requirements are likely to continue to exert normative, discursive, and political pressure for more stringent climate policies even if these impacts remain difficult to quantify during its earlier stages.

7. Conclusions

This article has employed a novel framework to investigate how alignment pressures between CCAs and other climate policies are managed politically, the factors influencing how tensions between policies are navigated, and the implications of these tensions for CCAs as guiding frameworks for national climate mitigation policy. Analysis of the New Zealand government's attempts to align an established emissions trading scheme with a newly-introduced CCA, the ZCA, indicates that the ZCA's legal obligations, emissions targets, and scrutiny by an independent CCC have exerted strong anchoring effects during debates on reforms to the NZETS. However, resistance to some reforms led the government to use a range of techniques to reduce tensions, including: pre-emptive concessions, incremental adaptation of other policies, deferring decisions, policy safety valves, and lack of prescriptiveness in how the ZCA's goals should be achieved. The majority of these techniques are consistent with the AP's perspective that alignment pressures will lead mainly to the modification of SPs and that CCAs will generally withstand pressures, even where SPs enjoy strong political and stakeholder support. The main potential exceptions are if pre-emptive concessions erode the credibility of CCAs even before they are introduced or if deferring decisions leads to further concessions. Other risks include the possibility that policy safety valves and hedging provisions will be used later to reinterpret the core goals of CCAs.

Established theories of policy change have made important contributions to understanding how institutional processes, learning, policy entrepreneurship, and discursive processes can catalyse shifts in policy norms and practices. Anchoring-policy and path-dependency perspectives offer a useful complement to these theories by directing attention towards the political dynamics of relationships between policies and, in particular, the capacity of CCAs to influence the introduction and design of other climate policies through the specification of overarching premises and accountabilities. The distinctive changes in climate policy and politics created by CCAs remains an emergent area of investigation and further comparative analysis of how alignment tensions

between CCAs and other climate policies are managed in different political settings is essential to developing a fuller understanding of the politics of CCAs and their contribution to achieving decarbonisation goals.

Acknowledgments

We would like to thank the three anonymous reviewers and the thematic issue editors for their constructive input. The project was part-funded by Research Council Norway, FME Include, Grant No. 295704 and the project ETS DIFFUSION Grant No. 235618.

Conflict of Interests

The authors declare no conflict of interests.

References

- Aberbach, J. D., & Christensen, T. (2001). Radical reform in New Zealand: Crisis, windows of opportunity, and rational actors. *Public Administration*, 79(2), 403–422. <https://doi.org/10.1111/1467-9299.00262>
- Adelle, C., & Russel, D. (2013). Climate policy integration: A case of déjà vu? *Environmental Policy and Governance*, 23(1), 1–12. <https://doi.org/10.1002/eet.1601>
- Bailey, I. (2002). National adaptation to European integration: Institutional vetoes and goodness-of-fit. *European Public Policy*, 9(5), 791–811.
- Bailey, I. (2017). Spatializing climate justice: Justice claim making and carbon pricing controversies in Australia. *Annals of the American Association of Geographers*, 107(5), 1128–1143. <https://doi.org/10.1080/24694452.2017.1293497>
- Bailey, I., Fitch-Roy, O., Inderberg, T. H. J., & Benson, D. (2021). Idealism, pragmatism, and the power of compromise in the negotiation of New Zealand's Zero Carbon Act. *Climate Policy*, 21(9), 1159–1174. <https://doi.org/10.1080/14693062.2020.1868393>
- Bailey, I., & Inderberg, T. H. J. (2016). New Zealand and climate change. What are the stakes and what can New Zealand do? *Policy Quarterly*, 12(2), 3–12.
- Bertram, G., & Terry, S. (2010). *The carbon challenge: New Zealand's emissions trading scheme*. Bridget Williams Books.
- Boasson, E. L., & Wettestad, J. (2013). *EU climate policy. Industry, policy interaction and external environment*. Ashgate Publishing.
- Börzel, T. A., & Risse, T. (2003). Conceptualizing the domestic impact of Europe. In K. Featherstone & C. Radaelli (Eds.), *The politics of Europeanisation* (pp. 57–80). Oxford University Press.
- Bühns, T. (2008). Climate change policy and New Zealand's "national interest": The need for embedding climate change policy into a sustainable development agenda. *Political Science*, 60(1), 61–72.

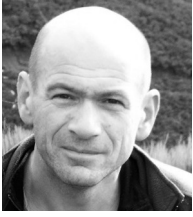
- Carver, T., Dawson, P., & Kerr, S. (2017). *Including forestry in an emissions trading scheme: Lessons from New Zealand*. Motu. https://motu-www.motu.org.nz/wpapers/17_11.pdf
- Casado-Asensio, J., & Steurer, R. (2016). Bookkeeping rather than climate policy making: National mitigation strategies in Western Europe. *Climate Policy*, 16(1), 88–108. <https://doi.org/10.1080/14693062.2014.980211>
- Christensen, T., & Peters, B. G. (1999). *Structure, culture, and governance: a comparison of Norway and the United States*. Rowman & Littlefield.
- Christensen, T., & Røvik, K. A. (1999). The ambiguity of appropriateness. In M. Egeberg & P. Legreid (Eds.), *Organizing political institutions* (pp. 159–180). Scandinavian University Press.
- Climate Change Commission. (2021). *Ināia tonu nei: A low emissions future for Aotearoa*. Wellington.
- Climate Change Committee. (2021). *Progress in reducing emissions: 2021 report to Parliament*. <https://www.theccc.org.uk/wp-content/uploads/2021/06/Progress-in-reducing-emissions-2021-Report-to-Parliament.pdf>
- del Río, P., & Cerdá, E. (2017). The missing link: The influence of instruments and design features on the interactions between climate and renewable electricity policies. *Energy Research & Social Science*, 33, 49–58. <https://doi.org/10.1016/j.erss.2017.09.010>
- Diaz-Rainey, I., & Tulloch, D. J. (2018). Carbon pricing and system linking: Lessons from the New Zealand emissions trading scheme. *Energy Economics*, 73, 66–79. <https://doi.org/10.1016/j.eneco.2018.04.035>
- Driver, E., Parsons, M., & Fisher, K. (2018). Technically political: The post-politics(?) of the New Zealand emissions trading scheme. *Geoforum*, 97, 253–267. <https://doi.org/10.1016/j.geoforum.2018.09.023>
- Eikeland, P. O., & Inderberg, T. H. J. (2016). Energy system transformation and long-term interest constellations in Denmark: Can agency beat structure? *Energy Research & Social Science*, 11, 164–173. <https://doi.org/10.1016/j.erss.2015.09.008>
- Fankhauser, S., Averchenkova, A., & Finnegan, J. (2018). *10 years of the UK Climate Change Act*. Centre for Climate Change Economics and Policy. https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2018/03/10-Years-of-the-UK-Climate-Change-Act_Fankhauser-et-al.pdf
- Fligstein, N., & McAdam, D. (2012). *A theory of fields*. Oxford University Press.
- Gillard, R. (2016). Unravelling the United Kingdom's climate policy consensus: The power of ideas, discourse and institutions. *Global Environmental Change*, 40, 26–36. <https://doi.org/10.1016/j.gloenvcha.2016.06.012>
- Graham, K. (2018). Cross-party collaboration on climate policy: The experience of GLOBE-NZ. *Policy Quarterly*, 14(1), 37–43. <https://doi.org/10.26686/pq.v14i1.4759>
- Hall, D. (2020). Rhetoric and reality in New Zealand's climate leadership. In R. K. W. Wurzel, M. S. Andersen, & P. Tobin (Eds.), *Climate governance across the globe* (pp. 82–100). Routledge.
- Hall, P. (1993). Policy paradigms, social learning, and the state: The case of economic policymaking in Britain. *Comparative Politics*, 25(3), 275–296. <https://doi.org/10.2307/422246>
- Inderberg, T. H. J. (2020). Centrally decentralising? Analysing key policies and pathways in Norway's electricity transitions. *Politics and Governance*, 8(3), 173–184. <https://doi.org/10.17645/pag.v8i3.2874>
- Inderberg, T. H. J., & Bailey, I. (2019). Changing the record: Narrative policy analysis and the politics of emissions trading in New Zealand. *Environmental Policy and Governance*, 29(6), 409–421. <https://doi.org/10.1002/eet.1868>
- Inderberg, T. H. J., Bailey, I., & Harmer, N. (2017). Designing New Zealand's emissions trading scheme. *Global Environmental Politics*, 17(3), 31–50. https://doi.org/10.1162/GLEP_a_00414
- Jordan, A., & Lenschow, A. (2010). Policy paper environmental policy integration: A state of the art review. *Environmental Policy and Governance*, 20(3), 147–158. <https://doi.org/10.1002/eet.539>
- Karlsson, M. (2021). Sweden's Climate Act—Its origin and emergence. *Climate Policy*, 21(9), 1132–1145. <https://doi.org/10.1080/14693062.2021.1922339>
- Kungl, G. (2015). Stewards or sticklers for change? Incumbent energy providers and the politics of the German energy transition. *Energy Research & Social Science*, 8, 13–23. <https://doi.org/10.1016/j.erss.2015.04.009>
- Leining, C., Kerr, S., & Bruce-Brand, B. (2019). The New Zealand emissions trading scheme: Critical review and future outlook for three design innovations. *Climate Policy*, 20(2), 246–264. <https://doi.org/10.1080/14693062.2019.1699773>
- Lockwood, M. (2013). The political sustainability of climate policy: The case of the UK Climate Change Act. *Global Environmental Change*, 23(5), 1339–1348. <https://doi.org/10.1016/j.gloenvcha.2013.07.001>
- Lockwood, M. (2021). A hard act to follow? The evolution and performance of UK climate governance. *Environmental Politics*, 30, 26–48. <https://doi.org/10.1080/09644016.2021.1910434>
- Mahoney, J., & Thelen, K. (2010). *Explaining institutional change. Ambiguity, agency, and power*. Cambridge University Press.
- Manley, B. (2020). Impact on profitability, risk, optimum rotation age and afforestation of changing the New Zealand emissions trading scheme to an averaging approach. *Forest Policy and Economics*, 116, Article 102205. <https://doi.org/10.1016/j.forpol.2020.102205>
- Matti, S., Petersson, C., & Söderberg, C. (2021). The Swedish climate policy framework as a means for climate policy integration: An assessment. *Climate*

- Policy*, 21(9), 1146–1158. <https://doi.org/10.1080/14693062.2021.1930510>
- McLachlan, R. (2021, July 6). Lawyers challenge New Zealand’s proposed emissions budgets as inconsistent with the 1.5 °C goal. *The Conversation*. <https://theconversation.com/lawyers-challenge-new-zealands-proposed-emissions-budgets-as-inconsistent-with-the-1-5-goal-162504>
- Ministry for the Environment. (2021a). *New Zealand’s greenhouse gas inventory 1990–2019*. <https://environment.govt.nz/assets/Publications/New-Zealands-Greenhouse-Gas-Inventory-1990-2019-Volume-1-Chapters-1-15.pdf>
- Ministry for the Environment. (2021b). *Proposed NZ ETS and Synthetic Greenhouse Gas Levy regulation updates 2021* (Consultation document). <https://consult.environment.govt.nz/comms/proposed-nz-ets-changes2021>
- Ministry for the Environment, & Ministry for Primary Industries. (2019a). *Reducing emissions from the agricultural sector: Regulatory impact assessment*. <https://environment.govt.nz/assets/Publications/ria-reducing-greenhouse-gas-emissions-from-agricultural-sector.pdf>
- Ministry for the Environment, & Ministry for Primary Industries. (2019b). *Fielddays meeting on climate change with the Primary Sector Leaders Group*. https://environment.govt.nz/assets/Publications/fielddays_meeting_on_climate_change_with_the_primary_sector_leaders_group.pdf
- Muinzer, T. (2020). *National Climate Change Acts: The emergence, form and nature of national framework climate legislation*. Hart Publishing.
- Muinzer, T. (2021). What are national “climate change acts”? *Journal of Energy and Natural Resources Law*, 39(4), 419–438. <https://doi.org/10.1080/02646811.2020.1855020>
- Nash, S. L., & Steurer, R. (2019). Taking stock of climate change acts in Europe: Living policy processes or symbolic gestures? *Climate Policy*, 19, 1052–1065.
- New Zealand Parliament. (2017). *Special debate: GLOBE-NZ—Report*. https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20170413_20170413_12
- New Zealand Parliament. (2019a). *Climate Change Response (Emissions Trading Reform) Amendment Bill—First reading*. https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20191105_20191105_16
- New Zealand Parliament. (2019b). *Climate Change Response (Zero Carbon) Amendment Bill—First reading*. https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20190521_20190521_12
- New Zealand Parliament. (2019c). *Climate Change Response (Zero Carbon) Amendment Bill—Second reading*. https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20191105_20191105_12
- New Zealand Parliament. (2020a). *Climate Change Response (Emissions Trading Reform) Amendment Bill*. <https://legislation.govt.nz/bill/government/2019/0186/latest/LMS143384.html>
- New Zealand Parliament. (2020b). *Climate Change Response (Emissions Trading Reform) Amendment Bill: Second reading*. https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20200602_20200602_20
- New Zealand Parliament. (2020c). *Climate Change Response (Emissions Trading Reform) Amendment Bill—In committee*. https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20200603_20200603_12
- Peters, B. G. (2019). *Institutional theory in political science* (4th ed.). Edward Elgar.
- Pierson, P. (2004). *Politics in time*. Princeton University Press.
- Primary Sector Climate Action Partnership. (2021). *He Waka Eke Noa*. <https://hewakaekenoa.nz>
- Russell, S. L., Greenaway, A., Carswell, F., & Weaver, S. (2014). Moving beyond “mitigation and adaptation”: Examining climate change responses in New Zealand. *Local Environment*, 19(7), 767–785.
- Swidler, A. (2001). What anchors cultural practices. In T. Schatzki, K. Knorr Cetina, & E. von Savigny (Eds.), *The practice turn in contemporary theory* (pp. 83–101). Routledge.
- Taylor, P. (2020). The New Zealand legislation. Pursuing the 1.5 °C target using a net zero approach. In T. L. Muinzer (Ed.), *National climate change acts: The emergence, form and nature of national framework climate legislation* (pp. 199–226). Hart Publishing.
- Taylor, P., & Scanlen, K. (2018). The UK Climate Change Act: An act to follow? *Policy Quarterly*, 14(3), 66–73.
- Wettestad, J., & Gulbrandsen, L. (Eds.). (2018). *The evolution of carbon markets: Design and diffusion*. Routledge.

About the Authors



Tor Håkon Jackson Inderberg is a research professor at the Fridtjof Nansen Institute outside Oslo, Norway. Key research interests include energy and climate policy and change. Inderberg is in the management group of the Include Research Centre for Socially Inclusive Energy Transitions and has published widely on different dimensions of decarbonisation and energy transitions, including renewables licensing, land-use planning, national energy strategies, digitalisation, and energy consumption.



Ian Bailey is a professor of environmental politics at the University of Plymouth, UK. His research specialisms include national climate and energy policy, the politics of carbon markets, and justice-based perspectives on renewable energy transitions. His work also encompasses community engagement on the deployment of marine renewable energy and he is an advisory member of the Devon Net Zero Task Force.