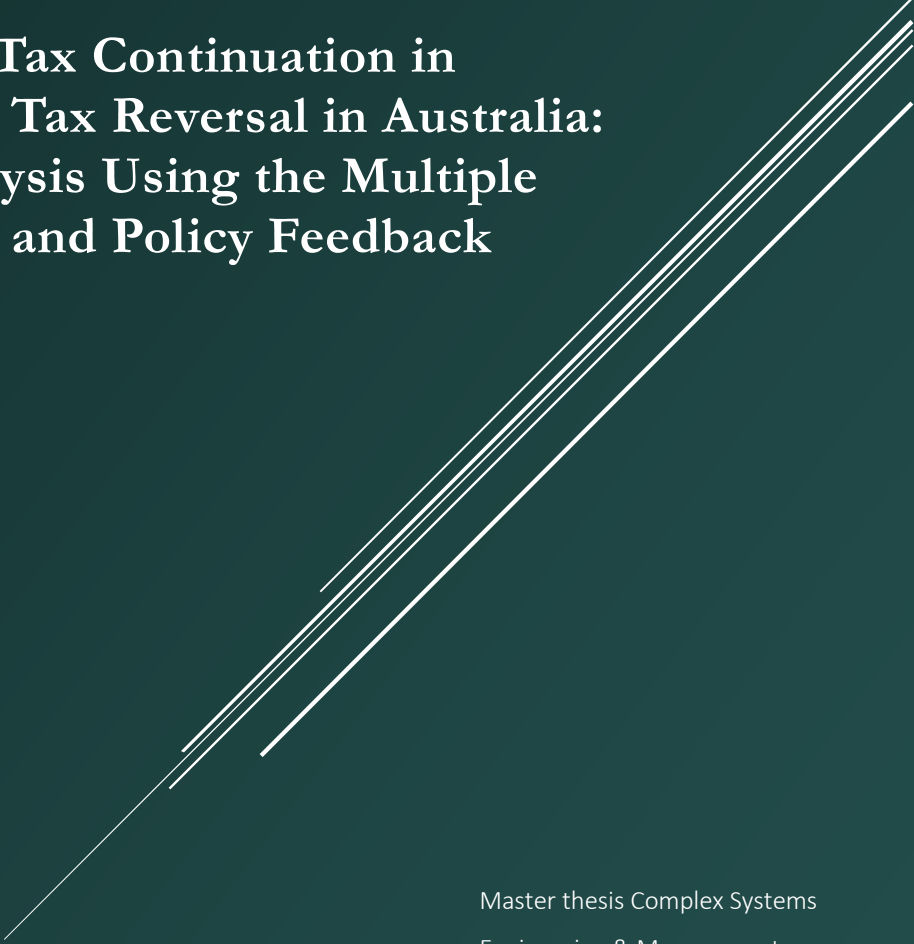


Explaining Carbon Tax Continuation in Sweden and Carbon Tax Reversal in Australia: A Comparative Analysis Using the Multiple Streams Framework and Policy Feedback Theory.



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Explaining Carbon Tax Continuation in Sweden and Carbon Tax Reversal in Australia: A Comparative Analysis Using Multiple Streams Framework and Policy Feedback Theory.

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Preface

This thesis concludes the MSc in Complex Systems Engineering and Management (CoSEM) program. The research described in this study was conducted between April and October 2021 at Delft University of Technology (TU Delft) under the supervision of associate professor Dr. Thomas Hoppe, assistant professor Dr. Sjoerd Zwart, and assistant professor Dr. Nihit Goyal in the department of Technology, Policy, and Management. I am grateful for their encouragement and assistance. Despite the fact that one is never done learning, the section that follows has been dedicated to briefly reflect on the journey that marks the end of my student life.

In good spirits and brimming with excitement I started working on my master's thesis in April 2021, a period captivated by the ongoing lockdown and the upcoming parliamentary elections. Despite the regulations, after six months of effort and motivation, I am proud and confident to state that I am completing my student days with a positive attitude and a feeling of gratitude. The latter specifically as I could not have achieved my current level of education without the advice, expertise, and effort provided by the academic staff — during both my bachelors and master. Throughout my master's degree at the TU Delft, I had the opportunity to pursue a variety of courses that piqued my interest. I am delighted that my thesis allowed me to integrate my interests climate change mitigation, policy dynamics and corresponding policy theory. From my point of view the right policies are essential to mitigate the effects of climate change as current economic activity continues to drive up energy demand.

Finally, I would like to convey my gratitude to my supervisors, who were crucial throughout this process, each of whom has provided patient advice and guidance. A specific word of gratitude goes to Nihit Goyal with whom I had the pleasure of engaging in weekly discussions in which we covered a variety of themes, varying from thesis-related topics to Dutch politics. Furthermore, I would like to thank Thomas Hoppe and Sjoerd Zwart, who made me reflect on the purpose of the methodology, terminology and relevance of the study multiple times. I would also like to express my gratitude to all of my fellow students. Discussing issues with you has always aided in the decision-making process. I also benefited from the intense debates with my family and friends. Even when I lost interest or track of my findings, you maintained my involvement.

Thank you all for your unwavering support.

Wino Carter

October 27th, 2021

Executive summary

Even though carbon tax policies are fundamental for low-carbon growth and energy-effective investments, empirical evidence shows that longstanding continuation of a carbon tax is not self-evident. The sheer complexity of carbon tax continuation is reflected by the adoption – and subsequent reversal – of the carbon tax in Australia. In July 2014, two years after implementation, the carbon tax was repealed by the right-wing coalition government led by Tony Abbott. Whereas Australia has a tumultuous relationship with carbon tax implementation, Sweden has been acknowledged for its longstanding carbon taxation policy to achieve cost-effective emission reduction. In 1991, Sweden was one of the first countries to implement a carbon tax and has since then been able to gradually increase tax levels per metric ton of carbon dioxide (CO₂).

This study aims to explain Sweden's continued carbon tax and Australia's carbon tax reversal. Given the broad breadth of this objective, this study focuses on the agenda-setting, formulation, adoption, and implementation phases of Sweden's and Australia's policymaking processes. Consequently, the following research question is formulated:

Main Research Question: What were the contributing factors within policy adoption and policy implementation of the carbon taxation in Sweden and Australia that led to the continuation of the first and the reversal of the latter?

A case study design is used to provide an in-depth explanation of Sweden's and Australia's carbon tax experiences. Within the broader definition of a case study, a contrastive (i.e., comparative) case study approach is used to contrast the policymaking process of two countries (i.e., Sweden and Australia) that share similarities in terms of industrialization, poverty levels, and governmental structure.

To structure the contrastive case study, two theoretical frameworks are utilized throughout the study. First, the Multiple Streams Framework (MSF) is used to explore the role of policy entrepreneurs in coupling problems, politics and policies during policy windows. Policy Feedback Theory (PFT) is used to identify policy feedback loops once the carbon tax is adopted or implemented. PFT differentiates between (1) resource and incentive effects and (2) interpretive effects. For this study both academic literature and gray literature are utilized. Gray literature is required to gain a better overview of the contextual events, processes and factors underpinning carbon tax experiences in Sweden and Australia, which is not possible when focusing solely on scientific literature that requires strict inclusion criteria.

Throughout the analysis phase of the study both qualitative coding, and causal process tracing techniques were used to systematically categorize excerpts in the data. Coding in qualitative research is the process of categorizing and organizing qualitative data in order to identify distinct themes and their relationships. Process tracing was used to reconstruct the policy-making process through time and to

ascertain whether and how a particular change or collection of changes was influenced by a possible cause or causes. Based on the comparative analysis, the following conclusions are identified.

First, it is evident that in Sweden, the broader tax reform in 1991 was an essential factor for the continued support for the carbon tax. In the end, the continued support was significant to guarantee political support from both right-wing and left-wing politics and its associated voters. Second, in terms of carbon tax design, this study showed that earmarking collected revenues for green spending does not guarantee success. Moreover, the analysis revealed that increasing the tax rate in a step-wise manner (starting with a relatively low tax rate) is a factor contributing to carbon tax continuation.

In line with the theoretical frameworks, for the case of Sweden, it is shown that through an effective policy design and policymaking process, the resource effects (allocation of benefits and burden) as described by the PFT allowed for further strengthening (continued coupling of the three streams of the MSF) of the initially formulated carbon tax policy.

In contradiction, the carbon tax in Australia was accepted during a period characterized by a fragmented political landscape and an increased divergence in perceptions towards the carbon tax among the public. Put differently, this study emphasizes the significant importance of civil society actors who not only bring policy problems to the forefront of public debate and encourage policy answers, but also support government decisions to pursue these once disclosed. Moreover, the reversal of the carbon tax in Australia highlights the critical nature of high-level political commitment to contentious policy issues – even ones with compelling evidence and precedence for implementation in analogous settings. Specifically, in Australia the carbon tax was politicized, disputed and subsequently used as tool to win the elections and control the government. Within the adoption phase of the policymaking process, the exclusion and discouragement of discussions between opponents and proponents of the carbon tax is a factor that contributed to the reversal of the carbon tax in Australia.

Considering the theoretical frameworks, this study showed how the design of the Australian carbon tax induced negative feedbacks through ineffective resource allocations and interpretive effects that negatively shaped the setting and condition in which the carbon tax policy was received by the public and policy makers. Throughout this study the use of both MSF and PFT proposed in this research has been validated in the context of carbon tax continuation in Sweden and carbon tax reversal in Sweden. In addition, this study demonstrates that it is likely to expand explanatory power by using both the MSF and PFT subsequently.

List of acronyms

Acronym	Description
NDC	Nationally Determined Contributions
COP21	United Nations Climate Change Conference
MSF	Multiple Streams Framework
PFT	Policy Feedback Theory
GHG	Greenhouse gas
CPRS	Carbon Pollution Reduction Scheme
CoSEM	Complex Systems Engineering and Management
CO ₂	Carbon dioxide
GCM	Garbage can model

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Chapter 1. Introduction

1.1 Combatting climate change through carbon taxes

Climate change is one of our generation's most important challenges. Without dramatic reductions in greenhouse gas emissions (GHG), catastrophic repercussions will ensue (Hoegh-Guldberg et al., 2018). The Intergovernmental Panel on Climate Change (IPCC) states, among other things, that climate change negatively affects the social determinants of human health (e.g., clean drinking water and sufficient food) and increases the likelihood of extreme weather events (e.g., more frequent and intense droughts, significant hurricanes, and heavy downpours) (Hoegh-Guldberg et al., 2018). When governments respond slowly to these problems, the economic ramifications will be greater than any other economic challenge the world has ever encountered (OECD, 2021). To address this challenge, 196 parties decided in 2015 at the United Nations Climate Change Conference (COP21) in Paris to renew their promises to combat climate change through the use of national determined contributions (NDCs) (Erickson & Brase, 2019). NDCs encapsulate each country's efforts to mitigate the effects of climate change and adapt to its consequences.

At the core of the NDCs are domestic policies that put a price on carbon emission to spur low-carbon growth and reduce GHG emissions. Among the policy options for carbon pricing, a carbon tax is recognized by economist and environmental economists as the most inclusive and cost-effective tool for meeting domestic emission reduction objectives (O'Mahony, 2020; World Bank Group, 2017). In essence, a carbon tax allocates the societal cost of burning carbon to the market and subsequently promotes a switch to energy effective fuels and low-carbon technologies (Institute for Climate Economics, 2016; Metcalf & Weisbach, 2009).

1.2 Diverging carbon tax experiences in Australia and Sweden

Even though carbon tax policies are fundamental for low-carbon growth and energy-effective investments, empirical evidence shows that longstanding continuation of a carbon tax is not self-evident (Carattini et al., 2018). Underlying this outcome is the idea that policy instruments such as carbon taxes “develop social lives of their own with dynamics that should be taken into account” (Voß & Simons, 2014). The sheer complexity of carbon tax continuation is reflected by the adoption – and subsequent reversal – of the carbon tax in Australia (Copland, 2020; Crowley, 2017). In July 2014, two years after implementation, the carbon tax was repealed by the right-wing coalition government led by Tony Abbott (Crowley, 2017). This event is often described as a significant political flashpoint, given that Australia became the first developed country in the world to repeal the implemented carbon tax, which represented a sharp contrast to the steady increase in global carbon taxation schemes (ICAP, 2021; OECD, 2014).

Whereas Australia has a tumultuous relationship with carbon tax implementation, Sweden has been acknowledged for its longstanding carbon taxation policy to achieve cost-effective emission reduction

(Andersson, 2019; Ministry of Finance, 2021). In 1991, Sweden was one of the first countries to implement a carbon tax and has since then been able to gradually increase tax levels per metric ton of carbon dioxide (CO₂) (Hammar & Åkerfeldt, 2011). As a consequence of the carbon tax, Sweden's carbon emissions have been declining for 30 years, while the economy has grown steadily. According to Hammar & Åkerfeldt (2011), the Swedish experience is of significant importance for countries with governments committed to reduce CO₂ emissions by means of a carbon tax.

1.3 Research objective

This study aims to explain Sweden's continued carbon tax and Australia's carbon tax reversal. Given the broad breadth of this objective, this study focuses on the agenda-setting, formulation, adoption, and implementation phases of Sweden's and Australia's policymaking processes. This study employs a contrastive case study approach to ascertain the similarities and differences between the policymaking processes as described above. Finally, comparing the two cases may shed light on Sweden's continuation and Australia's reversal of the carbon tax.

1.4 Academic relevance

This thesis adds to the scholarly literature on carbon tax policies in two ways. First, this study expands on the work of various scholars who have argued for treating policies as “travelling policies” that have a life of their own (Voß & Simons, 2014). Rather than focusing on only participants, one process or an isolated event, this study sheds light on the dynamical interplay of multiple factors that contribute to the continuation or discontinuation of existing carbon tax policies. Second, this thesis contributes to the existing literature on the Multiple Streams Framework (MSF) and Policy Feedback Theory (PFT) (see chapter 3 an elaborate description) and their possible added value in explaining various evolutions of existing carbon tax policies by explicitly comparing two policy outcomes — one of policy continuance with an overall favourable judgment and one of policy termination. In particular, the two theoretical frameworks' ability to explain carbon tax continuation and reversal is evaluated through their application.

1.5 Policy relevance

Although great strides in combatting climate change have been made, challenges remain and substantive GHG reduction instruments are necessary. Hence, carbon pricing instruments are required to reduce emissions of GHGs. Despite the urgency, globally, carbon tax applications differ in rates, success and scope. Thus, further comprehension of efficient carbon tax implementation is essential to ensure and facilitate large-scale coverage. Additionally, before developing any policy, it is critical to identify and analyse the factors that possibly impact the process of policymaking once the policies are considered. Whereas this study does not aim to directly generalise the findings to other cases, this study may aid in identifying the

advantages and disadvantages of various practices and inform our understanding of the conditions necessary for carbon taxes to continue. In the end, the findings could assist policymakers in determining the relative importance of variables such as social acceptance, political endeavor or addressing the urgency of climate change mitigation schemes. Moreover, identifying and comprehending the critical dynamics and processes that drive, steer, and sustain such transformations will be critical for policymakers worldwide

1.6 Alignment to the Complex Systems Engineering and Management program

This study examines a complex system that meets the criteria for a master's thesis in Complex Systems Engineering and Management (CoSEM). To begin, this study is embedded within the energy system, a complex sociotechnical system characterized by a sophisticated societal and global problem (i.e., climate change), interplay of (national and international) institutions and actors (i.e., households, industries and governments) with socially or economically diverging motivations. Within the energy system, efficient carbon taxes can be seen as an intervention that, when placed in the socio-technical system will improve the performance of the system by reducing carbon emissions in a cost-effective and inclusive manner. Nevertheless, there are a number of uncertainties regarding the promised benefits of carbon taxes. In the quest towards optimal carbon taxes both technical as societal elements are considered. When looking at the technical part of the carbon tax, the rate of taxation, the determination of the tax base (i.e., deciding which sectors or industries to tax) and revenue distribution are design variables to consider. The societal component of the carbon tax emphasizes, among others, public support and political endeavors. In conclusion, carbon taxes operate within the explicated complex socio-technical system and require both technical and social design considerations. Whereas it is acknowledged that the findings cannot be extended precisely to other cases (given the explorative nature of the study), this thesis does provide a set of policy recommendations that can be considered as system design options. In the end, these policy recommendations may serve as reference material for policymakers who intend to design sustained carbon tax policies. Hence, it is worthwhile to examine as part of a master's thesis in the CoSEM program

1.7 Thesis outline and research flow diagram

The thesis is divided into four phases, which are further subdivided into 10 chapters. Phase one sets the boundaries of the study and subsequently answers sub question 1. Phase two dives into the analysis of this study, referring to the investigation of the two selected cases. In phase three the results of the analysis are compared and subsequently answers sub questions 2 to 5. Finally in phase four the main research question is answered based on the information retrieved from phase three. Moreover, phase 4 goes into the limitations of the study and provides a set of suggestions for future research. Figure 1 presents the research

flow diagram (RFD) as explicated in the section above. The RFD gives a complete overview of the steps taken to answer the main research question.

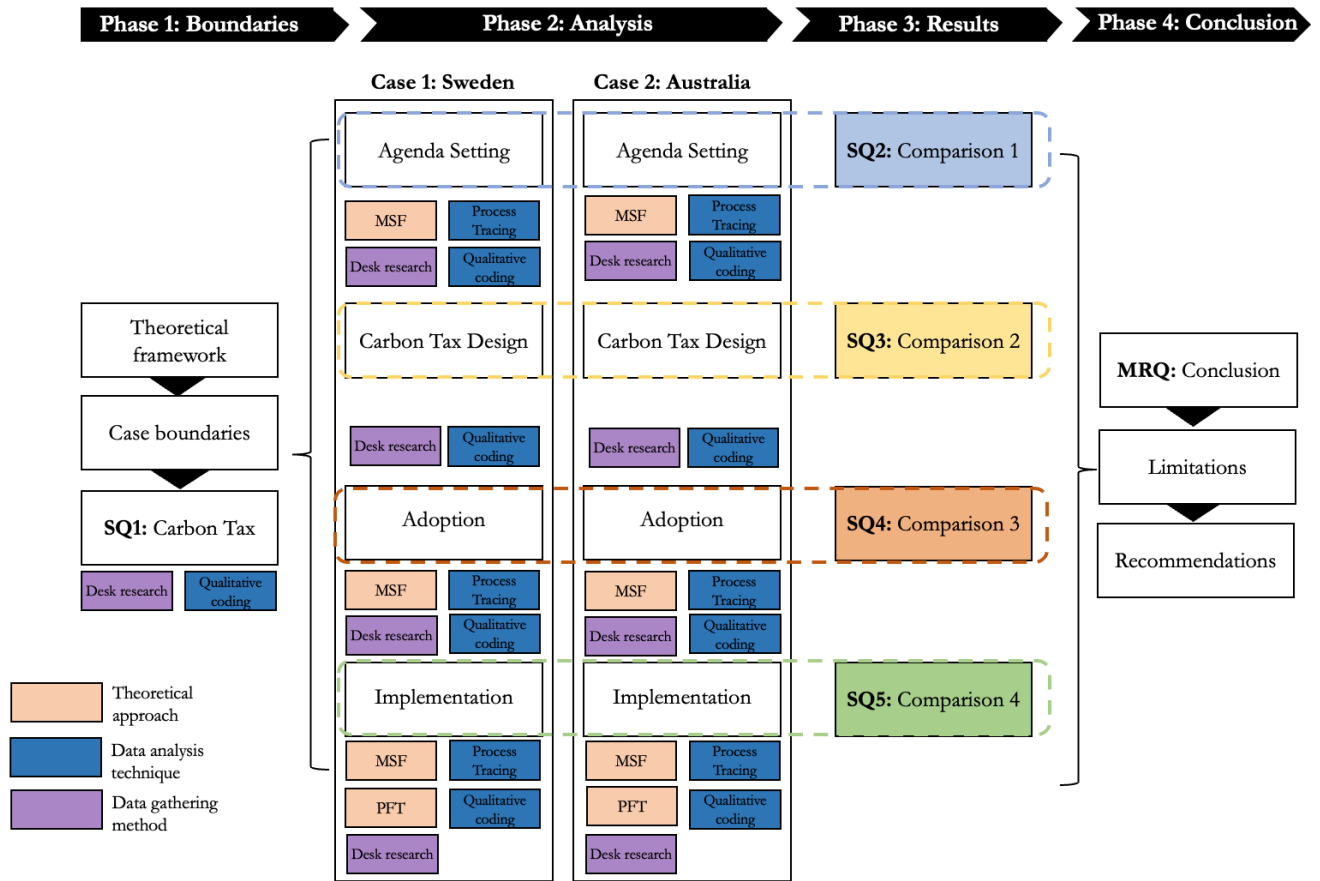


Figure 1: RFD underlying the study.

Chapter 2: Literature review

2.1 Introduction

In this chapter, the research gap that is addressed in this study is described, based on the literature review. First, section 2.2 presents the search strategy, search criteria and final selection of academic scholarship used in this chapter. Next, section 2.3 gives an overview of the factors that influence the policymaking process (i.e., continuation and reversal) of carbon taxes. Section 2.4 provides an overview of academic scholarship that examined the continuation of the carbon tax in Sweden and the reversal in Australia. Subsequently, section 2.5 presents the research gap based on the presented literature review. Finally, section 2.6 presents the research questions for this study.

2.2 Search strategy

To assist the literature review, two final search strings were entered in Scopus, Elsevier's abstract and citation database. The initial search query "carbon tax*" OR "carbon price*" W/1 (fall OR failure* OR repeal* OR reversal* OR continuation* OR accept* OR success* OR rise) returned 63 documents. The results were refined by restricting the search to the exact keywords "carbon tax," "taxation," and "pollution tax" and by using English as the primary language. 22 articles remained following the restriction. From there, titles, abstracts and conclusions were investigated to determine whether the articles delve into the factors underlying the continuation or reversal of a carbon tax. To complete the final selection of articles for the literature review, forward-and-backward snowballing was used to locate articles deemed relevant for the review.

In the second step of the literature review "carbon tax*" OR "carbon price*" OR (fall OR fail* OR repeal* OR revers* OR continuation* OR accept* OR success* OR rise) AND (Australia OR Sweden) was used as a search string to gain an overview of scholarship that has focused on the continuation of the carbon tax in Sweden and the reversal in Australia. The search query returned 86 articles, which were further pruned by limiting the search to the keyword "carbon tax", using English as the primary language and only focusing on academic papers in journals that were finalized. This search returned 13 articles. From there, the selection criteria as defined above were applied to gain relevant articles. In addition, forward- and backward snowballing was utilized to find articles considered relevant for the literature review. The latter was especially important as the number of relevant articles retrieved from the search query was rather low already implying a literature gap. Table 1 summarizes the articles reviewed.

Table 1: Overview of the academic literature used to substantiate the knowledge gap.

	Authors, year	Title
1	(Baranzini & Carattini, 2017)	Effectiveness, earmarking and labeling: testing the acceptability of carbon taxes with survey data
2	(Baranzini et al., 2014)	Economic Prescriptions and Public Responses to Climate Policy
3	(Carattini et al., 2018)	Overcoming public resistance to carbon taxes
4	(Copland, 2020)	Anti-politics and Global Climate Inaction: The Case of the Australia Carbon Tax
5	(Carl & Fedor, 2016)	Tracking global carbon revenues: A survey of carbon taxes versus cap-and-trade in the real world
6	(Criqui et al., 2019)	Carbon taxation: A Tale of Three Countries
7	(Dorsey-Palmeateer & Niu, 2020)	The effect of carbon taxation on cross-border competition and energy efficiency investments
8	(Higa et al., 2020)	Coalitions towards the carbon tax in the Swedish heating sector
9	(Savin et al., 2020)	Public views on carbon taxation and its fairness: a computational-linguistics analysis
10	(Klenert et al., 2018)	Making a carbon price work for citizens
11	(MacNeil, 2013)	Death and Environmental taxes: Why market environmentalism fails in liberal economies
12	(Rosenbloom et al., 2019)	Stability and climate policy? Harnessing insights on path dependence, policy feedback, and transition pathways
13	(Ryan & Micozzi, 2021a)	The politics of climate policy innovation: the case of the Argentine carbon tax
14	(Stern, 1994)	Environmental tax reform: The Swedish experience
15	(Yamazaki, 2017)	Jobs and climate policy: Evidence from British Columbia's revenue-neutral carbon tax
16	(Gianoli & Bravo, 2020)	Carbon tax, carbon leakage and the theory of induced innovation in the decarbonisation of industrial processes: The case of the Port of Rotterdam

2.3 Understanding why carbon taxes continue or discontinue

An increasing amount of research reveals that the continuance or discontinuance of carbon taxes is contingent upon a number of factors throughout the policymaking process. (Carattini et al., 2017; Criqui et al., 2019; Klenert et al., 2018; United Nations, 2020). Among the considerations are gaining political acceptance, improving tax revenue distribution, and instilling confidence in the government (Carl & Fedor, 2016; Criqui et al., 2019; Klenert et al., 2018; Yamazaki, 2017). Generally speaking, two academic disciplines have studied these challenges in relation to real-world cases.

First, political science scholarship often cites political trust and corruption levels as determinants correlated to lasting carbon taxes (Baranzini et al., 2014; Rafaty, 2018). Studies show that countries with a high level of governmental trust (i.e., a high proportion of people who express confidence in their government), such as Finland, Norway, and Switzerland, have been able to maintain long-standing carbon taxes including high tax rates (Baranzini et al., 2014; Rafaty, 2018). On the other hand, countries with widespread public distrust of politicians or perceptions of corruption lack effective climate policies, resulting in increased GHG emissions (Criqui, Jaccard and Stern, 2019). In addition, numerous scholars

in the field of political science examined the relationship between politics, public opposition to carbon taxes, and the sustainability of carbon taxes (Carattini et al., 2018; Criqui et al., 2019; Jagers & Hammar, 2009; Rosenbloom et al., 2019). Carattini et al. (2018) discovered, for example, that voters are frequently resistant to new taxes, even when they are intended to minimize environmental impact. These concerns are frequently raised by politicians who have sparked skepticism about the effectiveness of the carbon price, emphasizing its coercive nature and effects on low-income households. A study by Criqui et al. (2019) presented how, for the case of Canada, carbon taxes functioned as an alluring target for political adversaries. To be more specific, because suburban voters are more inclined to drive, initiatives, such as carbon taxes, that increase the price of fuel may be particularly unpopular with them. Consequently, carbon taxes may be used tactically by political parties to shape and affect the outcome of the Canadian elections. Overall, it is evident that research stresses the importance of investigating the bidirectional relationship between climate policy adoption and the political landscape (Ryan & Micozzi, 2021b).

The second academic field that studies the factors explaining carbon tax continuation or reversal is behavioral economics. The literature on behavioral economics literature distinguishes three determinants that influence the policymaking process for carbon taxes. First, researchers consider “labelling” (i.e., re-labelling a carbon price as a “carbon levy”) a means to increase the longevity of carbon taxes (Barranzini & Carattini, 2017). To be more specific, Barranzini & Carattini (2017) demonstrated, by means of a survey, that choosing a different label, such as “climate contribution” rather than “carbon tax”, might improve acceptability. In that same line, the study provided evidence that, if well-conceived and articulated, Swiss public may embrace somewhat ambitious energy and climate measures similar to those they rejected in 2000.

A second determinant is revenue distribution. Industries and citizens subjected to the tax, object if the state does not provide adequate services in exchange for carbon tax payments. Similarly, if the fiscal impact is perceived unjust, in the sense that the state receives more than industries and citizens receive in return, compliance will worsen (Savin et al., 2020; Yunis & Aliakbari, 2020). Third, carbon tax implementation is susceptible to carbon leakage, a shift in economic activities and investment configurations to other nations with fewer or no GHG constraints. This may result in a rise in their cumulative emissions (Dorsey-Palmateer & Niu, 2020; Gianoli & Bravo, 2020). Figuratively, the threat of carbon leakage and its economic and environmental consequences has held many legislations hostage to business as usual. In conclusion, the literature analysis demonstrates that managing a carbon tax is difficult, and that there are numerous aspects to consider throughout the policymaking process in order to design sustainable carbon taxes.

2.4 Carbon tax reversal in Australia and continuation in Sweden

Academic scholarship investigating the carbon tax repeal in Australia is lacking. The existing literature focuses on isolated elements of the repeal, such as political hurdles or the role of actors involved in the carbon tax policy making process. For example, Ike (2020) conducted a quantitative study in which the role of veto-players in developing the carbon tax policy in 2011 and its repeal in 2014 is analyzed. The study showed that policy repeal occurred in a “dramatic” rather than “incremental” fashion due to a small number of veto actors who exhibited high group cohesion and ideological congruence. In conclusion, the results of the study showed that few veto actors could easily execute drastic policy-making and easily halt effective policy and challenges, thus challenging the assumption that many veto actors hinder effective policy change.

Copland's (2019) study attributes the tax reversal to “anti-politics”, the process of framing carbon tax as a policy that benefits a new class of liberal elites at the expense of working people. It was argued that the Australian conservatives used anti-politics to oppose the Clean Energy Package, which included the carbon tax. MacNeil (2016) also examined this framing process, albeit from a different perspective. The study reveals that in Australia, a liberal-market economy, employees are less protected from the market, and the consequences of globalization have a direct impact on their earnings and public services. This open market environment fosters anti-tax politics. Additionally, MacNeil argues that Australia's carbon-intensive lifestyles and the resulting power of the fossil fuel lobby assist presenting climate policy and carbon prices as onerous costs on households.

Similar to the Australian case, the carbon tax experience in Sweden has received little attention by the existing academic scholarship. The studies that do exist are primarily concerned with isolated elements, with scant attention paid to time dynamics. For example, Sterner (1994) identifies a single crucial focal moment as a determinant in sustaining widespread approval of the carbon tax. The tax reforms were cited as a catalyst for the acceptance of energy tariffs as a means of increasing government revenue.

Jagers, Martinsson and Matti (2019) specifically looked at the perceptions of carbon tax distributions in Sweden. More specifically, Jagers et al (2019), performed a large-scale randomized survey experiment for the case of carbon taxes on petrol in Sweden. The results of the study indicate that the perceptions of carbon tax revenue distribution are linked to ideological backgrounds. Whereas a context dominated by right-wing individuals prefers a compensation scheme for increased taxes, a context dominated by left-wing individuals does not expect compensation in return for increased support of the tax.

A study by Higa, Cuhna and Selveira (2020) looked into the policy making process prior (1980-1991) to the carbon tax in the district heating sector specifically. By means of the Advocacy Coalition Framework (ACF), the study showed how the carbon tax was formulated within a setting, including opponents and proponents. Specifically, the findings of the study revealed that the two groups of policy actors involved in the carbon tax discussion shared similar opinions, producing two opposed coalitions. Additionally, they observed that the expansion of bioenergy was a major subject of controversy for

supporters and opponents. The controversy could be resolved through a broad and consistent discourse involving both existing and new participants. In the end, despite possible opposition from established constituencies, the study emphasized that countries can advance climate policies by pursuing internal synergies and experimenting with novel policy designs.

2.5 Research gap

Based on the literature review as presented in sections 2.3 and 2.4, two research gaps are identified. First, existing academic scholarship explaining the carbon tax continuation in Sweden and the carbon tax reversal in Australia is scant, and when available, it is frequently dispersed across multiple strands of scholarship. Moreover, current literature primarily focuses on either participants or isolated processes of the policymaking process (Copland, 2020; Higa et al., 2020; Ike, 2020; MacNeil, 2013; Sterner, 1994). These studies resulted in analyses that lack possible integration of the above-mentioned factors (sections 2.3 and 2.4) contributing to the carbon tax policymaking process. Few studies have gone beyond the passive, static and bounded characteristics of the carbon tax, and looked at the interplay between multiple socio-technical and political factors (e.g., political elections, carbon tax oppositions and climate change perceptions) at different times during the policymaking process. This integration is necessary to provide a more detailed and complete explanation of factors contributing to the carbon tax continuation and repeal over time. Second, limited attention is being paid to the role of implemented policies on the political landscape, that in return shape existing or future policies. This process is also defined as policy feedback processes. Despite recognizing these policy feedback processes in response to the implementation of climate policies, the existing literature integrating the bidirectional relationship in real-life case studies is scarce. In conclusion, the existing literature is deficient in providing a coherent and comprehensive account of the policymaking process and the mechanisms underlying the observed differences in experiences.

2.6 Research questions

Research questions are developed in order to meet the study's objective (as described in section 1.3) and to explore the research gap as explicated above (2.5). Responding to these questions provides the necessary knowledge to complete the study aim. The following main research question is presented in light of the study objective:

Main research question: What were the contributing factors within policy adoption and policy implementation of the carbon taxation in Sweden and Australia that led to the continuation of the first and the reversal of the latter?

In turn, five sub-questions are formulated to answer the main research question. In the next section the rationale behind the formulated sub questions is addressed. First, before delving into the various steps of both countries' carbon tax policymaking processes, it is necessary to have a general understanding of carbon taxes. A more holistic understanding is vital for understanding elements and design concerns (e.g., revenue distribution and tax base) that contribute to the unique characteristics of each carbon tax in the selected countries. In addition, the output of sub question 1 is utilized as input for sub question 3. The necessity of this initial step raises the following question:

Sub question 1: What does a carbon tax entail and how does a carbon tax as a policy mechanism work?

Following this initial inquiry, the various stages of the policy making process are evaluated. To begin, the agenda-setting phase is examined by means of the MSF. The MSF offers a detailed examination of the procedures that ultimately raised carbon taxes to the top of both governments' agendas. In order to accomplish this, sub question 2 was formulated:

Sub question 2: What are the key similarities and differences between the Swedish and Australian carbon tax when reflecting on the agenda-setting process?

With a firm grasp of the agenda-setting phase in place, it is critical to examine the policy design of the carbon tax designs in both countries. Having a clear overview of the specific policy designs is important to understand how the adopted carbon taxes are, for example, accepted by the public, used by politicians or affecting the industries competitiveness. Due to the necessity of this step, the following question arises:

Sub question 3: What are the key similarities and differences between the Swedish and Australian carbon tax in terms of policy design?

Thereafter, the adoption and implementation phases are analyzed. Whereas sub question 1 utilizes the MSF to analyze the agenda-setting phase, the MSF is extended to the adoption and implementation phase to look at possible dynamics between problems, politics, policies and policy entrepreneurs from the point the carbon taxes are adopted. Consequently, the following question is formulated:

Sub question 4: What are the key similarities and differences between the Swedish and Australian carbon tax in terms of adoption?

Finally, this study investigates the similarities and differences between the implementation of the carbon taxes in both countries to complete the contrastive case study. Throughout this quest, PFT is utilized to determine whether feedbacks were apparent in the wake of the implemented carbon tax. Thus, the final sub question is:

Sub question 5: What are the key similarities and differences between the Swedish and Australian carbon tax in terms of implementation?

Chapter 3. Theoretical framework

3.1 Introduction

Chapter 3 introduces the MSF and PFT (figures 2 and 3), two theoretical lenses employed to unfold the stages of the carbon tax policy in Sweden and Australia. Paragraph 3.2 traces the origin of the MSF and defines the historical context in which Kingdon developed the MSF as a tool to analyze and understand agenda-setting. The same paragraph explicates how the flexible nature of the MSF led to ongoing applicability and relevance to nearly any place, time, or policy. Paragraph 3.3 presents the structure of the MSF, its main elements and the associated characteristics. Paragraph 3.4 elaborates upon the specifics of PFT. Finally, paragraph 3.5 concludes with the rationale for using both the MSF and PFT.

3.2 Kingdon's Multiple Streams Framework as an interpretation of the Garbage Can Model

In his foundational work, *Agendas, Alternatives, and Public Policies*, Kingdon (1984) presents the genesis of the MSF as a means to understand public policy agenda setting within the fragmented political system of the United States (Kingdon, 1984). Kingdon's (1984) original outline of the MSF in the health and transportation policy draws on Cohen et al's (1972) 'garbage can' model (GCM) of organizational choice, which rejects the idea of a linear decision-making process in large organizations ("organized anarchies") as preferences and technology are unclear, and actor participation is fluid. (Cairney, P., & Zahariadis, 2016).

Compared to other policy change theories, Kingdon showcased the conceptual strengths of the MSF by clarifying the presence and influence of policy entrepreneurs. Another strength stems from its uniqueness in not only describing relationship between policy issues and their environment, but also exploring causal linkages between variables that give rise to a particular policy's adoption (Weiner, 2011).

The explorative strengths of the MSF did not go unnoticed by policy scholars. In recent years, the MSF has taken off in a growing number of studies varying in level of governance and policy area. (Cairney, P., & Zahariadis, 2016; Cairney & Jones, 2016; Cooper-Searle et al., 2018). The rise in published literature is attributed to the metaphorical abstraction in the framework's components, its inclusiveness of common policy process elements (from agenda-setting to policy implementation), and low "barriers to entry" (Huber-Stearns et al., 2019). Due to these universal elements and the robust trajectory of theoretical development, the MSF has been foundational in developing key strands of policy theory in more than "65 different countries, at five levels of governance, across 22 different policy areas and conducted by researchers spanning the globe" (Cairney & Jones, 2016, p.30). To date, Kingdon's MSF, further developed by Zahariadis and Herweg et al. (2017) remains one of the most influential and heavily cited approaches to study public policy (Huber-Stearns et al., 2019; Jones et al., 2016).

3.3 The Structure of the MSF

The MSF consists of five core elements: problems, politics, policies, policy windows, and policy entrepreneurs (Kingdon, 1984). Problems, policies and politics are typically defined as three largely independent streams, each including their unique set of activities, associated behaviors and involved actors. Remaining are contextual or structural ‘policy windows’, in which policy change may be adopted, and ‘policy entrepreneurs’, a term coined by Kingdon to describe actors who use policy windows to advance their policy goals (Jones et al., 2016). The following section provides a brief description of each of the five elements (Jones et al., 2016). The section that follows gives a brief description of each of the five elements.

1. The Problem Stream

The problem stream contains conditions that have been labeled as problematic (Kingdon, 1995). In essence, problems are conditions that are considered something for which one should take action. In other words, problems are not objective realities; they are subjectively described by someone. (Kingdon, 2003). Conditions transform into problems by policymakers through several pivotal operational subcomponents including “focusing events” (e.g., natural disasters or strikes), indicators (e.g., data, historical comparisons and statistical reports) and feedback channels (e.g., media and public deliberation) (Kingdon, 2003).

2. The Political Stream

The political stream consists of the institutional setting, cultural context and the political processes (e.g., swings in national mood, pressure groups, legislative politics etc.) that motivate policymakers to focus on specific problems and possible solutions for the agenda (Béland & Howlett, 2016; Cooper-Searle et al., 2018; Storch & Winkel, 2013; Weiner, 2011).

3. The Policy Stream

The policy stream contains a collection of policy ideas, alternatives or proposal, developed in policy communities which may or may not solve the problem at stake (Kingdon, 1984). Metaphorically, the policy stream involves a circulation of ideas and possibilities, which, develop, refine and either discard or endorse solutions through an iterative process of modification, reconsideration and softening (Cairney & Jones, 2016). The survival of an idea can be attributed to four factors including the technical feasibility, implementability, resource adequacy and value acceptability (Cooper-Searle et al., 2018; Jones et al., 2016).

3.4 Origins of Policy Feedback Theory

The contemporary literature on the PFT builds on the seminal work of Schattschneider (1935), Lowi (1964), Heclo (1974) and Wilson (1973), who observed that, over time, previously enacted policies shape future political behavior, and consequently affect policy development. Traditionally, research has primarily focused on mechanisms that induce positive feedback outcomes and policy trajectories driven by self-reinforcement (Campbell, 2012; Daugbjerg & Kay, 2020; Fernández & Jaime-Castillo, 2013). Yet, since the publication of these first studies, PFT literature has made great strides and witnessed an expansion in diverse and detailed scholarship varying in methodological, theoretical, and empirical standpoint (Béland, 2010, 2019).

For example, considerable literature has been developed around the influential work of Pierson (1993) who investigated mechanisms that drive policy feedback. In particular, scholarship differentiates between (1) resource and incentive effects and (2) interpretive effects (Pierson, 1993). Under 1, a policy is either supported or rejected as a response to resource distributions that have a politically important effect on the positions of interest groups, government elites, and individual social actors (Rosenbloom et al., 2019). Under 2, the effects can either positively or negatively shape the setting and condition in which the policy is received by the public and policy makers (Daugbjerg & Kay, 2020). Put differently, policies, in this view, can arouse specific interests by presenting problems in specific ways. In the end, implemented policies can thus have a role in establishing and constituting the political identities of the groups they affect through framing (Rosenbloom et al., 2019). In this study, policy feedback is analyzed through the described two stages, as shown in figure 3.

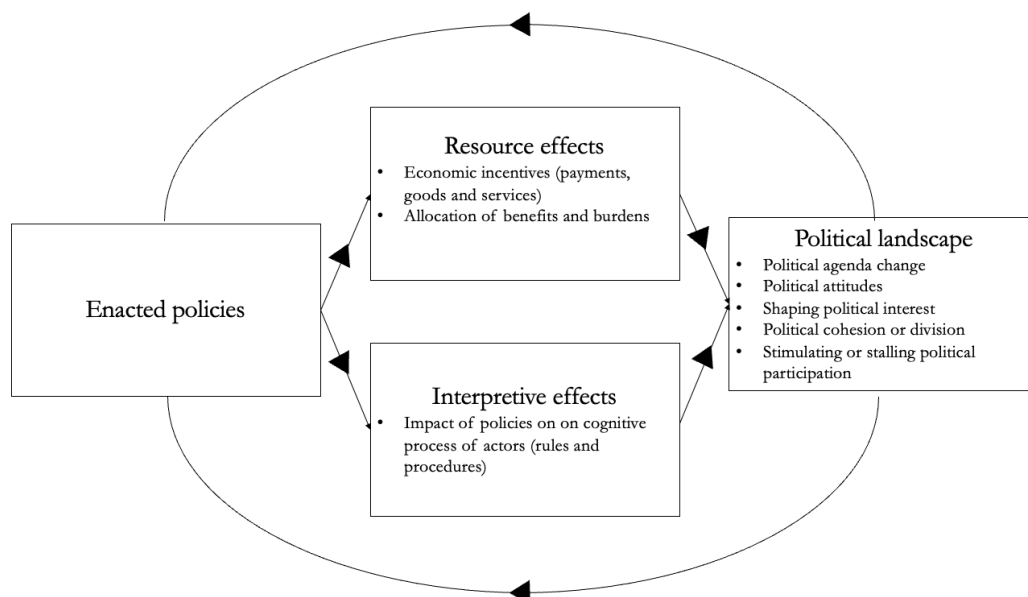


Figure 3: A schematic overview of the PFT with its core variables.

In addition, current policy feedback literature has not only studied positive but also negative feedback cycles. In the literature, positive feedback is described as a self-reinforcing process that accentuates enacted policies, which make successful policy outcomes more likely (Béland, 2010; Pierson, 1993). Contrarily, negative feedback, rather than reinforces, weakens policies and may contribute to the removal of an ineffective policy instrument and its replacement by an alternative (Moore & Jordan, 2020). For example, an implemented policy may be constrained by latent but gradually increasing fiscal commitments, which in subsequent rounds, mobilize groups around its reversal (Rosenbloom et al., 2019). According to Daugbjerg and Kay (2020), negative feedback does not solely induce disadvantages as their presence encourages flexibility in dealing with changing circumstances. In other words, negative feedback potentially reforms existing policy to maintain the support or the underlying idea of policy given changes in time and in the policy environment (Daugbjerg & Kay, 2020).

Alternatively, in recent years, an increasing number of studies have investigated the interaction of both positive and negative feedback loops throughout the policy process (Moore & Jordan, 2020). This interaction is often induced by the complexity of public policy making, affecting different components of the same public policy (Moore & Jordan, 2020). Overall, the literature emphasises that public policy must be viewed in two ways: as a result of politics and as a force that shapes political actors, organizes political understandings, and organises political relationships.

Another contribution of the PFT scholarship stems from the concept of the ‘excluded middle’ that emphasizes that not all politics is related to the expansive concept of PFT. That is, policies may also emerge without the existence or influence of previously determined policies.

3.5 Justifying the use of the Multiple Streams Framework and Policy Feedback Theory

The justification for selecting the MSF and PFT for this research is based on several arguments. First, the policymaking process of carbon taxes operate on the intersection of economics, environmental economics, environmental science and politics. Furthermore, the policymaking process is subject to various variables such as public acceptance, political anticipation and industry involvement. Hence, it is argued that outcomes of the process may be unclear and subject to change over time. To deal with these contingencies, the MSF is cited as the preferred approach when studying policy making under conditions of complexity, ambiguity and contingency (Goyal, 2021). In addition, the MSF has proven to be a valuable tool in providing “ex-post interpretation of the origins of climate policies” (Cooper-Searle et al., 2018, p.53).

Second, as described in the literature review (chapter 2), the policymaking process of carbon taxes is difficult. The MSF captures this complication of policymaking. Rather than attempting to describe the policy process rationally or linearly (i.e., in one dimension), the MSF sheds light on the dynamic interplay between problems, prospective solutions, politics, and policy entrepreneurs within windows of opportunity

(Cairney & Jones, 2016). In other words, the MSF is helpful in explaining why some policy measures succeed in capturing policymakers' attention and finally become policy, while others fade (Béland & Howlett, 2016). This function of the MSF is especially important in this study to uncover the procedure behind the carbon tax emergence in Sweden and Australia.

Third, The MSF can be extended to not only analyze agenda-setting — as initially proposed by Kingdon — but also the adoption and implementation phase of the policy making process (Fowler, 2020). This could be important as favorable policy windows may open for a variety of reasons and at varying times, emphasizing the critical role of policy entrepreneurs in coupling a novel policy solution to a problem and mobilizing political support.

Policy Feedback Theory (PFT) is the second theoretical framework used to understand how public policies shape politics (Pierson, 1993). Specifically, PFT is applied to analyze the possible emergence of (positive or negative) feedback processes following carbon tax implementation in both countries. The PFT is critical since the MSF treats policy as the result of politics and does not operationalize public policies as input for political processes (Pierson, 1993). For this study specifically, the PFT is argued to be of critical importance as literature has emphasized the effects of resource allocations (i.e., revenue distribution) as a consequence of carbon taxes. PFT accounts for these effects by focusing on both resources and interpretive effects (see section 3.4). In the end, this might have implications for future policymaking, hence creating feedback processes (Larsen, 2019). In conclusion, whereas, the MSF emphasizes the role of the policy entrepreneur, the PFT focuses on the actors who are affected by the policy (Heikkilä & Cairney, 2018).

This study proposes that these approaches can be used in conjunction to describe the fundamental dynamics of the diverging carbon tax experiences over time. While the MSF has a major emphasis on the political elements that influence policy change, the PFT examines the role adopted policies on the political landscape. Finally, utilizing both theories enrich our understanding of the circumstances that contributed to the carbon tax's continuation and reversal. Furthermore, this study argues that complementing policy frameworks enables greater attention to a broader range of forces that move policymaking processes toward or away from progressive carbon tax programs. For clarification purposes, figure 4 and figure 5 present how the two approaches are used in conjunction to explore the different carbon tax policymaking processes.

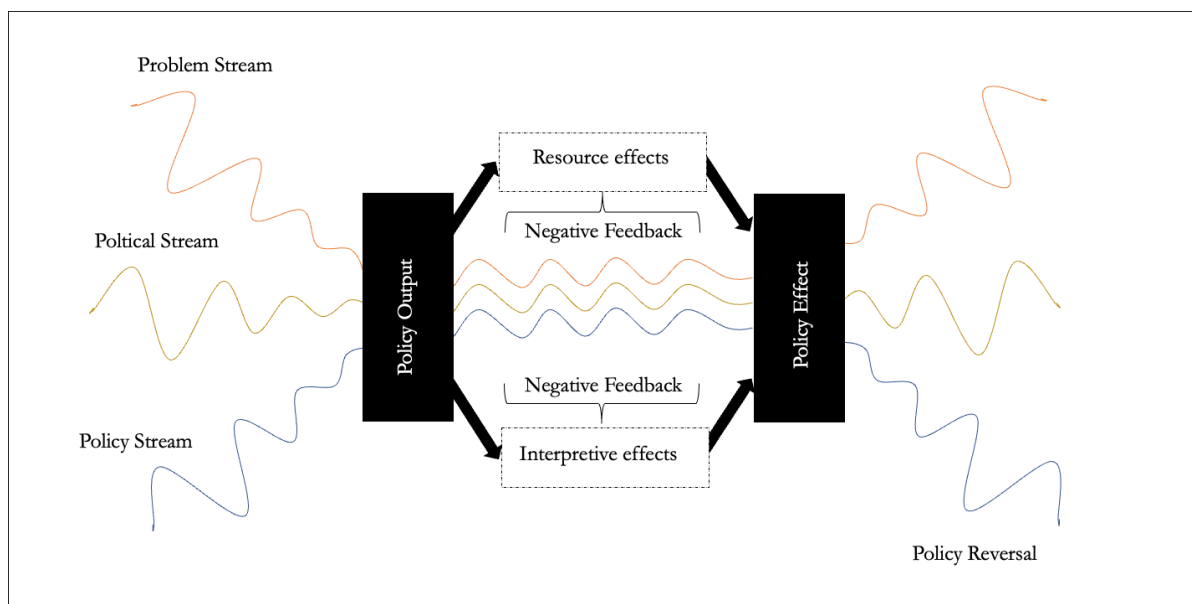


Figure 4: Schematic overview of the relationship between the MSF and the PFT used in this study. The figure showcases how negative policy feedbacks (i.e., resource and interpretive effects) triggers policy reversal (i.e., decoupling of the streams) for an adopted policy over time as a policy effect.

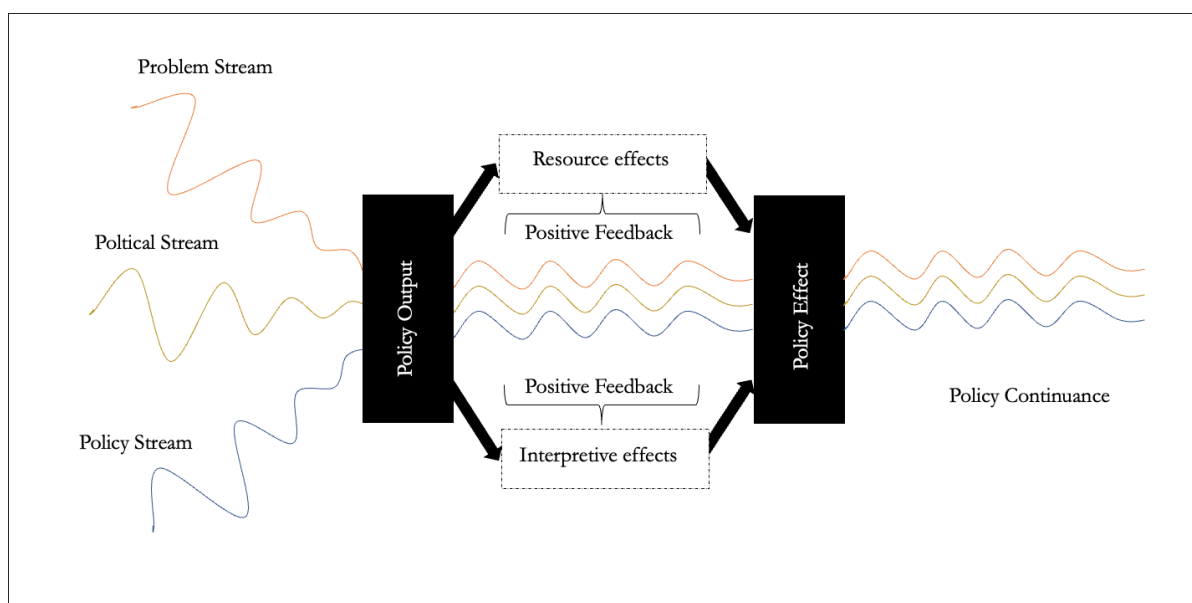


Figure 5: Schematic overview of the relationship between the MSF and the PFT used in this study. The figure showcases how positive policy feedbacks (i.e., resource and interpretive effects) triggers policy continuance (i.e., continued coupling of the streams) for an adopted policy over time as a policy effect.

Chapter 4. Methods and materials

4.1 Introduction

Chapter 4 presents the methods and materials used in this study. First, section 4.2 presents the research approach. Subsequently, section 4.3 dives into the rationale for selecting the two cases. Section 4.4 briefly describes the temporal boundaries for the study. Section 4.5 explicates the data collection techniques and corresponding treatment. Section 4.6 then elaborates on the coding approach utilized in this study and describes how the theoretical terminology (as described in Chapter 3) is followed. Section 4.7 describes the process tracing approach in the corresponding validity checks. Finally, section 4.8 explicates how the validity of this research is guaranteed.

4.2 *Contrastive* case study approach

A contrastive case study design is used to provide an in-depth explanation of Sweden's and Australia's carbon tax experiences. Case studies, in general, are well-suited to research topics in which the boundaries between the phenomenon (the case) and the context are obscure, as is the case with both the Swedish and Australian carbon tax experiences (Crowe et al., 2011; Yin, 2012). In other words, case studies are well suited for in-depth understanding of multi-faceted phenomena in its real-life context. Within the broader definition of a case study, a *contrastive* (i.e., comparative) case study approach is used to contrast the policymaking process of two countries (i.e., Sweden and Australia) that share similarities in terms of industrialization, poverty levels, and governmental structure.

The rationale for choosing the contrastive approach is as follows. By contrasting the two cases, similarities and differences between specific elements of the Swedish and Australian carbon tax policymaking processes can be identified. These similarities and differences may help to explain why carbon tax experiences vary. For instance, if the study identifies a complete overlap between Sweden's and Australia's adoption phase, one could argue that this is not a factor contributing to Australia's reversal. Conversely, if this study indicates a difference in the adoption phase, it could be argued that this difference contributes to the disparate outcomes of Sweden and Australia's carbon tax. The rationale for the contrastive case study is illustrated in figure 6, which demonstrates the dynamics of the policymaking process in both cases. The figure shows that for two cases that are regarded similar in terms of industrialization, poverty levels, and governmental structure different processes lead to the diverging outcomes. By identification and comparison of the factors in both scenarios, one may deduce contrasting processes that explain the continuation of the carbon tax in Sweden and the reversal in Australia.

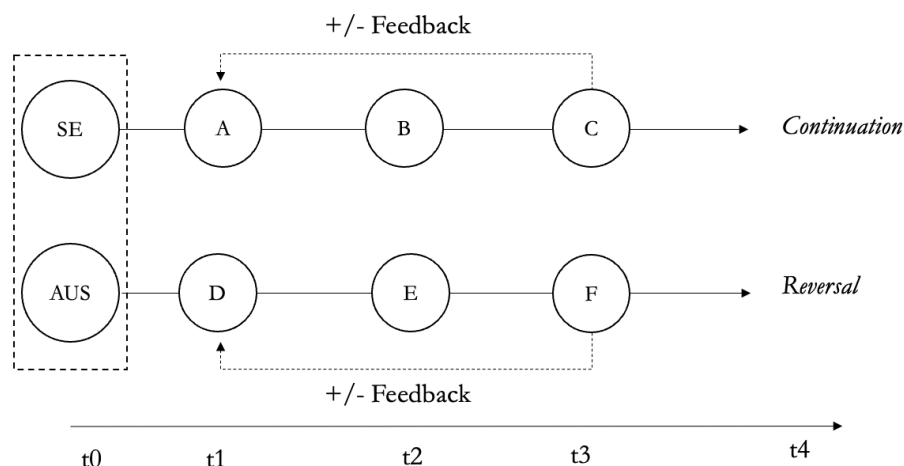


Figure 6: A schematic overview of the contrastive case study rationale. The figure illustrates the different policymaking processes that eventually led to the continuation of the carbon tax in Sweden and reversal for the case of Australia.

Moreover, the figure depicts, how the carbon tax policy making process is decomposed into multiple phases. For each phase, a specific “tool” (i.e., theoretical framework as explained in chapter 3) is used to explain the mechanisms affecting the phase at stake. In the end, these “tools” function as “filters” to make the analysis coherent across both studies and simultaneously simplify cross-cases comparisons. The section that follows elaborated upon the rationale for selecting Sweden and Australia for the contrastive case study

4.3 Rationale for selecting Sweden and Australia as cases

There are several reasons for selecting the cases of Sweden and Australia in particular. First and foremost, the cases are intrinsically interesting due to their unique and different characteristics and are not directly representative of other cases. Despite their distinctiveness, dissecting and identifying the various components that contribute to the carbon tax outcomes could aid in future policymaking as it adds to the existing knowledge on carbon tax experiences.

Second, both cases are textbook examples of reversed and continued carbon tax implementation. On the one hand, Sweden has been applauded for its long-standing carbon tax, which may teach crucial lessons about making carbon taxes work in the future (Hammar & Åkerfeldt, 2011; Jonsson et al., 2020). On the other hand, Australia's carbon tax symbolizes policy downfall, becoming the first country in the world to repeal a functioning and effective carbon tax in 2014. For almost eight toxic years, the carbon tax shaped three elections, destabilized three prime ministers and dominated public discourse in this country

(Bailey et al., 2012; Copland, 2020). These extremes in terms of diverging carbon tax experiences enable a more explicit identification of factors leading to the corresponding outcomes.

Third, despite the differences and uniqueness in terms of carbon tax experiences, both Sweden and Australia are developed and industrialized countries, which are politically stable, democratic, governed by law, capitalist economies, and economically stable (UNPD, 2020). Additionally, both countries have a strong public awareness of climate change and the associated role of carbon pricing in mitigating the harmful effects (Dreyer et al., 2015). A study by Dreyer, Walker, McCoy and Teisl (2015) showcased that the public acceptance of the carbon tax as a means to cope with climate change in Australia was stable in the initial phase of the election period. Another study by HP Australia & Planet Ark (2018) concluded that over 90 per cent of Australian consumers and businesses are concerned about environmental sustainability. Climate change as a consequence of increasing CO₂ emissions is seen as a major issue under the broader concept of the environment and sustainability. In Australia, oceans and water are significant components of Australian culture. In general, protecting the oceans and marine life, and the Great Barrier Reef in particular, is Australia's most pressing environmental issue. Furthermore, pollution reduction, the protection of Australia's endangered species, forests, and trees are also considered critical environmental challenges (WWF, 2018). Similarly, Swedish society has long valued its bond with nature, and the environment has even been an integral part of the Swedish curriculum, from ecology through conservation (Boman & Mattsson, 2008). A survey questionnaire by Boman and Mattson (2008) confirms the Swedish understanding of the fragility of the environment and the importance of its protection, highlighting that five of the eight primary categories for tax money use, including the environment, are rated as critical by more than 90 per cent of respondents.

Given their parallels in terms of economic and political stability, as well as widespread climate awareness, there is a strong desire to gain a thorough understanding of their difference in experience with regard to carbon taxation as a means to mitigate the effects of climate change.

4.4 Temporal boundaries

For the Swedish case, the policymaking process is examined from the 1960s (prior to implementation of the carbon tax in 1991) to mid 1990s, as this provides a comprehensive overview of the events (i.e., key focusing events, existing policies etc.) and processes that shaped Sweden's long-standing carbon pricing mechanism. Similarly, for the case of Australia, the period from 1980s to 2014 will be investigated because it spans the entire period during which the carbon tax was introduced, enforced, and ultimately repealed.

4.5 Data collection

As explicated in the literature review, academic scholarship grappling with the carbon tax experiences in Sweden and Australia is scarce and if available dispersed across different strands of academic disciplines.

Despite the scarcity of academic literature, it is worth noting that a simple Google search using search terms similar to those used in Scopus returns over 13 million results. The significant disparity between Scopus and Google results suggests that the investigation of carbon tax continuation in Sweden and carbon tax reversal in Australia is primarily based on gray literature. Hence, gray literature is essential to supplement and verify the findings in the scientific literature in this study. Gray literature refers to material that is not available through conventional academic publishing channels and is required to gain a better overview of the contextual events, processes and factors underpinning carbon tax experiences in Sweden and Australia, which is not possible when focusing solely on scientific literature that requires strict inclusion criteria (e.g., Scopus, Web of Science and Google scholar) (Benzies et al., 2006; Paez, 2017). Additionally, because gray literature is not subject to the peer-review process and is generally free of publication bias, it is frequently more up-to-date than academic research (Paez, 2017).

The relevant gray literature was retrieved through the use of backward snowballing of academic scholarship. Additional documents were retrieved by conducting a Google search. When selecting documents for the qualitative content analysis, the author sought to include a variety of sources in order to gain a broad perspective.

Despite the benefits of gray literature, it is critical to keep in mind that creating search queries for it can be challenging and time consuming, and that analyzing it is resource-intensive due to the document's lack of abstracts, which makes it difficult to efficiently assess the document's relevance (Benzies et al., 2006). To address these limitations, sufficient time is allocated to locating and processing gray literature, snowballing relevant articles from the scientific literature, and coding using judgment sampling. Another disadvantage of gray literature is its lack of credibility, as non-peer-reviewed documents are used (Benzies et al., 2006). To address these disadvantages, gray literature findings are cross-checked against multiple sources and, where possible, academic sources.

4.6 Data treatment: coding of qualitative content

Coding in qualitative research is the process of categorizing and organizing qualitative data in order to identify distinct themes and their relationships. This form of qualitative content analysis is particularly useful when analyzing and making sense of large bodies of literature coming from different sources (Williams & Moser, 2019). To support the qualitative content analysis Atlas.ti was used. Atlas.ti gives access to sophisticated tools to arrange, reassemble, and manage data in a creative, yet systematic way.

Literature differentiates between deductive and inductive coding (Basil, 2003). Whereas deductive coding departs from a set of pre-defined codes, inductive coding departs from scratch, formulating codes based on the analyzed content itself. In this study both inductive and deductive coding procedures are utilized. First inductive coding is used as the research is explorative in nature, and aims to find the narrative underlying the carbon tax experiences. Additionally, inductive coding is recommended when there is limited previous research on the phenomenon being investigated, which is the case for this research. However, this

study also acts employs deductive techniques, as pre-defined codes are used to guide the open codes. To be more specific, the pre-defined codes were specific elements of the theoretical frameworks such as the three metaphorical streams of the MSF and the resource and interpretive effects of the PFT. Alternatively, coding in this study can be described as abductive given that the procedure begins with incomplete observations, which are committed to their explanation through predetermined theoretical frameworks.

The coding procedure in this study is based on the recommendations provided by Williams and Moser (2019) in “The Art of Coding and Thematic Exploration in Qualitative Research”. The section below presents the step-wise coding methodology (figure 7) used in this study.

1. **Document organization:** The qualitative data collection is initially segmented into smaller samples of similar sorts of texts (e.g., policy notes, documented interviews and white papers). Additionally, gathered data was split according to case (i.e., Sweden or Australia). This first step was completed using the "Document Groups" option within Atlas.ti.

2. **Open coding:** With the organization of the documents completed, the concept of open coding was applied. Broad thematic concepts were identified and organized accordingly. In addition, years were added to the coding list to support the process tracing procedure as described in section 3.6. From there, in the first cycle, the samples were read and codes were applied. New codes were only used when the existing codes failed to capture the new information.

3. **Axial coding:** In the second level of coding, the identified open codes are further refined and grouped into categories. Finally, this notation establishes a hierarchical coding structure that enabled forward and reverse tracing in Atlas.ti.

4. **Selective coding:** Lastly, the categorized codes were selected and grouped in themes which were connected to the theoretical frameworks used in the study. To ensure that the right categorized codes were sorted under the correct theme, the definitions of the different metaphorical streams of the MSF (e.g., problem stream) and the terminology of the PFT (e.g, resource effects) were used as reference. Table 2 presents the coding scheme with the corresponding elements and definitions.

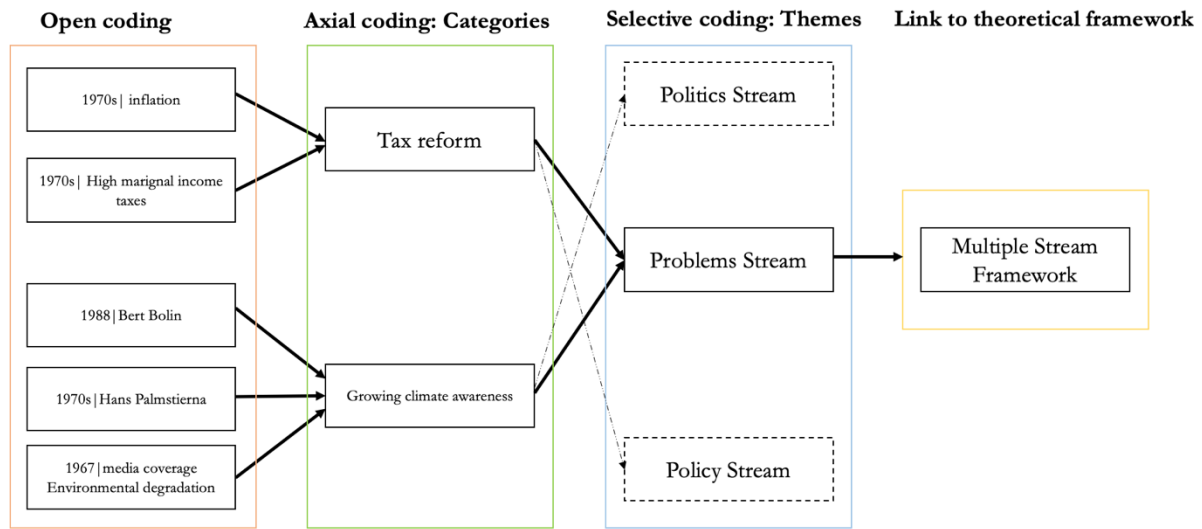


Figure 7: Visual representation of the coding procedure followed in the study. By combining open codes into categories, the themes were formed.

Table 2: Coding scheme.

Element	Definition
Problem stream	Conditions that have been labeled as problematic and have been considered something for which one should take action. Conditions transform into problems through “focusing events” (e.g., natural disasters or strikes), indicators (e.g., data, historical comparisons and statistical reports) and feedback channels (e.g., media and public deliberation).
Political stream	The institutional setting, cultural context and the political processes (e.g., swings in national mood, pressure groups, legislative politics etc.) that motivate policymakers to focus on specific problems and possible solutions for the agenda.
Policy stream	A collection of policy ideas, alternatives or proposal, developed in policy communities which may or may not solve the problem at stake.
Policy entrepreneur	Key actors, who dedicate themselves to influence policy outcomes within the policy stream. Policy entrepreneurs (e.g., elected politicians, leaders or spokesperson) use their knowledge of the policy process to promote and push policy alternatives on the agenda as solutions to problems at the right time (i.e., window of opportunity).
Policy window	The institutional context where the streams (problems, politics and policy) couple as a consequence of focusing events in the problem stream or activities of policy entrepreneurs.

Resource effect	Resource distributions that have a politically important effect on the positions of interest groups, government elites, and individual social actors.
Interpretive effect	The setting and condition in which the policy is received by the public and policy makers.

To operationalize and quantify the major theoretic notions specified in table 2, the broader definitions were broken down into smaller components defined in the literature (see figure 2). Finally, the decomposition of broader definitions enabled the development of a more precise coding technique.

Furthermore, a coding syntax was devised to provide uniformity throughout the coding procedure and to ensure that the codes corresponded to the theoretical definitions. The syntax for various types and levels of codes is shown in Table 3.

Table 3: Syntax of coding procedure.

What	Label in Atlas.ti	Example
Open coding	Lower-cased letters with a prefixed “oc”	oc-1970-Hans Palmstierna
Category	Lower-case letters with a prefixed “c”	c-growing climate awareness
Theme	Upper-case letters with a prefixed “t”	t-POLITICAL STREAM

4.7 Data analysis: causal process tracing

The causal process tracing technique was used to reconstruct the policy-making process over time. In other words, process tracing is used to ascertain whether and how a particular change or collection of changes was influenced by a possible cause or causes (Ricks & Liu, 2018). This is performed by employing a set of tests to ascertain the strength of the evidence linking the activities contained within a project or program to the observed change(s). This technique supported the research objective by emphasizing timing and temporal sequences (section 1.4). Finally, causal process tracing permits the creation of a comprehensive storyline and the identification of critical policy-making events (Siewert, 2017). In this work, the process tracing approach was closely related to the above-described coding procedure. To illustrate, the pathway of *environmental degradation* (in the open coding phase) to *growing climate awareness* is highlighted. The process tracing for this study is executed as follows. First, all theoretical codes were labelled according to their year. In the end, this gave a chain of events which follow each other. In order to verify the causal relation between two events various sources were utilized to test the validity of the event. For example, the causal relation between environmental degradation and growing climate awareness was verified by three sources as

depicted in figure 8. In essence, the three codes served as verification checks leading to the conclusion that the environmental degradation was indeed a condition contributing to the growing awareness of climate change in Sweden. From a data validation point of view the verification checks are conducted by utilizing different types of sources (e.g., scientific literature, gray literature, news articles and governmental reports).

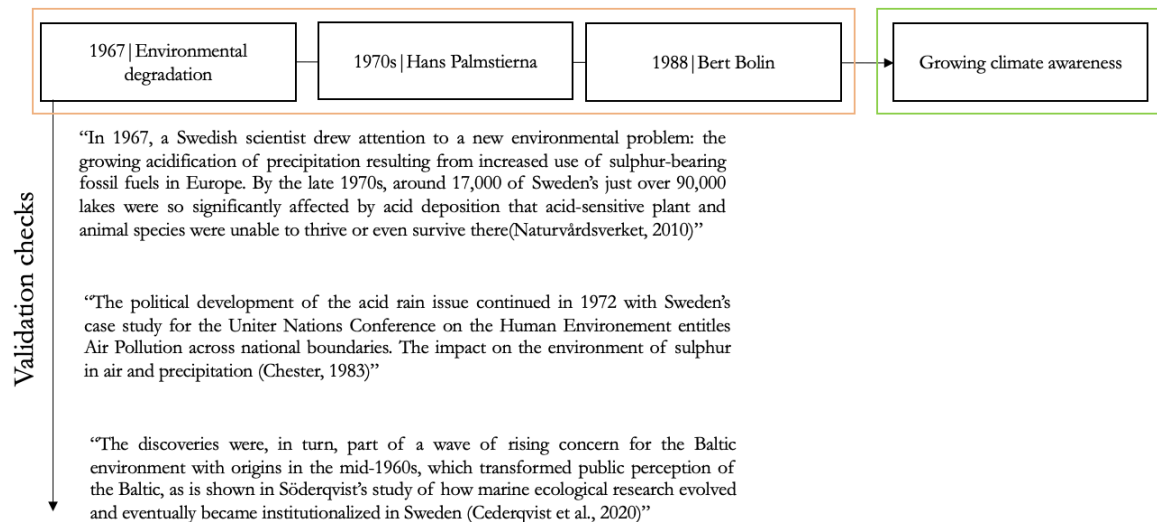


Figure 8: A visual representation of the causal process tracing procedure and the corresponding validation checks for the case of environmental degradation of the Baltic Sea.

4.8 Data validation

Guaranteeing validity of qualitative research is essential to ensure the accuracy of the findings and convince the readers of its accuracy (Creswell, 2014). Validity of qualitative research typically centers around four pillars including credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985). Considering the first, several factors contribute to the credibility of this study. First of all, given the extensive timeline and extensive set of data utilized for this study, prolonged engagement and persistent observation are among the factors that contributed to the credibility of this study. Furthermore, through so-called peer debriefing (i.e., weekly discussions with the advisor and monthly discussions with the study group) the credibility of the research is increased. Given that both policymaking processes took place more than ten years ago and that key high-level actors had already participated in media, interviews, and other news outlets, it was decided not to include external interviews because they were deemed less valuable than extensive research of existing evidence grounded in gray literature.

In terms of transferability (external validity), the provision of a clear boundary and context (i.e., in terms of temporal boundaries, the energy system and governmental structure) allows other authors to depart from this research and transfer elements from this study to future investigations. Replicability is guaranteed through a clear description of the methodology, tools, materials, procedures, measurements,

and other variables used in the study. In addition, a comprehensive description of the data analysis and decisions to exclude some data and include others is provided. In the end, an explanation of the uncertainty associated with the measurements, findings, and inferences is also presented in the study.

Furthermore, triangulation is important to ensure the validity (internal validity) of the research. Due to the fact that both policymaking processes occurred relatively long ago (i.e., 30 years ago in Sweden and 10 years ago in Australia), different types of qualitative data were used to triangulate the findings as much as possible. Newspaper pieces, magazine articles and radio performances have been especially important for this purpose, as well as for gaining a sense of contemporaneous attitudes and the stances adopted by people who are deceased. Trove (part of the National Library of Australia) was for the Australian used as it contains digital editions of newspapers, gazettes, maps, periodicals, audio fragments and newsletters. In addition, PM Transcripts (part of the Australian Government, Department of the Prime Minister and Cabinet), a database consisting interview transcripts from Australian Prime Ministers is used to gain in depth insights into the mood during the policymaking process. For the Swedish case databases were used from individual newspapers as there was no publicly available database. Figure 9 gives an example of how the retrieved information is validated throughout the study. The use of these type of archival data adds to the internal validity of the research

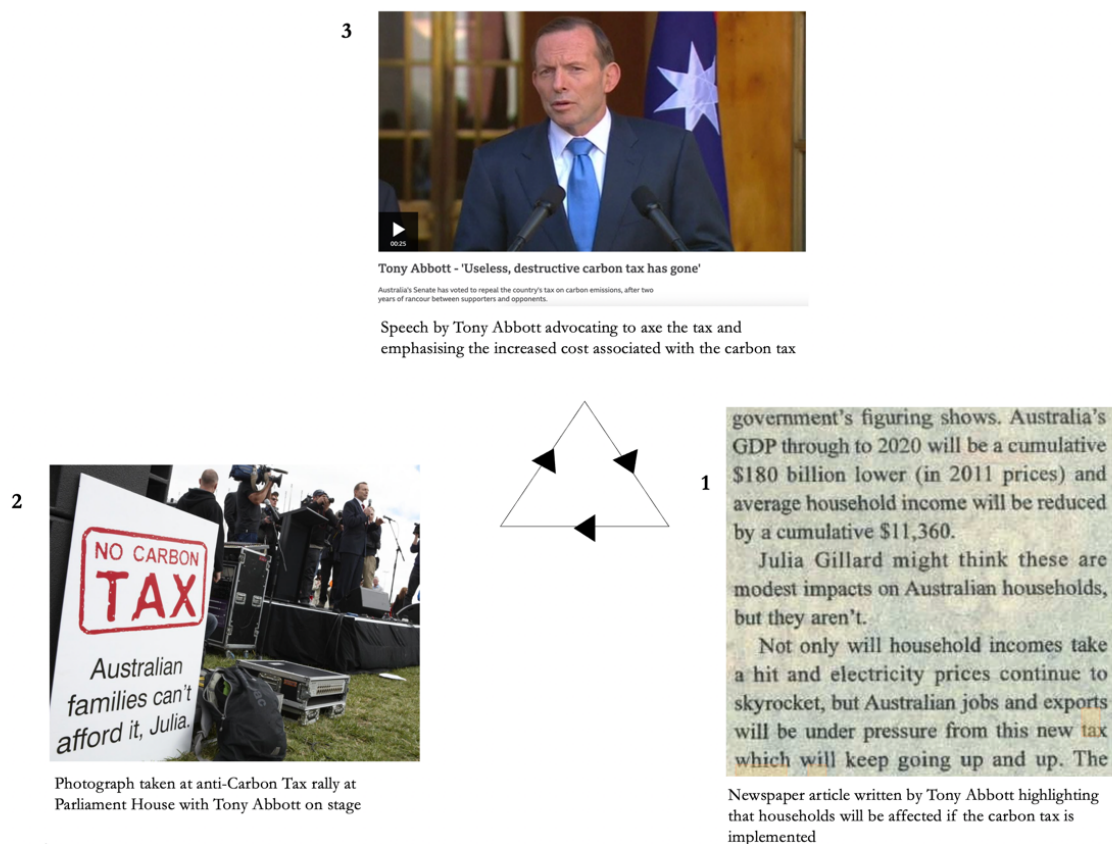


Figure 9: Data validation through the use of different type of sources and media. In this example the data is validated by means of video, photography and a textual news article.

Chapter 5. Carbon Taxes in Detail

5.1 Introduction

Chapter 5 provides a comprehensive review on carbon taxes as an environmental pricing policy instrument. To assist readers in comprehending carbon taxes, the chapter is further divided into four paragraphs. Section 5.2 discusses the factors underpinning the emergence of carbon taxes moving up the policy agenda in numerous countries worldwide. Section 5.3 digs further into the rationale and operation of carbon taxation, as well as its advantages. Section 5.4 examines the hurdles associated with carbon tax implementation. Altogether, this chapter serves as a funnel opening to the thesis by answering the following subquestion:

Sub question 1: What does a carbon tax entail and how does a carbon tax as a policy mechanism work?

5.2 Putting carbon taxes in historical context

Carbon taxes are not a new phenomenon, and have been a topic of discussion since the early 1970s by scholars such as William Baumol (Baumol, 1972), William Nordhaus (Nordhaus, 1977), David Montgomery (Montgomery, 1972) and David Wilson (Wilson, 1970). The latter, an MIT engineer was cited by David Chandler in MIT News as an early unsung proponent of a carbon tax who noted that:

“Specifically through a combination of a gradually increasing extra fee on gas and a rebate of the monies collected to all citizens, the use of gas would be curtailed without having to impose actual limits on its consumption; simultaneously, the rebate would provide an extra economic boost to those with the lowest incomes” (Chandler, 2013, p.1).

Their work revolved around Pigou's (1920) foundational work "The Economics of Welfare," that discusses the taxation of negative externalities — the uncompensated effects of a person's or a corporation's or company's behavior or company on the well-being of others (e.g., air pollution, climate change damages). In his seminal work, Pigou expresses:

“... when the owner of a site in a residential quarter of a city builds a factory there and so destroys a great part of the amenities of the neighbouring sites; or, in a less degree, when he uses his site in such a way as to spoil the lighting of the houses opposite: or when he invests resources in erecting buildings in a crowded centre, which, by contracting the air space and the playing-room of the neighbourhood, tend to injure the health and efficiency of the families living there” (Pigou, 1920, p.185/186)

Since then, Pigouvian taxes have been incorporated to address several “negative externalities,” ranging from the public health expenses associated with cigarette and alcohol consumption to the ozone layer harm caused by chlorofluorocarbons (Cadoret et al., 2021; DeCicca et al., 2013; Edenhofer et al., 2021; Parry et al., 2009). In 1973, economists and other academics advocated a Pigouvian tax to absorb the costs of carbon dioxide and other GHG emissions on human health and the economy due to global climate change.

In essence, contemporary carbon taxes stem from the fundamentals of Pigovian taxes. The concept attempts to modify the price of a product or service in such a way that it captures all of the negative externalities that it causes (Cannan & Pigou, 1921; Edenhofer et al., 2021). Over the course of several decades, Pigou's seminal work and findings have acquired broad political support, key counter-arguments have been rejected, and a carbon price appears to be more efficient than limitations and prohibitions (Edenhofer et al., 2021). The increased support base is reflected in the number of governments that consistently employed, and still continue to employ carbon taxes to drive green consumerism and the environmentally-conscious behavior of companies and individuals (Carl & Fedor, 2016; Criqui et al., 2019; Timilsina, 2018). In 1990, Finland became the first country to introduce a carbon tax (Jonsson et al., 2020). Subsequently, the Netherlands (1990), Norway (1991), Sweden (1991), and Denmark (1991) enacted carbon taxes (1992) (Criqui et al., 2019; Ghazouani et al., 2020; Timilsina, 2018; World Bank, 2020). The United Kingdom introduced its Climate Change Levy in 2001, more than a decade after the introduction of the first carbon tax. After 2000, there has been a noticeable surge in support for carbon pricing. Other countries, such as Australia and Japan, began developing and implementing carbon taxes in response to the Swiss carbon tax's implementation in 2008 (Nakano & Yamagishi, 2021; Rahman, 2013). In early 2010, South Africa, Mexico, and later Chile and India decided to introduce carbon taxes for the first time to aid in the achievement of climate policy goals (Okonkwo, 2021; Zhang et al., 2021).

Worldwide carbon taxes have many forms and sizes, but the majority of them reduce down to a straightforward rate of taxes on each ton of carbon-based fuel consumed. According to the World Bank's Carbon Pricing Dashboard (n.d.), 35 carbon pricing schemes are either operational or under development, each with its scope (upstream or downstream taxes), coverage (a wider variety of firms), and boundaries (subnational, national, and supranational (Steinebach et al., 2021). Carbon levies already in place are routinely expanded and developed further to meet new targets (EPRS, 2020).

As a consequence of the aforementioned increased implementation and environmental awareness to hamper the effects of climate change, carbon taxes piqued the interest of scholars and policymakers. Over the last three decades, academic research on carbon taxes has blossomed, with hundreds of publications published in peer-reviewed publications covering a wide range of theoretical and empirical concerns linked to carbon pricing.

5.3 Carbon taxes in detail

According to the United Nations Handbook on Carbon Taxation (2020), a carbon tax is "a tax capable of conferring a reduction in corresponding carbon-based (equivalent) emissions in the atmosphere". In practice, a carbon tax imposes a per-unit price on GHG emitters (EPRS, 2020; United Nations, 2020). Two approaches are distinguished under the umbrella term "carbon taxes". The simplest administrative solution is to levy the tax "upstream," where the fewest organizations are impacted (e.g., suppliers of coal, natural gas processing facilities, and oil refineries). Alternatively, the tax could be levied "midstream" (on electric utilities) or "downstream" (on consumers) (United Nations, 2020).

The use of carbon taxes have been promoted for several reasons. First, rather than advising businesses on where and how to decrease their carbon emissions, a carbon tax sends a market signal, allowing polluters to choose between reducing their emissions, or continuing to pollute and paying the associated penalty (Sterner & Köhlin, 2015; United Nations, 2020). This built-in flexibility also allows tax paying actors to be responsible for selecting the best cost-effective cure targeted at reducing emissions to meet the targets set in NDCs (Metcalf & Weisbach, 2009; United Nations, 2020). Further, in comparison to cap-and-trade measures, carbon taxes provide better certainty in terms of the emission price tag, allowing energy producers and entrepreneurs to make investment decisions without concern of regulatory costs shifting (Scharin & Wallström, n.d.).

Second, the carbon tax's design has been hailed for its simplicity as it minimizes the involvement of governments and simultaneously eliminates the need for complicated monitoring, reporting, and verification. That is, it can be implemented using existing administrative systems for fuel taxation, meaning that it can be implemented within months (Sumner et al., 2013). In comparison, the cap-and-trade system's relative complexity is expressed in terms of allocation of allowances typically translates into increased administrative overhead during implementation.

Fundamentally, a carbon tax is well-designed if it is applied at the point where the highest proportion of emissions are included in the tax base while affecting the fewest number of companies and organizations. (Metcalf & Weisbach, 2009). Once the policymaker has decided to consider such a tax, there are a number of design options to consider. The most significant elements to consider include **(1)** the tax base; **(2)** the tax rate; and **(3)** the use of the revenues (Ian et al., 2008; Sumner et al., 2013; United Nations, 2020; World Bank Group, 2017). The section that follows, elaborates upon the key carbon tax policy design variables as depicted above.

1. *Tax base:* The tax base encompasses the scope and emission coverage of the tax (Metcalf & Weisbach, 2009). In other words, the tax base sets which industries and gases will be taxed, as well as the per centage of total GHG emissions covered by the tax (Köppl & Schratzenstaller, 2021). Typically, carbon taxes are levied on gasoline, coal, and natural gas (Sumner et al., 2013; United Nations, 2020). Simultaneously, some governments exempt or permit specific industries to pay

lower tax rates to mitigate the effects of carbon leakage. When setting a tax base, governments decide whether to tax emissions at their source or their point of consumption. The downstream sources of electricity consumption, such as commercial power consumption, send a more immediate signal to customers, whereas the upstream energy generation sources, such as utility taxes, are a more efficient means to collect taxes (Sumner et al., 2013).

If the scope of the carbon tax is expanded, it will be more efficient and environmentally effective, as it increases the number of GHG abatement opportunities. Additionally, a larger tax base facilitates the creation of more revenues at a given tax rate or the use of a lower tax rate to meet the same revenue target. However, at the same time, broadening the tax base increases the number of actors susceptible to the new tax, which may increase political opposition to the tax (Pomerleau & Asen, 2019). Additionally, the administrative complexity associated with monitoring and verifying emissions reductions from specific sources may be so high that putting a carbon tax on them would be counterproductive.

2. *Tax rate:* One of the most significant challenges in the design of carbon tax scheme is determining the magnitude of the carbon tax, or tax rate. The tax rate refers to the per centage of an amount or value that has to be paid in tax (Köppl & Schratzenstaller, 2021; Sumner et al., 2013). There are multiple approaches to determine the appropriate tax rate.
 - a. *The Pigouvian approach:* If policymakers want to implement a tax in a fully Pigouvian way—that is, to ensure that the economic costs of GHG emissions are internalized in individual and corporate decision-making—they can consider the social cost of carbon (Cannan & Pigou, 1921). As described in section 5.2, in 1920, Pigou established the fundamental principles for determining the appropriate tax rate (Cannan & Pigou, 1921; Edenhofer et al., 2021). According to Pigou (1920), a tax equivalent to the marginal social damage caused should be applied as this will internalize the external cost of a producer's activities into his private costs. If the tax must be fixed, as is the case with most broad-based taxes, the optimal tax rate is one in which the marginal benefit of abatement equals the marginal cost of abatement (Huber et al., 2016).
 - b. *Adjusting the carbon tax rates to meet emission reduction targets:* Setting the right tax to meet reduction targets is challenging due to uncertainties induced by future economic development, relative costs of fossil fuels versus low- or zero-carbon technologies over time, and the economy's response to a carbon tax (World Bank Group, 2017). To achieve the desired degree of emission reduction, a constant adjustment in the tax rate is required to counteract increased emissions. In essence, a government develops a set of benchmark

emissions targets and automatically changes the carbon tax pricing path if real, measured emissions deviate from the benchmark path (Hafstead et al., 2020). In this case, the carbon tax operates more like a cap-and-trade system, guaranteeing quantity rather than price certainty. When countries agree to meet specific abatement targets individually and collectively, such an approach may be advantageous during international climate negotiations.

- c. *Adjusting the carbon tax rates to meet revenue goals:* Adopting a carbon tax as a means of financing deficit reduction or offsetting the cost of reducing other, more economically distorting taxes, such as labour and income taxes, may be politically appealing. However, several unfavourable repercussions are linked to a tax rate determined by money rather than environmental concerns.

To begin, revenue gains are uncertain, as it is impossible to foresee customers' reactions to a carbon tax in advance. Second, when determining the appropriate tax rate for a given amount of revenue, it is necessary to account for the indirect carbon tax (a tax on a transaction) revenues, which is likely to be offset in part by a decline in other government revenue. Third, the optimal tax rate and escalation rate from an environmental perspective may be somewhat different from the optimal tax rate and rate of escalation from a revenue perspective.

- 3. *The use of revenues:* Depending on the carbon price, annual income raised might be in the tens or hundreds of billions of dollars, and how that revenue is spent has a substantial impact on the overall economy, the efficiency of the tax system, and public welfare (Nowlin et al., 2020). In practice, governments employ a range of revenue-generation tactics, and many have combined them to meet policy aims and demands. In general three options for allocating carbon tax money are considered:

- a. *Revenue neutrality (revenue recycling):* Revenue neutrality circumscribes a system in which all funds generated by a carbon tax are returned to individuals and enterprises via some mechanism, such as payroll or income tax reduction (Carl & Fedor, 2016; World Bank Group, 2017). As a result, the government's revenue collection is unaffected. In line with the "double dividend" theory, revenue-neutral policies have two benefits: they place a price on activities that harm the environment (the first dividend) and provide new job opportunities through lower income taxes (the second dividend) (Köppl & Schratzenstaller, 2021) (OECD 2001). Furthermore, a revenue-neutral technique can aid in mitigating the overall economic burden of a carbon tax (Repetto 2001). While raising government expenditure or reducing government debt may have significant economic

benefits in some cases, revenue neutrality is often seen as the most economically efficient way to employ carbon tax income (World Bank, 2017).

- b. Increased expenditures (including debt reduction):* Governments can decide to direct revenues to the general budget or to specific causes such as environmental protection or social support (Carl & Fedor, 2016; World Bank Group, 2017). Increasing spending will invariably result in rising tax burdens for the public. Alternatively, the revenues can be allocated to lower the national debt or deficit. According to critics, governments that increase tax rates only to raise revenue create an ineffective tax; an efficient tax would have a rate equal to the marginal cost of carbon emissions (Sumner et al., 2019).
- c. Revenue sacrifice:* Governments can forego some money by enabling taxpayers to surrender offsets in lieu of paying their carbon tax requirements (World Bank Group, 2017). When domestic offsets are utilized, this redirects government carbon tax money to unprotected sectors, although how much of a shift in resources occurs will rely on other aspects, especially the offset price (World Bank Group, 2017).

Chapter 6. The Swedish carbon tax: from agenda-setting to continuation

6.1 Introduction

Chapter 6 delves into the policymaking process for the Swedish carbon tax. Following this introduction, this chapter opens (6.2) with an overview of the key characters and groups involved in the policymaking process. Section 6.3 then discusses Sweden's governmental system and legislative procedure in further detail. Following that, section 6.4 delves into Sweden's energy system. Figure 10 demonstrates how the preceding three paragraphs serve as the building blocks necessary to understand and analyse the carbon tax's policymaking process. After establishing the groundwork, paragraphs 6.5–6.13 examine the policymaking process from agenda setting to its current level of continuation.

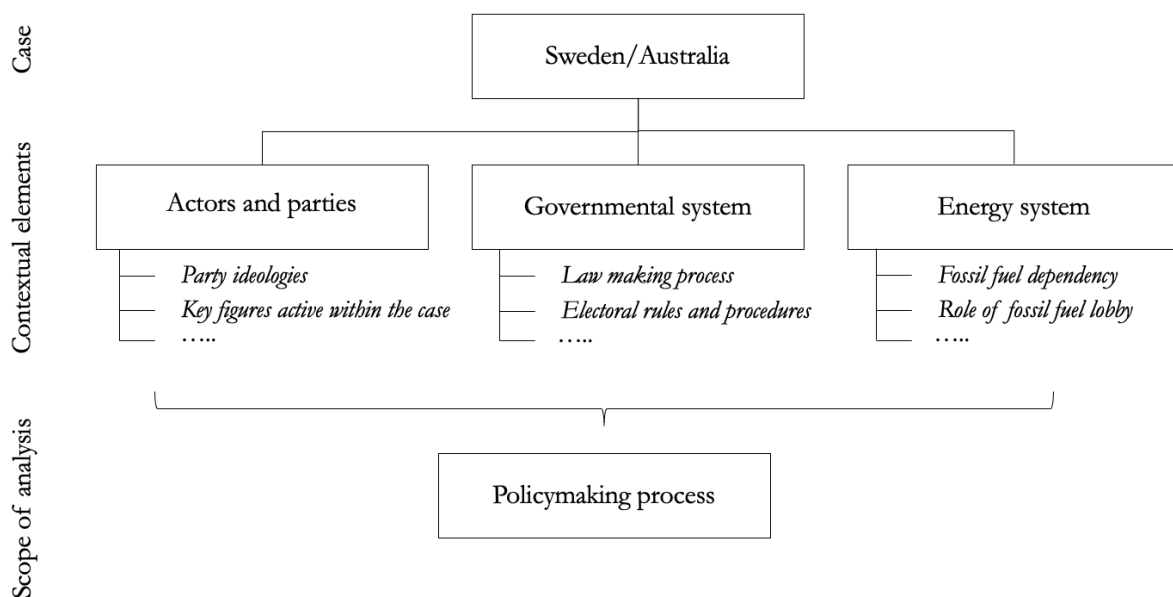


Figure 10: Schematic overview of the contextual elements required to understand the policymaking process (scope of analysis).

6.2 Key actors and parties

Table 4 summarizes the players and parties regarded significant within the confines of the Swedish case. The table contains the name of the actor's or party's label, a brief description, and a list of sources. In addition to the table, figure 11 depicts the political parties' positions on the political spectrum to help the reader understand their underlying positions and choices.

Table 4: Key actors and parties involved in the Swedish case.

Actor or Party	Description	Source
Social Democratic Party	The Social Democratic Party was founded in 1889 and is Sweden's oldest and largest social-democratic political party. From the mid-1930s until the 1980s, the Social Democratic Party received more than 40 per cent of the vote. From 1932 to 1976, the Social Democratic Party served continuously in government.	(Sveriges Riksdag, n.d.; Ryabichenko & Shenderyuk, 2013)
Swedish Green Party	In 1988, the Swedish Green Party became the first new party to enter parliament in 70 years. The party failed to pass the 4 per cent threshold in 1991, but was able to re-enter in 1994 and has been in parliament ever since.	(Sveriges Riksdag, n.d.) (Ryabichenko & Shenderyuk, 2013)
The Liberal Party	The Liberal Party is also known as the Liberal People's Party and was founded in 1934 and actions toward a free-market economy are among the party's policies.	(Sveriges Riksdag, n.d.; Ryabichenko & Shenderyuk, 2013)
Bert Bolin	Bert Bolin was a Swedish meteorologist who led the Intergovernmental Panel on Climate Change (IPCC) as its first chairman from 1988 to 1997. From 1961 until his retirement in 1990, he worked as a professor of meteorology at Stockholm University.	(Jonsson et al., 2020)
Eric Dahmén	Eric Dahmén was a professor of economics at the Stockholm School of Economics in Sweden. Dahmén was ahead of his time in his assessment of the environmental impact of industrial development. Eric Dahmén published several seminal articles on environmental taxes.	(Jonsson et al., 2020)
Prime Minister Tage Erlander	Tage Erlander was the Swedish Social Democratic Party's leader who served as Prime Minister from 1946 to 1969. He formed the Environmental Protection Agency in 1968	(Naturvårdsverket, 2010)
The Swedish Society for Nature Conservation (SSNC)	The Swedish Society for Nature Conservation (SSNC) is an environmental organization. SSNC disseminates information, maps environmental threats, finds solutions and exerts influence over legislators and public officials at both the national and international levels.	(Sveriges Riksdag, n.d.; Ryabichenko & Shenderyuk, 2013)
Måns Lönnroth	Måns Lönnroth is a Swedish politician and director. He was and continues to be a member of the Social Democrats' environmental and health protection committees in Stockholm, as well as the Stockholm Water Foundation.	(Jonsson et al., 2020)
Karl Myrdal	Karl Myrdal was a sociologist and economist from Sweden. In 1974, he was awarded the Nobel Memorial Prize in Economic Sciences for his work in the theory of money and economic fluctuations, and the interconnection of economic, social, and institutional events.	(The Nobel Prize, n.d.)
Hans Palmstierna	Hans Palmstierna was a Swedish chemist and environmental debater that was affiliated with the Social Democrats. He was one of the first writers in Sweden to address climate change issues in <i>Looting, Starvation, Poisoning</i> in 1967.	(Jonsson et al., 2020)

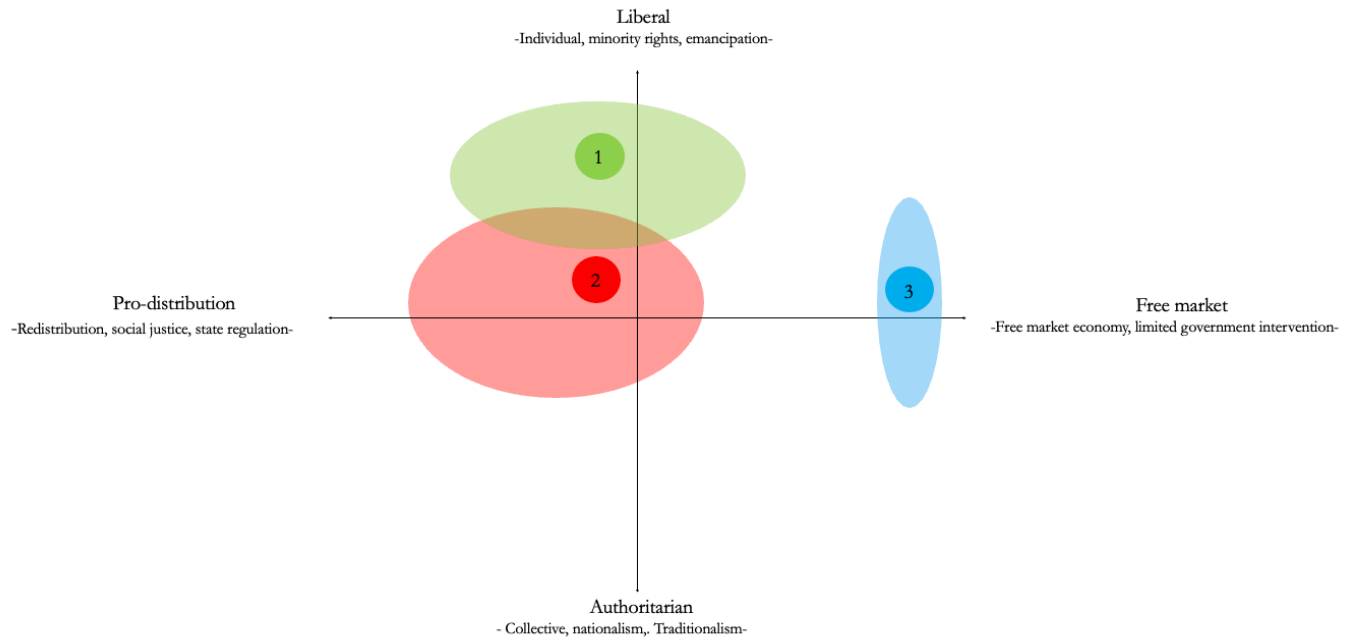


Figure 11: The three major political parties (The Green Party in green, The Social Democrats in red and The Liberal Party in blue) positioned on the political spectrum. Adopted from (Friedrich Ebert Stiftung, n.d.)

6.3 Swedish system of government

Sweden is a parliamentary democracy, meaning that the people elect representatives to a legislative parliament. Sweden's governmental system is divided into three levels: national, regional, and municipal (GOS, n.d.). On the national level, The Swedish parliament (also known as the Riksdag), which has 349 members, is the country's central representative forum. The whole parliament is directly elected by all Swedish nationals aged 18 and up whom currently or have previously resided in Sweden. The Government carries out the Riksdag's decisions and drafts recommendations for new legislation or adjustments to existing laws (Sveriges Riksdag, n.d.). A complete overview of the law-making process is depicted in figure 12. Every four years, parliamentary elections are held during which, residents can cast vote to elect their representatives in Parliament. Political parties are assigned seats based on the total number of votes cast across the country. In order to gain seats in parliament (Riksdag), a party must win at least 4 per cent of all votes cast in the election, a provision designed to keep minor parties out (Sveriges Riksdag, n.d.).

The speaker of parliament nominates a prime minister, who is then voted on by the legislature. The prime minister is responsible for forming a government. From there, the prime minister appoints cabinet members and leaders of particular departments. The prime minister and cabinet ministers form the government. The Social Democrats ruled Sweden from 1932 to 1976, when they were deposed by a coalition of the Centre Party, the Moderates, and the Liberal Party. In 1982, the non-socialist parties lost

their majority, resulting in the formation of a Social Democratic minority government. In the years following, after both elections in 1985 and 1988, the Social Democrats retained power. In 1991, a non-socialist government was formed consisting of the Moderates, Liberals, the Centre Party and Christian Democrats (Swedish Institute, 2021). Figure 10, gives a visual representation of the most relevant parties (within the scope of this study) in Sweden and their position of the political spectrum.

In Sweden, the European level has grown in importance since Sweden's 1995 accession to the European Union (EU). Sweden gained a European level of governance upon accession to the European Union (EU) in 1995 and hence, participates in the process of developing and approving new common laws, and the Swedish government represents the country in the Council of the European Union the EU's significant decision-making body (European Union, n.d.).

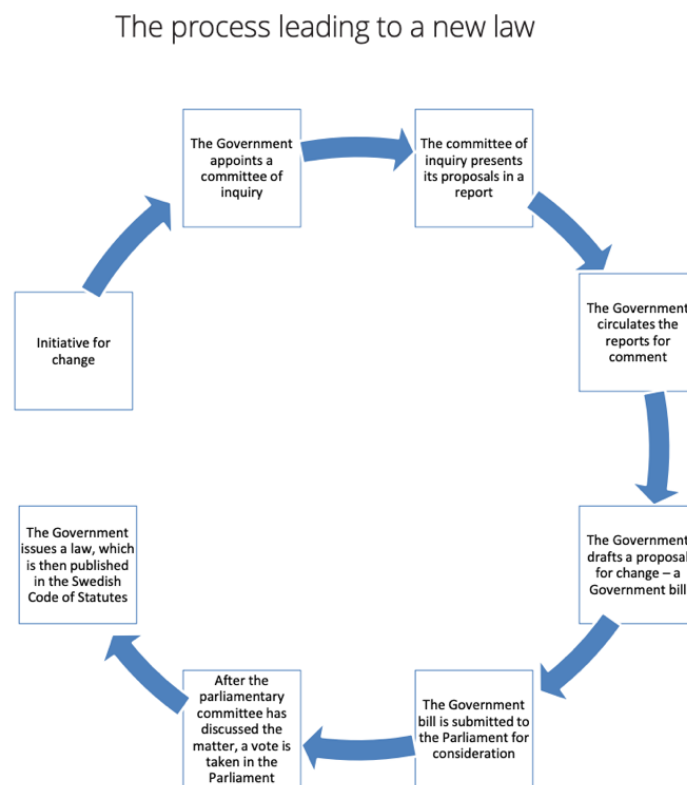


Figure 12: Visual representation of the law-making process in Sweden (Ministry of Justice, 2016)

6.4 Sweden's energy system: transitioning from oil to renewables

Prior to the carbon tax, imported oil dominated Sweden's energy supply in the post-World War II years. Amid rising environmental concerns and geopolitical risks generated by oil dependency, Sweden initiated an extensive nuclear program in the 1970s, with 12 reactors, six of which remain operational now, delivering 35–40 per cent of the total electricity supply (Flanders Investment & Trade, 2020; Swedish Energy Agency, 2018). The nuclear transition, between 1980 and 1990, launched the first wave of CO₂ emission reductions. The continued growth of biomass energy, particularly for district heating systems – both in private homes and in district heating – was Sweden's second major energy system revolution (Flanders Investment & Trade, 2020; International Energy Agency, 2019). Between 1980 and 2021, biomass production has tripled, increasing from 4 to 12 million tonnes of oil equivalent. The carbon tax, which was implemented in 1991, contributed significantly to this shift (Hammar & Åkerfeldt, 2011).

Moreover, Sweden's energy system is characterised by an absence of fossil fuel deposits, large fossil fuel producers, and anti-climate activism. Rather, the Swedish energy system is characterised by a high share of fossil free sources including nuclear and hydro power partly based on domestic sources (International Energy Agency, 2019; Swedish Energy Agency, 2018). At the end of 2020 the total installed capacity of renewable energy contributes 54 per cent of its energy supply. Biomass (for heat supply) and hydropower (for electricity production) combined provide 15 per cent of the energy supply. Among others, the high share of renewable energy can be attributed to Sweden's favourable geographical location with a rich supply of moving water and biomass (Swedish Energy Agency, 2021).

The forest industry, including the wood and pulp and paper industry consumes the highest share (over 15 per cent of Sweden's total electricity consumption) of energy. At the same time these industries have the possibility to utilize by-products to fuel internal energy demand (Johansson, 2000; Swedish Energy Agency, 2018)

6.5 The problem stream in Sweden

The problem stream contained two distinct issues: environmental degradation as a result of rising GHG emissions and an unsustainable tax system (Åsard, 1989; Naturvårdsverket, 2010; Sterner, 1994). Kingdon identifies three factors that contribute to the emergence of problems on policymakers' agendas: indicators, focal events, and feedback (1995, p. 197). In 1967, Swedish scientists brought notice of the increasing acidity of precipitation due to Europe's increased use of sulphur-containing fossil fuels (Naturvårdsverket, 2010). According to the Swedish Environmental Protection Agency “by the late 1970s, around 17,000 of Sweden's just over 90,000 lakes were so significantly affected by acid deposition that acid-sensitive plant and animal species were unable to thrive or even survive there” (Naturvårdsverket, 2010).

Among the scientists, Hans Palmstierna, an assistant professor of chemistry and outspoken Social Democrat, regarded it as his obligation to intervene in public dialogue and steer political progress in new directions (Lundgren et al., 2019). During the late 1960s, Palmstierna became Sweden's first well-known

environmental debater, writing regularly for Dagens Nyheter, one of Sweden's largest and most potent newspapers (Lundgren et al., 2019). Moreover, in the autumn of 1967, Palmstierna published the book *Looting, starvation, poisoning*. With fresh revelations regarding acid rain and the controversy over mercury in lake fish, the book, which sold over 60.000 copies, significantly impacted Sweden's environmental awakening. According to Prime Minister Tage Erlander, who founded the Environmental Protection Agency in 1968, Palmstierna exemplified how individual personalities have disproportionately influenced opinion formation, particularly in the area of environmental policy. To expand, with his influence in the problems stream it can be argued that Palmstierna acted as a problem broker who framed conditions as public problems through the use of knowledge, values, and emotions (Knaggård, 2015).

In 1967, another book (*Människans villkor*), twelve prominent Swedish researchers (including two Nobel prize recipients Hannes Alfvén and the economist Gunnar Myrdal) emphasized their concern about the grave situation (Paglia, 2021). Specifically, their work emphasized that humanity had over-exploited its common environment - the world - to the point where the environment and resources were being depleted faster than they could be replenished through the natural cycle (Paglia, 2021). As the book's editor, Karl-Erik Fichtelius, put it, man has entered a new period in a historically unprecedented state of dire jeopardy. Through publications, scientist hoped to stir public opinion by using their scientific skills to provide compelling examples of how fragile the environmental situation had become.

During the same decade, images of oiled birds and dead fish were strategically put in public areas to pique public interest and affect public opinion (Naturvårdsverket, 2010). Other individual incidents, such as the extinction of the seal population, contributed to the increased awareness of environmental and ecological degradation (Cederqvist et al., 2020). In the wake of increased awareness, the media also offered scientists seeking to communicate their expertise and ideas to the general public earned much more significant airtime and column space. For example, Professor Bert Bolin, who also served as the Swedish Prime Minister's scientific advisor, advocated for political action on climate change in the early 1970s (Rodhe, 2013). Despite his scientific credibility, at the time, his push for action was halted following the anti-nuclear campaign led by the Center Party (previously the Agrarian Party) that resulted in the referendum on March 1980 rejecting nuclear energy (Hedberg, 2012). For years to come, the conflict between phasing out nuclear energy, which would indicate growing reliance on fossil fuels, and mitigating the effects of climate change would be a subject of disagreement. Yet, the discussion surrounding Sweden's increased awareness of environmental degradation and climate change was re-ignited in 1987 with the publishing of the Brundtland Report (Knaggård 2009), which elevated climate change to a major political issue (WCED 1987).

The second problem existent in the problem stream was not related to environmental and climate change issues but concerned Sweden's taxation system, which had serious difficulties in the 1980s. With substantial portions of the population paying more than 80 per cent of marginal tax rates, the government's aim became lowering income tax rates without running a large budget deficit (Sternier, 1994). By the 1980s,

the Swedish tax model had been severely criticized within Sweden, with many notable pundits claiming that the system was in crisis, despite the fact that it was still praised by many outside the nation (Loughlin et al., 2005). One of the key actors who brought this to notice is Nobel Laureate Gunnar Myrdal, an economist and sociologist associated with the left-wing. He stated that Sweden had become a nation of wranglers as a result of high marginal tax rates, which dissuaded individuals from saving and exerting effort. (Björklund et al., 1995). Additionally, high tax rates generated significant incentives for illegal tax evasion and legal tax avoidance—the structuring of transactions to avoid paying taxes (Norrman & McLure, 1982). Conservative economists complained that the high levels of corporate income tax, were impeding efficient capital allocation (Loughlin et al., 2005). In any case, both the right and the left realized that recent economic and fiscal difficulties made it more challenging to continue the high levels of welfare support to which Swedes had grown accustomed. Put differently, at the time, the Swedish tax system was being assailed not only by typical adversaries on the political right and many economists, but also by politicians on the left (Björklund et al., 1995). To accommodate both sets of opponents, a circle has to be squared by lowering high levels of individual and corporate taxation while maintaining high social service standards. In the end, it was evident to the national government that a tax reform was unavoidable.

6.6 The political stream

Two significant processes were dominating the political stream in Sweden. The first was the ongoing debate on Sweden's taxation system, which was doomed to fail due to the fact that it no longer distributed earnings effectively and promoted the wrong type of investment (Castanheira, 2014; Loughlin et al., 2005). Additionally, structural issues with Sweden's tax system raised concerns about alternative revenue sources, as tax rate reductions were especially sensitive in a country like Sweden, where previous tax policy was based on the premise that high income tax rates assisted the redistribution of wealth from the wealthy to the poor. Consequently, there was political pressure from within the country to improve the system. At the same time, there was external economic pressure from other nations who hoped to draw investment and capital out of Sweden by lowering tax rates (Castanheira, 2014).

Despite internal disputes between the liberal parties and the ruling Social Democrats, the party's leaders eventually agreed to reform the tax system (Agell et al., 1996). Several key Social Democrats (such as Finance Minister Kjell-Olof Feldt and Deputy Minister Erik Asbrink) fueled the formation of the political consensus by agreeing that the current tax system was "broken" and in desperate need of a substantial overhaul (Knaggård et al., 2021). Hence, rather than isolating tax reform as a pet product of a single party and increasing the possibility of future reversal, political leaders discovered methods to form coalitions across party divisions over time.

The second aspect that dominated the political stream was the increased focus on environmentalism. Whereas political parties did not address the environment in their manifestos between 1960 and 1964, by 1970s, all parties were discussing it (Naturvårdsverket, 2010). During the late 1980s, the

subject took up even more of the campaign's attention, and in Sweden's political history, 1988 is commonly referred to as the year of the "green breakthrough" (Bennulf & Holmberg, 1990). All parties promised to take action on the environment, which appeared to outweigh all other problems in public opinion polls. Furthermore, in 1988, the Swedish Green Party (Miljöpartiet de Gröna) entered parliament (mainly at the expense of the bourgeois parties). The entrance was unique as Sweden's party system, possibly the most stable and 'frozen' in Europe, received a new party in Parliament for the first time in 70 years (Bennulf & Holmberg, 1990). With 5.6 per cent of the votes it became the first environmentalist party elected to Parliament. The Green Party's attitude was once somewhat revolutionary, with a significant emphasis on environmental and animal welfare concerns. According to domestic policy commentator Tomas Ramberg (2014) of the Swedish Radio (Sveriges Radio), the party was formed in reaction to dissatisfaction with incumbent parties' environmental policy. Ramberg notes:

"In the beginning, the Green Party was a party which was very radical in environmental issues, Ramberg says, wanting to quickly shut down nuclear power, quickly scale back the military and quickly shorten working hours and so on" (Ramberg, 2014, n.d.)

When the Green Party was elected to the Swedish parliament in 1988, administrative and legislative changes ensured that environmental concerns remained a high priority on the political agenda. Simultaneously, the Green party was effective in making the public understand and accept the logic behind introducing economic measures such as the carbon tax to meet climate targets. According to Bennulf & Holmberg (1990) the Green Party's first legislative appearance is simply one of numerous - albeit the most obvious - reasons why 1988 may be considered a watershed year in Swedish politics.

6.7 The policy stream

The ideas around the use of environmental economic instruments started to grow in the 1960s. A number of economists grappled with the idea of a Pigouvian taxation system that is aimed to reduce or eliminate the negative externalities. For instance, in Coase's (1960) seminal work "The Problem of Social Cost", he noted that:

"In the standard case of a smoke nuisance, which may affect a vast number of people engaged in a wide variety of activities, the administrative costs might well be so high as to make any attempt to deal with the problem within the confines of a single firm impossible. An alternative solution is direct Government regulation (Coase, 1960, p. 17)".

Together with Coase there was a much larger body of scholars forming a policy community to investigate the use of environmental economic instruments as a viable policy alternative. Since the 1970s, like Coase,

substantial scholarly research has focused on the regulatory potential of economic policy instruments, particularly in the field of environmental economics. The conclusion was that economic tools like taxes have a tremendous deal of promise to alleviate the conundrum of choosing between ecological and economic interests because they would allow to achieve environmental goals at considerably lower costs.

Economic instruments have been an element of Swedish environmental policy for a long period of time, but did not achieve significant success until the late 1980s (Nyman, 1998). In Sweden, Dahmén an economics scholar, affiliated with the Liberal Party worked on the promise and problems of carbon pricing. In 1987, Dahmén authored an article titled *The Environment and the Market* in *Svensk Tidskrift*, a magazine for politics, economics and culture. In the article Dahmén noted that all of Sweden's political parties appear to have neglected market mechanisms as a means of decreasing emissions, believing that only legislation was a viable option (Dahmen, 1987). The Liberal Party was in favor of such an economic instrument to cope with the effects of climate change. Initially, the Social Democrats opposed the carbon price, claiming that it would allow industries to 'purchase a right to pollute' (Lundgren, 2005). Furthermore, the Social Democrats argued that the tax reform would result in less government revenue to give to people in need. However, over time the perspectives of the Social Democrats changed as a consequence of growing awareness and increased pressure. The increased pressure was partly a result of the work of Lönnroth and Bolin, who later became the first head of the IPCC, that suggested a carbon tax in 1988 in one of Sweden's largest and most popular newspapers (Jonsson et al., 2020). In this report they noted:

“In our opinion a special carbon tax as a proportion of the carbon content of a fossil fuel should be discussed. This together with a redistribution of the (existing) energy taxes in the same direction should during the 1990'ies actively contribute to an acceleration of new (energy) technology development in our country” (Bolin & Lönnroth, 1988, p.5)

In response, the Social Democrats established the Commission of Inquiry on Environmental Fees (CIE), comprised of representatives from all parliamentary parties and a diverse range of organized interests, to explore the feasibility of establishing environmental levies. It held a public hearing and proposed a variety of environmental levies, including those on nitrogen oxides, and sulfur dioxide (Nyman, 1998).

6.8 Window of opportunity and policy entrepreneurs

The 1988 electoral win of the Social Democrats provided a window of opportunity for the carbon tax to emerge on the agenda. As described above, the country's most prominent political party at the time (i.e., Social Democrats), shifted from being skeptical of economic instruments to believing that they are necessary for environmental protection (Andersson, 2019; Scharin & Wallström, n.d.). The shift in ideology was a consequence of increased knowledge provided by key figures such as Bolin and Lönnroth who served as advisors to the Social Democratic Party, and had comprehension of the importance of addressing

environmental concerns. (Scharin & Wallström, n.d.). Bolin and Lönnroth were effective in coupling the problems stream, the policy stream and the political stream with the idea of a carbon tax as a solution to both growing environmental awareness and the required tax reform (Bolin & Lönnroth 1988).

At the time, this new program was considered a perfect fit as there was already an emphasis on tax reform and growing awareness of environmental concerns in the political stream. Furthermore, the party advocated for a balance of industrial, economic, and environmental interests, as well as parliamentary discussion (Higa et al., 2020).

6.9 From agenda to carbon tax

With the carbon tax on the table, it required the proper formulation to be adopted by key government entities before it could be implemented. As described above, in the agenda-setting phase of the policymaking process, Bolin and Lönnroth acted as policy entrepreneurs. In particular they used their knowledge, power and tenacity to connect a solution to the separate problems as described in section 7.5. In the adoption phase, new policy entrepreneurs were involved (Bolin & Lönnroth, 1988).

In 1989, Bengt Westerberg, the Liberal Party's leader, demanded that the CIE drafted the carbon tax and identified new revenue sources to pay income tax reductions (Jonsson et al., 2020). During this process of designing the carbon tax the CIE followed the constitutional procedure (see figure 11) of soliciting public feedback on Government ideas before submitting them to Parliament, which involves business and other stakeholders in the decision-making process (Hammar & Åkerfeldt, 2011). Hence, this process is subject to discourse and consensus as a policy that is innovative in nature necessitates numerous forms of networking and communication.

According to a study by Higa et al. (2020), the supporting coalition consisted of: the Environmental Charge Commission, the forestry sector, the bioenergy sector (svebio), academia, NGO's, the Ministries of Finance, Environment and Enterprises, the Green Party and the Centre party. On the other hand, the pulp and branch industry, the energy intensive sector, the Moderate Party and the Liberal Party were against. The energy-intensive industry, which is critical to the Swedish economy and the livelihoods of both Social Democrats (in terms of job opportunities), and conservatives (in terms of industrial competitiveness), was the most vocal opponent of the carbon tax. Simultaneously, both the Moderate and Liberal political parties expressed worry about the carbon tax's impact on industry competitiveness and contended that more levies were unnecessary. Throughout the adoption process, the Social Democrats played a critical role in fostering communication between the Moderate and Liberal Parties (Higa et al., 2020). They convened group discussions on the major issues affecting the industries' interests. To be more precise, in late 1989 and early 1990, the Social Democrats and the two Liberal parties held negotiations to reach a final agreement on tax reform. At times, the negotiations were complicated, and they came perilously close to crumbling on numerous occasions. Carbon pricing was not discussed during these discussions because all three parties

had previously agreed to incorporate it. Carbon tax appeared to be an obvious fit within the tax reform (Sterner, 1994).

Despite the ongoing political negotiations and general opposition to new levies the vast majority of the Swedish people supported climate and energy policies as the carbon tax signalled a shift in thinking and decisive action to address environmental issues. For the public, making the carbon tax a component of the broader tax reform was ultimately a sensible choice, since it aided in garnering support for the latter (Higa et al., 2020). Eventually, the proposal for a carbon tax by the CIE was broken into four pieces (as also described in chapter 6 (1) A carbon tax of 0.25 SEK per kg CO₂ on oil, coal, gas, and liquefied gas, as well as equivalent levies on gasoline and diesel, (2) The current energy tax was halved, (3) Energy was taxed at the same rate as other industries (a key aspect of the tax reform) and (4) The carbon tax retained the energy tax discounts and deductions for energy-intensive companies. The section that follows dives into the specific design of the carbon tax in Sweden. The carbon tax design is expressed in terms of the design variables as discussed in chapter 5 (i.e., tax base, tax rate and revenue distribution).

6.10 The tax base of the Swedish carbon tax

In 1991, Sweden levied a carbon tax on all major fossil fuels, that is, gasoline, oil, and coal used for heating and transportation (Hammar & Åkerfeldt, 2011; Sjölin & Wadeskog, 2000). Considering the point of taxation, the tax is levied upstream (with a price signal downstream) on the supply of fossil fuels to end users in any industry (Ricardo Energy, 2018). Since the introduction of the tax, exemptions have been a significant component for various reasons (Scharin & Wallström, n.d.). For example, sectors exposed to trade, primarily industry, were initially taxed at a lower rate than households. Lower taxes were levied on the energy-intensive industry sector to cope with the potential distortion of international competitiveness (Jonsson et al., 2020). On the contrary, the household and service sector and heating production were faced with higher taxes (Andersson, 2019; Hammar & Åkerfeldt, 2011; Ricardo Energy, 2018). Sweden modified its taxes in 1993, charging businesses only 80 Swedish Krona per metric ton of carbon while charging other customers 320 Swedish Krona. Currently, these enterprises are seen to have had ample time to respond, and the environmental drive has become stronger over time, resulting in the elimination of virtually all exemptions and reduced tariffs.

Apart from dealing with distortions in international competitiveness, with the exemptions, the Swedish government minimises duplication of the decarbonisation price signal created by the overlap of identical policies (Hammar & Åkerfeldt, 2011; Jonsson et al., 2020). For instance, the new carbon tax resulted in “double-regulation” for already tightly regulated fossil fuel businesses governed by the energy and carbon tax legislation.

Also, since 2005, The majority of energy-intensive industrial installations have their GHG emissions covered by the EU ETS Community-wide economic system (Jonsson et al., 2020). Hence, Since

2005, Sweden has not placed a carbon tax on fuels used by industrial sites under the EU ETS, preferring to employ a single broad economic instrument to incentivize GHG emission reductions.

6.11 The tax rate of the Swedish carbon tax

In Sweden, the initial carbon tax rate was set at 250 Swedish krona (SEK) (24 EUR) per ton of carbon, or SEK 0.25 per kilogram of carbon emissions. The tax rate has continuously climbed throughout the decades, reaching 1200 SEK (114 EUR) per metric ton of carbon in 2021 (Hammar & Åkerfeldt, 2011; Jonsson et al., 2020). The stepwise increase makes them economically and politically viable since it gives businesses and individuals time to adapt, especially lower-income households where energy and fuel prices account for a larger share of annual income. Carbon tax rises have been combined with other tax cuts, ostensibly to avoid overall tax increases, address undesirable distributional impacts, and stimulate economic development (Hammar & Åkerfeldt, 2011; Jonsson et al., 2020).

The tax rates are determined based on average carbon emissions and energy use and actual emissions are not quantified. To facilitate administration, the carbon tax rates in the tax code are given in weight or volume units for the various fuels. When developing the carbon taxation system in Sweden, it was vital to strike a compromise between environmental goals and carbon leakage concerns. In accordance, the existing energy tax rate was halved, increasing the net tax of all fuels (Jonsson et al., 2020). While some of the 1991 tax rises might be termed re-labelling, the amount of fuel taxes was still pioneering and exceedingly high compared to other countries.

6.12 The revenue distribution of the Swedish carbon tax

From 1993 to 2000, Sweden's carbon tax revenue was relatively steady, then rapidly increased from 2000 to 2004 due to a tripling of the carbon tax rate, from approximately 300 SEK (34 EUR) in 2000 to over 900 SEK (99 EUR) in 2004 (Carl & Fedor, 2016; Sumner et al., 2013). According to the Swedish Tax Agency (2008) the tax generated approximately 25 billion SEK (2.75 billion EUR) each year in 2005, 2006, and 2007 (Swedish Tax Agency 2008a). The per capita revenues were \$381 and the annual revenue was \$3680M (Carl & Fedor, 2016). In terms of distribution, 50 per cent of the collected taxes is spent on general funds and 50 per cent is used for so-called revenue recycling, that is the return of revenues to the industry or households through tax reliefs or rebates (Carl & Fedor, 2016). Revenue-recycling in the Swedish case refers to income-tax reductions, corporate tax cuts, energy price adjustments (Carl & Fedor, 2016). Figure 13 gives a schematic overview of the carbon tax policy design in Australia including each of its elements as discussed in section 6.10-6.12

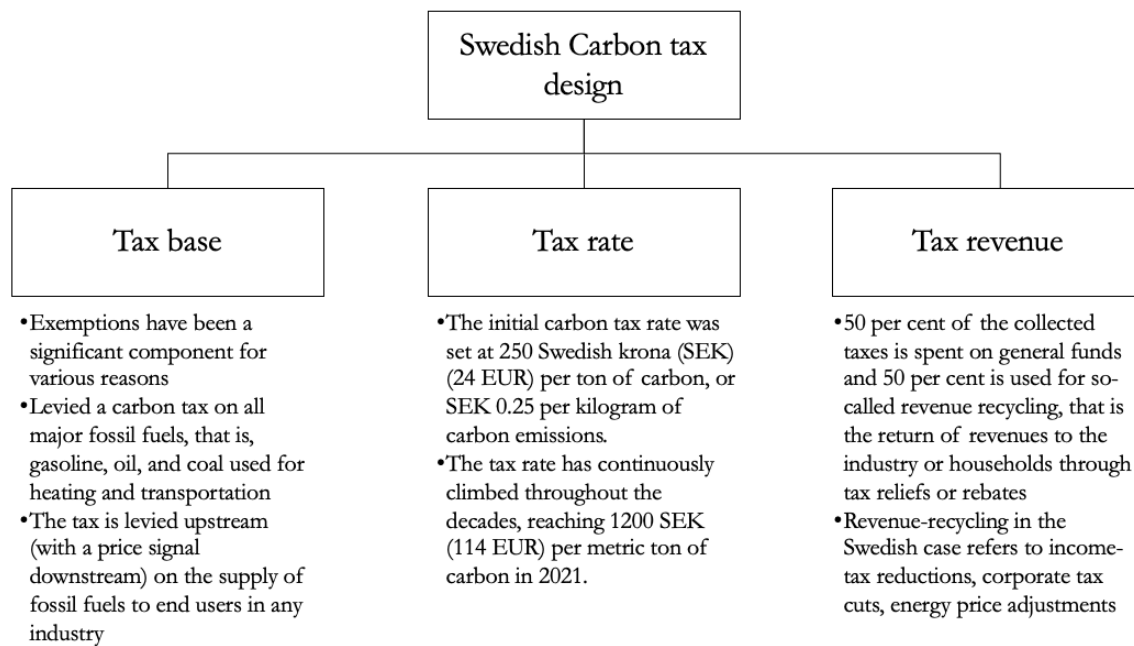


Figure 13: Schematic overview of the Swedish carbon tax policy design.

6.13 From formulation to implementation

During the negotiation process, due to the strength of lobbies and the influence of policy actors involved in tax planning in Sweden, the sector was able to get exemptions from the new energy levies (Higa et al., 2020). Nonetheless, the changes in energy and carbon taxes implied an increase in net tax revenues (Hammar & Åkerfeldt, 2011).

However, before the CIE could bring the proposed package to a necessary vote in parliament, a political crisis erupted. Specifically, the banking crisis developed, followed by a severe economic downturn, widespread unemployment, and large fiscal deficits. Subsidization and nationalization were ineffective solutions to recessions, and hence the emphasis shifted to market liberalization and competition (Weishaar, 2018). The Swedish economy's troubles had gotten worse, and in the early 1990s, the government launched a budgetary “rescue package” to avert disaster. Given the seriousness of the problem the political parties came together and did what was necessary to save the system (Weishaar, 2018). With the rescue package in place, the Parliament rejected the first proposal of the CIE due to disagreements over various provisions, including the inclusion of a temporary wage freeze, which forced the administration to resign in mid-February. Two weeks later, the government was reinstated with a new Minister of Finance. As several of the actors involved later state, the carbon tax was not even a consideration under such circumstances (Knaggård et al., 2021). Following the initial resistance, the fundamental difficulties around the carbon tax were resolved, and provisions were put in place to ensure industry exemptions.

One month after being re-elected, the administration presented Parliament with a tax reform package that included the carbon tax (Swedish Government, 2003). The Social Democratic, the Center Party and Liberal Party voted in favour of the reform. Three disparate political parties banded together to form a cohesive front in support of the carbon tax, resulting in a legislative majority. The tax was enacted in 1991 and has since grown in breadth and popularity. Although the carbon tax appeared to be well balanced, in Sweden in 1991, a confrontation erupted between the environmental movement and industry (Higa et al., 2020). According to the environmental movement, the industry was given too many exemptions, while the industry thought that the higher levies weakened their competitiveness. In the end, it was agreed that industry would be excluded from the energy tax due to its competitiveness on a global scale. This brought energy prices for businesses down to where they were before the tax reforms (industry had gotten lower corporate taxes in exchange for higher environmental taxes). Surcharges on consumers and the transportation sector were imposed to avoid increasing the budget deficit (Bressers & Huitema, 1999). The reason the Swedish charges could be increased to such a high level is mostly due to strong public support for environmental policy at the time they were discussed, as well as the fact that they were related to cost reductions elsewhere (income and business) (Bressers & Huitema, 1999). Thus, in terms of the carbon tax's interpretative effects (as defined by PFT), it is evident that public support is critical for preventing negative feedbacks from the carbon tax's implementation. To be more specific, the carbon tax was in line with the general perspective of the public that something had to be done to counteract the harmful effects of climate change. During that time the carbon tax was consequently interpreted as an essential tool mitigate the effects of increased CO₂ emissions. In terms of resource effects (as defined by PFT), it is clear that redistribution of the tax base was effective in eliciting positive feedback, which may have contributed to the carbon tax's increased acceptability in Sweden. Put differently, the newly implemented carbon tax did not greatly increase the cost of adopting, which reduced the chance of exit from the current policy path. Furthermore, the implemented carbon tax directly solved the two problems as depicted in the problems stream of the MSF. With regard to the political stream within the MSF, it is evident that the carbon tax was in line with the national mood, the party ideologies and balance of interest at that time. To be more specific, at the time of implementation and the years following, the carbon tax was credited with being the principal driver of emissions reductions, and a growing body of literature (i.e., ex-ante analyses, ex-post evaluations, and interview-based research) demonstrated that the taxing is both economically and environmentally successful (Hammar & Åkerfeldt, 2011). In particular, the increase of biofuel use in the district heating sector has been a substantial part of the decarbonisation of Sweden (Ericsson & Werner, 2016). While the carbon reductions are obvious and publicly confirmed, Sweden also had tremendous economic growth of 51 per cent (Jonsson et al., 2020). In other words, Sweden has managed to minimize CO₂ emissions while maintaining a sound economy. A review by Sweden's tax foundation adds on the findings, stating that between 1990 and 2019, the carbon tax increased GDP per capita by more than 50 per cent in real terms. Overall, the case of Sweden shows that the carbon tax

provides incentives and resources that facilitated the long-term sustainability of the carbon tax. For further clarification purposes, figure 14 and figure 15 are presented below. Both figures give a schematic representation of the key events and processes leading to the policy outcome.

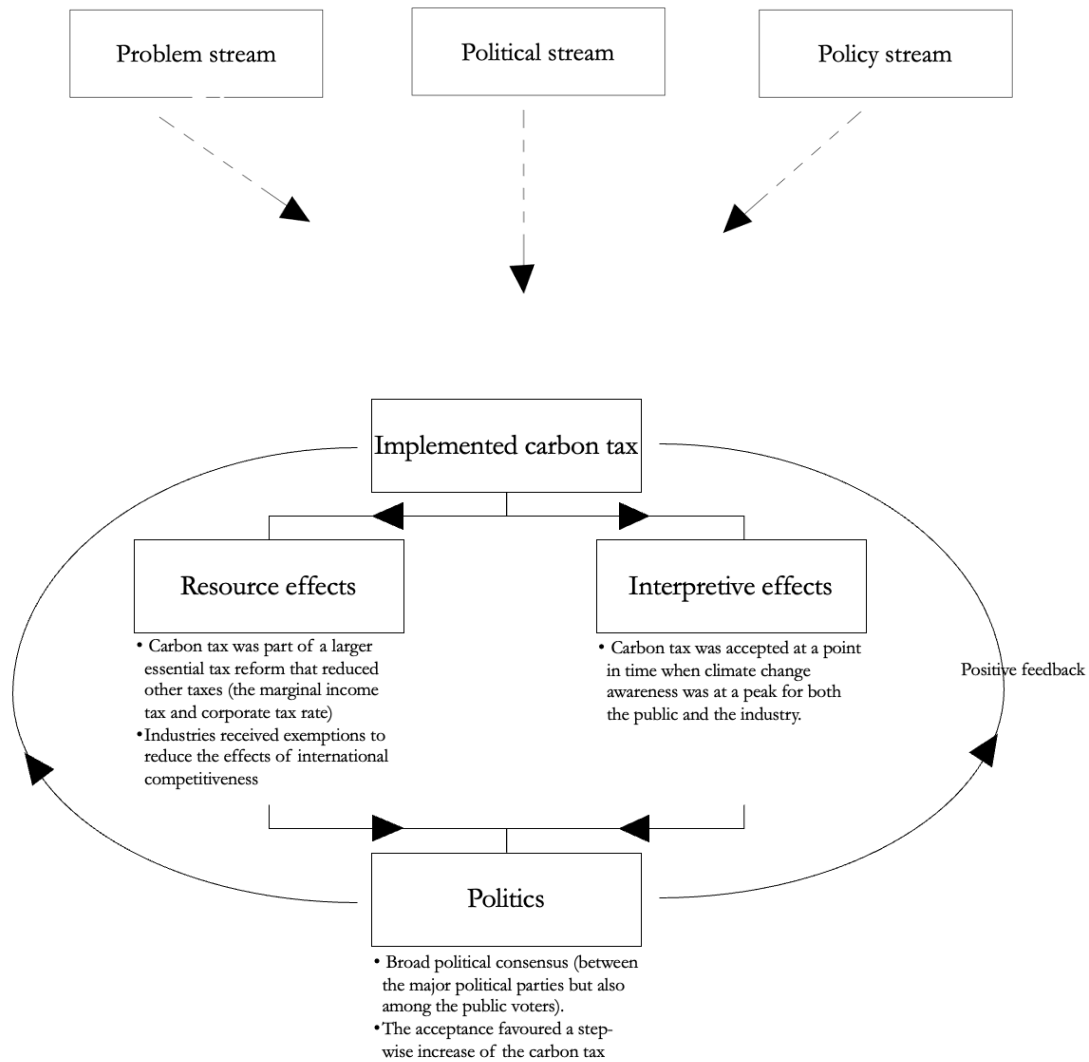
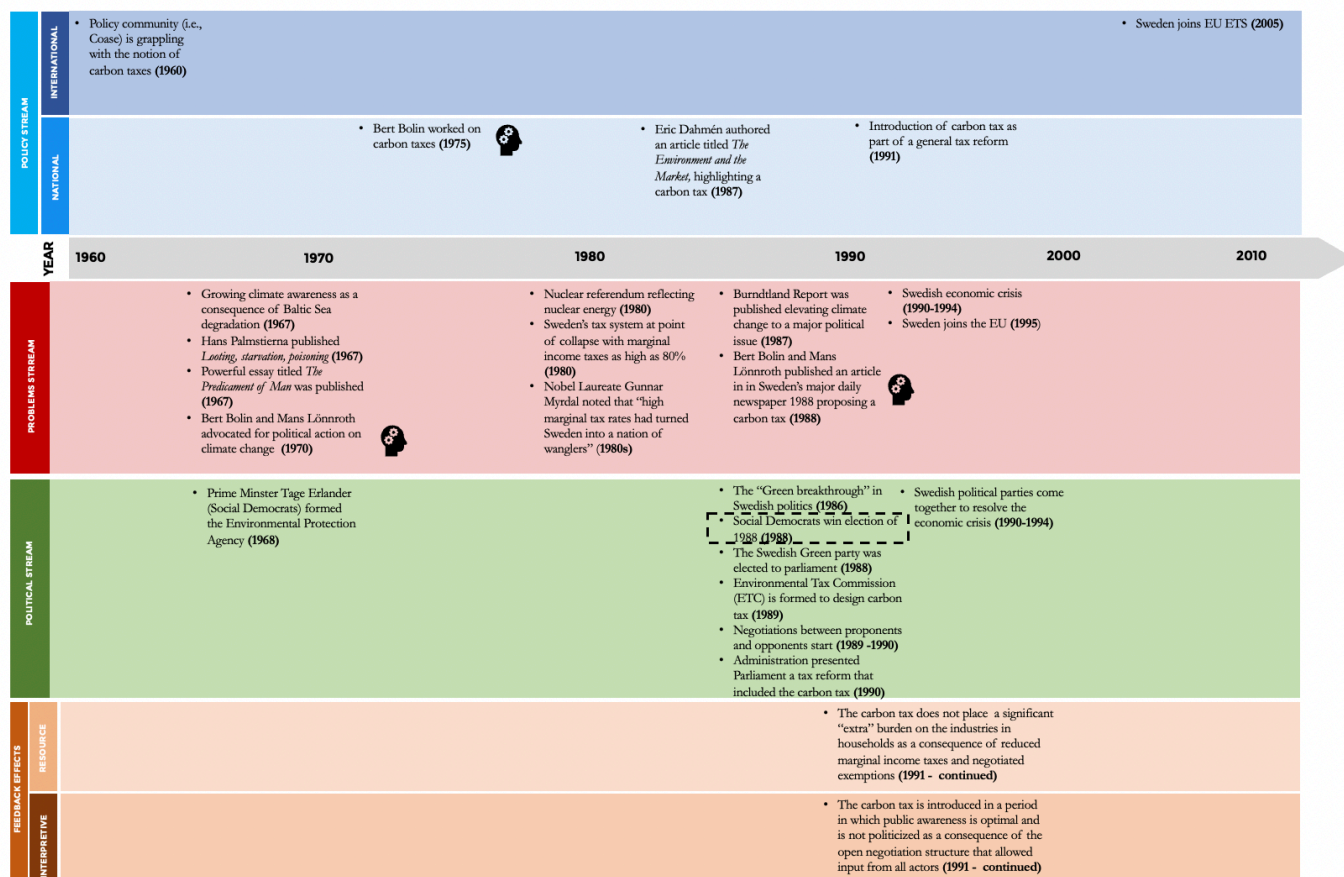


Figure 14: A schematic overview of the feedback identified for the case of Sweden.



= Policy entrepreneur

= Window of opportunity

Figure 15: Timeline of the carbon tax policymaking process in Sweden including the policy stream (blue), the problem stream (red), the political stream (green), the policy entrepreneur(s), the policy window and the feedback effects (orange).

Chapter 7. The Australian carbon tax: from agenda-setting to reversal

7.1 Introduction

Chapter 7 delves into the policymaking process for the Australian carbon tax. The chapter opens (7.2) with an overview of the key characters and groups involved in the policymaking process. Section 7.3 then discusses Sweden's governmental system and legislative procedure in further detail. Following that, section 7.4 delves into Australia's energy system. Figure 10 demonstrates how the preceding three paragraphs serve as the building blocks necessary to understand and analyse the carbon tax's policymaking process. After establishing the groundwork, paragraphs 7.5–7.13 examine the policymaking process from agenda setting to its current level of continuation.

7.2 Key actors and parties

Table 5 summarizes the players and parties regarded significant within the confines of the Australian case. The table contains the name of the actor's or party's label, a brief description, and a list of sources. In addition to the table, figure 16 depicts the political parties' positions on the political spectrum to help the reader understand their underlying positions and choices.

Table 5: Key actors and parties involved in the Australian case.

Actor or Party	Description	Source
Tony Abbott	Tony Abbott is a former Australian politician who led the Liberal Party from 2009 to 2015. From 2013 to 2015, he served as Australia's 28th Prime Minister.	(Parliament of Australia, n.d.)
Malcolm Turnbull	Malcolm Turnbull is a former politician from Australia. He served as Liberal Party Leader twice: from 2008 to 2009 as Leader of the Opposition, and from 2015 to 2018 as Prime Minister.	(Parliament of Australia, n.d.)
John Howard	John Howard is a former Australian politician who served as the country's 25th Prime Minister from 1996 to 2007 and as the Liberal Party's Leader from 1995 to 2007.	(Parliament of Australia, n.d.)
Ross Garnaut	Ross Garnaut is an Australian economist who works at the University of Melbourne as a vice-fellow chancellor's and professorial fellow of economics.	(Garnaut, n.d.)
	On April 30, 2007, at the request of Kevin Rudd, then-leader of the Australian Labor Party and Leader of the opposition,	

Australia's state and territory governments appointed Garnaut to examine the economic impacts of climate change and recommend medium- to long-term policies and policy frameworks to enhance the prospects for sustainable prosperity.

Julia Gillard

Julia Gillard is a former Australian politician. From 2010 to 2013, she served as Australia's 27th Prime Minister and Labor Party Leader.

(Julia Gillard, n.d.)

Kevin Rudd

Kevin Rudd is a former Australian Labor Party politician who served as Australia's Prime Minister twice (2007-2010 and June 2013 to September 2013).

(Kevin Rudd, n.d.)

The Australian Labor Party (ALP)

The Australia Labor Party is Australia's main centre-left political party, and along with the Liberal Party of Australia, one of the country's two major parties.

(The Australian Labor Party, n.d.)

The Australian Greens (The Greens)

The Australian Greens were created in 1992 as a federation of eight state and territory parties. The party's four guiding values are environmental sustainability, social justice, grassroots democracy, and peace and nonviolence.

(Garner, n.d.)

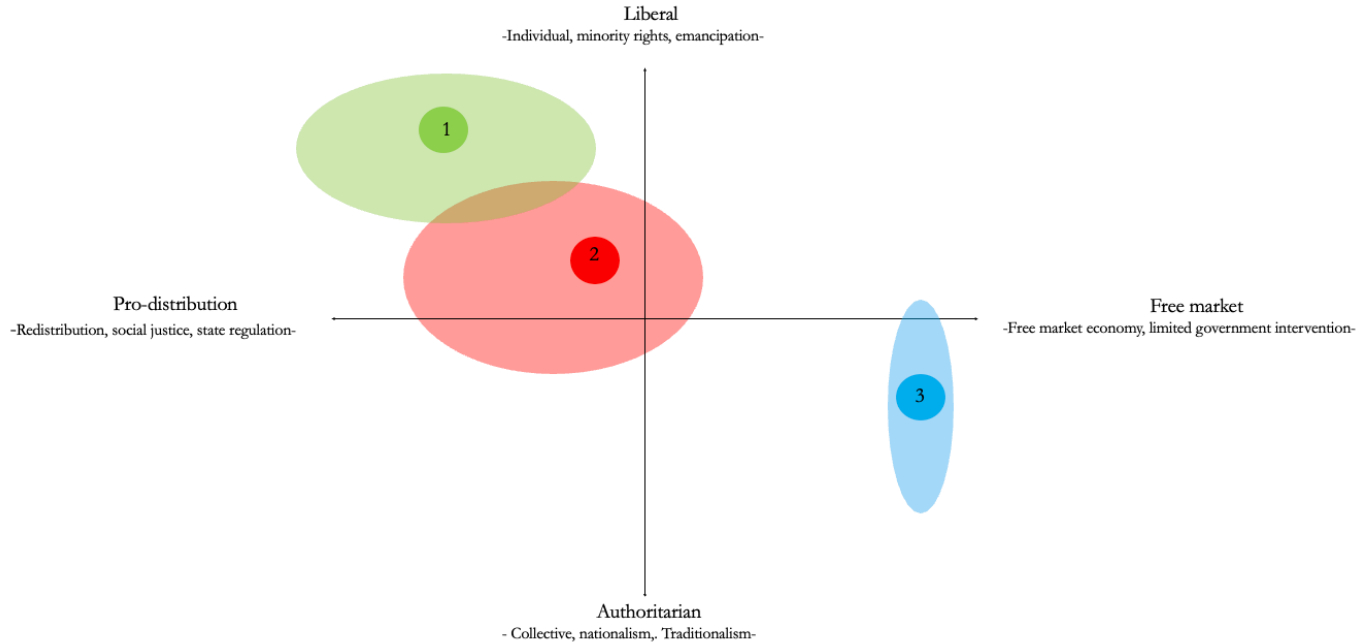


Figure 16: The three major political parties (The Australian Greens in green, The Australian Labor Party in red and The Liberal Party in blue) positioned on the political spectrum.

7.3 Australian system of government

Like Sweden, Australia is a representative democracy meaning that the people elect candidates during federal elections (held every three years) to represent them in Parliament. In Australia, there are two Houses in Parliament: The House of Representatives (lower house) and the Senate (upper house). To become law, proposed legislation must be approved by both Houses of Parliament (figure 17). The two Houses have equal authority, except that the Senate is limited in its capacity to introduce or amend certain types of financial legislation directly (Parliament of Australia, n.d.). The House of Representatives has 151 members, each of whom represents a 165,000-person election constituency. The House of Representatives is divided into three major parties: the Australian Labor Party, the Liberal Party of Australia, and the Nationals (Parliament of Australia, n.d.). The Senate is made up of 76 members, with twelve from each of Australia's six states and two from each of the country's internal territories. There have been 45 elections for the House of Representatives and 43 elections for the Senate since 1901. From the 45 elections, 31 House of Representatives elections has been won by non-Labor parties or coalitions, while the Australian Labor Party has won 14 (Parliament of Australian, n.d.).

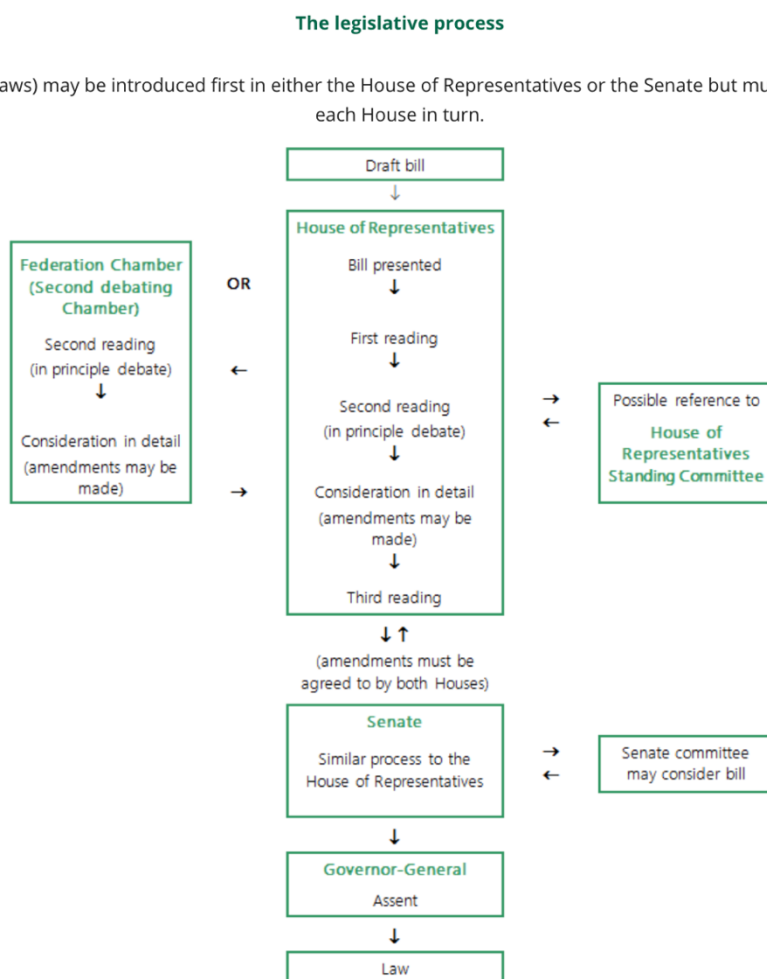


Figure 17: Visual representation of the law-making process in Sweden (Parliament of Australia, n.d.)

7.4 Australia's energy setting: a carbon intensive economy

Australia had one of the highest per capita CO₂ emissions globally when the carbon tax was implemented; in 2012, it was predicted to be 17.75 tonnes, nearly five times that of Sweden (4.89 tonnes) (Ritchie & Roser, n.a.). Despite growing knowledge, incentives to encourage solar panel use, and a cultural shift toward renewable energy, Australia remains substantially reliant on fossil fuels. At the moment, coal (black and brown coal combined) and natural gas account for around 79 per cent of total energy generation. Additionally, natural gas consumption and production continue to increase as a result of increased LNG exports (Australian Government, 2020). Additionally, Australia remains a significant exporter of coal, and its economy is reliant on the availability of inexpensive fossil fuels. In fact, most of Australia's energy production is exported. Between 2018 and 2019, more than half of the produced energy was exported (Australian Government, 2020).

Given the fossil fuel sector's favourable economics, it is unsurprising that Australia's energy landscape is dominated by fossil fuel lobby groups opposed to climate action and proponents of fossil fuels. Indeed, a 2020 study identified over 2,000 instances of fossil fuel lobbying in the last five years, including efforts to weaken and oppose climate change regulation, promotion of fossil fuel development, active funding of political parties through donations, active campaigning against climate-conscious politicians, and appointment to prominent political positions (Influence Map, 2020).

According to Australia's energy statistics for 2020, renewable energy sources provided barely 2 per cent of the country's energy. Renewable energy sources account for 19.7 per cent of overall generation capacity in the electricity sector. This is a 3 per cent increase over 2019 levels. This increase in renewable electricity generation can be linked to the expansion of solar energy installations, which are also Australia's largest renewable energy source, accounting for 9 per cent of total generation capacity (Australian Government, 2020). While this is a welcome development, alternate energy sources, including renewables, are mostly disregarded. For example, Australia has no nuclear power, and nationwide limitations on uranium mining prevent it from being used as a source of energy or exported to countries that do (Cronshaw, 2020).

Ultimately, it is widely acknowledged that Australia has failed to act on climate change, with the conservative Howard administration particularly opposed to international action. To be more precise, Australia produces the most CO₂ per capita of any developed country on the planet. Coal remains to be a backbone of Australia's electricity supply, and Australia's reliance on fossil fuels has been a stumbling block, with the fossil fuel industry or carbon lobby (which includes the coal, electricity, aluminium, petroleum, minerals, and cement industries) exerting significant influence on policy and allegedly serving as a critical insider in the development of coalition policy (Hare, 2021). As a result of this influence, climate policy has tended to prioritize low-impact activities, and where legislation has formed, misdirected efforts, underfunding, and poor implementation have been prevalent.

7.5 The Problems Stream

Climate change was the most conspicuous condition that was eventually articulated as a problem in the problems stream. Prior to the carbon tax introduction, climate change's ramifications, particularly action, have aroused controversy in Australia at various points in history (Chubb, 2014). Both international and national study groups focused on the impacts of climate change and Australia's mitigation options and numerous independent reports were released over a two-decade period (Crowley, 2013a). Moreover, Australia participated actively during climate conferences in the international arena, which were important indicators for stressing the importance of climate change mitigation (Zillman, 2008). For example, the 1988 Toronto Conference on Climate Change, which was attended by policy makers, international scientists, non-governmental and governmental organizations, is recognized as the first big focal moment that triggered public consciousness to the global significance of climate change (Crowley, 2013b). During the Toronto Conference, it was proposed and agreed that industrialized countries stabilize their 1988 emissions levels by 2000 and reduce them by 20 per cent by 2005. Within Australia, the proposition was favourably embraced, particularly by Labor Prime Minister Bob Hawke, who favoured international collaboration and vowed that Australia would ratify the Toronto agreement. During these years, Hawke was not merely a proponent of international collaboration, but also a leader in international efforts to resolve the issue (McDonald, 2005). However, given Australia's reliance on fossil fuels, meeting the Prime Minister's claimed carbon reductions would have necessitated world-leading mitigation efforts. Although the recommendations were not implemented, the first seeds of climate policies were sown over the same period and businesses grew more aware of the need to reduce emissions and realized that rising environmental pressure came from Hawke's administration.

With the awakening of climate change as a major problem, the Stern Report in the run-up to the 2007 election has been regarded as a major catalyst in emphasizing the climate change problem (Crowley, 2013b). The Stern Report emphasized the benefits of strong, early action considerably outweigh the costs (UNFCCC, 2016). This message was important for Australia as the coalition government has consistently emphasized cost as primary impediment to moving to a low-carbon economy. Apart from the Stern Report, media also played an important role in highlighting the effects of climate change. By mid-2000s, the national and international headlines were dominated by anticipated disastrous results of climate change, including the coastal erosion along the Torres Strait, which are part of the state of Queensland ("Local resident joins with Al Gore to fight climate change", 2006). Moreover, the devastation of Australia's Millennium drought boosted public awareness of climate change, as well as support for action. Bushfires, as a consequence of the drought were broadly covered in newspapers and magazines. For example, the journal of the N.S.W. Public School Teachers Federation, Tognolini (2007) stated:

"Both fires were started by lightning strikes and both burned over bush dried out by one of the longest droughts in Australia's history. Both the drought and the dry storms that brought

the lightning are the result of climate change. While 2006 was recorded as one of the hottest years ever, it is predicted that 2007 will be even hotter” (Tognolini, 2007, p.14)

Prime Minister John Howard, leader of the Coalition conservative government declared the drought to be one of the worst in the history of Australia (Chubb, 2014). On international level the media also contributed to the growing awareness of climate change. For instance, on August 2005, television news broadcasts depicted the devastation caused by Hurricane Katrina and the subsequent floods in the United States' southeast, which killed almost 2,000 people and destroyed property worth more than \$US80 billion (Chubb, 2014). At the same time, Al Gore's 2006 film, *An Inconvenient Truth*, popularised the cause of climate action. Furthermore, a few months later, in February 2007, the United Nations Intergovernmental Panel on Climate Change (IPCC) released its fourth report, concluding unequivocally that human activities cause climate change. Overall, climate change became a staple of popular television series and a topic of daily conversation.

7.6 The political stream

In characterizing the political stream, Kingdon (1995) includes aspects such as the political mood, elections, changes in administration, changes in partisan distributions, and interest group pressure campaigns.

This case departs from the political mood.

In March 2007, Kevin Rudd, the leader of the Labor party and the Opposition, declared that climate change is Australia's generation's greatest moral problem (Parr, 2019). His objective was to create a national agreement on climate change and to study how the Australian society can best reorganize to deal with this (Chubb, 2014; McDonald, 2015a). At the time, Rudd made a straightforward strategic choice to own climate change as a policy problem and political crusade (Pearse, 2015). He appointed Ross Garnaut, a distinguished economist, along with six Labor premiers and two territory leaders, to offer suggestions on the best course of action. Moreover, in this period, Labor, both nationally and in the states, was attempting to exploit climate change politics by portraying Prime Minister Howard (part of Liberal Party) as intransigent and out of touch with modern nation's ambitions. Labor painted Howard as a skeptic and exploited his customary virtues of prudence and dependability against him. According to the Labor Party Howard was a victim of a worldview molded by his knowledge of Australia's coal-dependent economy, his natural distrust of any legislation that threatened free market fundamentals, and a conservative temperament that disregarded environmental risks (Chubb, 2014). Despite publicly dissenting the Liberal Party and Howard in particular, the prime minister announced an emission trading scheme (ETS) that will be set up if he wins the 2007 federal election. To be more specific, he highlighted on ABC's morning show that introducing an ETS and establishing a long-term objective for carbon reduction will be the most consequential economic decision Australia makes in the next decade (ABC News, 2014).

Both major parties now have comparable strategies and ideas to hamper climate emissions. Despite the efforts of Howard, by 2007, people had lost confidence in Howard, who had been in power for 11 years. Furthermore, the ETS as proposed by Howard was far too little far too late. Furthermore, in retrospect, Howard admitted that the 2007 strategy was merely a political tool and pragmatic realization that he was facing a political storm from the Labor opposition with more "fashionable ideas" on such issues (Butler, 2017). By 2007, the establishment of an emissions trading scheme (ETS) had become bipartisan policy, despite the conservative Howard Coalition government's reluctance to act on climate change due to public pressure (Crowley, 2017). Climate change reaction has been a major issue in Australian politics since at least 2007, when it became a topic that some claim dominated the 2007 federal election (Newman & Head, 2015). With overwhelming public support for his plan to combat climate change Howard had been voted out of office and Rudd was elected Prime Minister in 2007 following eleven years of Liberal-National (LNP) leadership (McDonald, 2005). As a consequence of the loss, Howard was replaced by Malcolm Turnbull who served as Minister for the Environment and Water under Howard.

With support from Garnaut the Labor party established the Carbon Pollution Reduction Scheme (CPRS) policymaking process, which Rudd anticipated to evolve smoothly given that the Liberal Party and the Labor Party had reached an agreement on the creation of climate policy (Butler, 2017). Despite the high hopes, climate policy was steadily watered down from a robust CPRS to a weaker and weaker package as the government made increasing concessions to the fossil fuel lobby (Parr, 2019). This showed that emissions-intensive industries were well organized and had high-level access to government and public awareness was insufficient to provide a counter-noise to the growing fossil fuel lobby (Pearse, 2015). Consequently, Graham Richardson, who served as a cabinet minister, stated in 1991 before the Australian Senate that the Government will not proceed with actions that have a net detrimental economic impact on the Australian economy in the absence of comparable action by major greenhouse gas emitting countries (Parr, 2019). Alongside the impact of the fossil fuel lobby, studies demonstrated party polarization within the Australian electorate on climate change, as seen by polling data. In October 2009, Fielding et al. (2012) polled 311 Australian MPs. Their findings indicate that politicians from the center-left Green and Labor Parties had stronger beliefs in and prioritization of climate change and gave more heuristic weight to scientists and environmental groups in comparison to politicians from the center-right Liberal or National Parties (Fielding et al., 2012).

Some have stated that part of Rudd's demise and Gillard's minority government status in 2010 was due to Labor's failure to undertake the climate change mitigation efforts promised during the 2007 election campaign. However, proving these claims convincingly is difficult, especially given the plethora of other factors at play during those years, such as the Green Party's voting against Labor's CPRS (on the grounds that it lacked ambition) and the macroeconomic context of the global financial crisis and attendant fears about its effects on the Australian economy (Newman & Head, 2015). According to the Green's Party statement:

“We voted against the CPRS because it was bad policy that would have locked in failure to take action on climate change. According to Treasury modelling, under the CPRS there would have been no reduction in emissions for 25 years. It gave billions in handouts to coal companies and big polluters, while it locked in emissions targets that failed the science. It would not have led to any change in behaviour by big polluters, while any future attempt to strengthen the scheme would have resulted in billion dollar compensation payouts to big polluters. It gave a false impression it was going to actually do something – in fact, Kevin Rudd’s own climate change advisor warned it could be better to go back to the drawing board” (Garner, n.d., n.d.).

Because of his resistance to then-leader Malcolm Turnbull's willingness to negotiate an ETS with the Rudd Labor government, Tony Abbott was elected leader of the Liberals (by one vote). His election was seen as climate skeptics gaining influence in the party, and this was borne out by the Coalition rejecting the Rudd government's CPRS twice in the Senate, after which it was deferred. The Coalition claimed that Australia should not take the lead on carbon pricing and instead wait to see what the international community decides at the United Nations Framework Convention on Climate Change (UNFCCC) meeting in Copenhagen in 2009 (Crowley, 2017). In response to the rejection, Rudd replied in forceful in a speech attacking opponents and climate change deniers in general describing them as “climate cowards” and “reckless gamblers who are playing with the future of our children” (Hawley, 2009). As previously stated, in November 2009, the Australian political debate on climate change became extremely heated. The opposition Liberal Party, led by Malcolm Turnbull, was replaced with Tony Abbott, a climate skeptic, and directly withdrew from the bipartisan agreement on carbon pricing (Spencer et al., 2013).

Despite a decrease in intensity in the debate, popular preferences for climate change remained on the political agenda in the run-up to the federal election in August 2010, and appear to have been reflected in the election outcomes. To be more specific, in the August 2010 federal election, neither of the major parties ran on a carbon price platform, and each received a mere 72 seats in the House of Representatives, four short for the amount required to establish a majority administration (Spencer et al., 2013). Nonetheless, Australia's hybrid electoral system (preferential voting) in the House of Representatives contributed to an uncommon result in August 2010, allowing a multiparty climate change policy package to be produced between the minority Labor Government, the Green Party, and three Independents (Spencer et al., 2013). The formation of the alliance offered it the bare minimum of House majority with 76 seats. Despite the successful formation, the Greens signaled their trust in Labor at a cost. Leader of the Greens, Bob Brown’s vote was accompanied by a fully codified 'agreement' between the parties. The agreement committed Labor to specific policies and processes proposed by the Greens (Crowley, 2013a). The most visible of these was a climate change accord, recognizing that emissions reductions would require a carbon price, the pact went beyond Labor's election platform, which pledged to hold a citizen’s assembly

before instituting any pricing mechanism. The reasoning behind the strict agreement is that the Greens sunk the carbon trading system the first time around and the least they could do was return and agree to a very identical scheme the second time around, which was, in fact, the purpose of the arrangement (Crowley, 2017).

7.7 Window of opportunity and policy entrepreneurs

In 2007 the Labor Opposition Party took on the role of policy entrepreneur during the agenda-setting process. In Kingdon's words, by pushing the subject up the agenda, the Labor opposition was behaving as a policy entrepreneur, capitalizing on politically advantageous developments. They capitalized on the uproar over the Stern report and increased public awareness to push the carbon tax to the forefront of the agenda. The Labor Opposition promised to enforce the Kyoto Protocol if a Labor government was to be elected (Crowley, 2013a). Despite the growing awareness both publicly and in the political realm, Rudd was eventually replaced by Gillard as a result of Rudd's failure to secure passage of the CPRS in Australia. When the Gillard administration fell short of a majority in the 2010 federal election, the Australian Greens facilitated the adoption of a carbon tax, which was a reversal of Labor policy, by making it a condition of their support for the Gillard government (Crowley, 2017). Specifically, the election resulted in a hung Parliament, with Gillard's reliance on Green Party support mandating a compromise to pursue a carbon price system after all (McDonald, 2015b). Throughout the negotiation process the Green Party have shown to be persistent and were listened as a consequence of their leverage in the hung government. In other words, the carbon tax's victory was partly influenced by Australia's electoral rules. The first-past-the-post system in the House of Representatives allowed The Green member of Parliament Adam Bandt to enter the House of Representatives by allowing parties to negotiate preferences and minority preferences to be expressed. The Green Party, which held the balance of power, advocated for the establishment of carbon pricing and was instrumental in its final adoption (Spencer et al., 2013).

7.8 The policy Stream

Similarly, to the Swedish instance, Coase's 1960s Journal of Law and Economics article "The Problem of Social Cost" serves as the foundation for the concept of carbon taxation. In the 1970s, this notion was further developed by policy communities in Australia for use in carbon trading. For nearly two decades, the introduction of carbon pricing as a low-cost emissions reduction tool had been on Australia's national agenda. In 1997, the Australian Greenhouse Office investigated the notion, followed by the Australian Senate in 1999, the Australian States and Territories in 2004 and the Hawke government in 2005. The latter, as described in the problems stream, sparked a scare campaign in the conservative business press and outrage from the fossil fuel industry, to the point where "the carbon tax became the bogeyman for the industry in the debate, with both Labor and Coalition governments eschewing the measure favoured by the

majority of economists, including many in 'Treasury' (Crowley, 2013, p.606). Despite unsuccessful efforts, previous attempts served as a springboard for the 2008 Garnaut Climate Change Review and the subsequent development of the first Carbon Pollution Reduction Scheme (CPRS), as it was dubbed in 2008 (Mcarthur & Melb, 2019). In 2007, The Labor Party led by Rudd demonstrated initiative by proposing and developing alternatives for incorporating carbon pricing into Australian climate policy. Labor, in particular, has collaborated with states to develop a climate change impact map for Australia. Additionally, they developed recommendations for resolving this issue. The review was finally completed under Garnaut's supervision, who played a key role as lead author of the review. Garnaut commissioned an independent investigation, the Garnaut Climate Change Review, and on 21 February 2008 (Mcarthur & Melb, 2019; Ward, 2015). In this work, Garnaut was able to link a set of solutions to the induced problem of climate change and was also able to effectively frame the problem in ways that aligned with the vested interests of industry and unions in Australia. Specifically, Garnaut proposed a carbon levy on big polluters with a tax rate of 30 AUD per tonne of CO₂ (Bradley, 2010). In the end, this led to CPRS, which began as a market-based carbon emissions trading arrangement modeled after the European Union's Emissions Trading System, but after a series of political squabbles and negotiations, it eventually resulted in a plan to transition to a market-based trading system after three years under a fixed-price repurchase agreement (Newman & Head, 2015). Labor then moved to finalize the terms of its ETS, aiming for a plan that could pass the Senate and get widespread bipartisan support (Mcarthur & Melb, 2019).

Initial resistance to Labor's first planned ETS, the CPRS, was modest and focused on the policy's effects on key industries, with large corporations pressing for greater pay to balance the policy's effects. While the CPRS remained popular with the general public, a tiny group of conservatives developed an aversion to the idea of an ETS in general (Pearse, 2015).

7.9 From agenda to carbon tax

As a consequence of the Green Party who were effective in utilizing the window of opportunity, the carbon tax emerged on the agenda again. The deal between the Labor Party and the Green Party also included the formation of a Multi-Party Climate Change Committee (MPCCC), which discussed the package's essential aspects between the Labor Party, the Green Party, and the Independent Mr. Tony Windsor and Mr. Rob Oakeshott. Furthermore, a panel of professional advisers, including Patricia Faulkner, Professor Ross Garnaut, Rod Sims, and Professor Will Steffen, supported the MPCCC (Kitson, 2011; Parliament of Australia, n.d.). Although the Coalition was offered the opportunity to select two members, it declined to join the MPCCC (The Centre for Public Impact, 2017). Under the auspices of the MPCCC, the carbon tax package was formed through multi-party negotiations, which gave the Labour Party, the Green Party, and the three independents control over the package's design and subsequent legislative procedure. In other words, center-left parties gained ownership of the policy, which was vital to the development of several key components of the carbon tax package, such as substantial provisions for low-income households and

funding for renewable energy, energy efficiency, and research and development (Spencer et al., 2013). Specifically, on the formulation of the carbon tax design, particularly elements to assist low-income households, was a crucial product of the MPCCC's multiparty deliberations. According to O'Halloran (2011) Gillard stated that:

“The price paid by big polluters will go up, as will the assistance provided to Australia households – the assistance will be permanent and will increase over time...” (O'Halloran, 2011, p.15)

These features were likely to be critical to the policy's social and political viability, giving lawmakers cover to push the legislation through despite waning popular support (Spencer et al., 2013). Furthermore, the government involved the “business community, representatives of unions, environment groups and other non-governmental organizations” to discuss the details of the carbon tax (Kitson, 2011, p.28). Throughout the carbon tax's adoption, business and industry were divided on whether a market-based system should be the cornerstone of climate policy (The Parliament of the Commonwealth of Australia, 2013). Whereas Graham Bradley CEO of the Business Council of Australia argued that dealing with greenhouse gas emissions will “unavoidably” necessitate a market-based system, other business organizations such as the Australian Chamber of Commerce and Industry (ACCI) were adamantly opposed to the carbon tax arguing that global legally binding agreements and concerted action is required prior to domestic policies (The Parliament of the Commonwealth of Australia, 2013).

Apart from the design of the tax, the MPCCC also formed the Climate Change Authority, an independent expert advisory panel to conduct assessments of the carbon pricing mechanism and make suggestions to the government. The Climate Change Authority (the Authority) was constituted by legislation as an independent agency with the responsibility of reviewing important components of the carbon price mechanism and the Government's climate change mitigation programs (Australian Government, 2011).

In the end, the carbon tax package incorporated an innovative carbon pricing system into a larger package of policies aimed at ensuring the policy's social and political viability as well as increasing its economic efficiency. For starters, the program includes comprehensive budgetary reform. Progressive income tax reduction totaled AUD 2.68 billion each year, or 0.2 per cent of 2011 GDP, over the three fiscal years 2012/2013 to 2014/2015. The rise in government transfer payments averages AUD 1.72 billion per year, or 0.13 per cent of 2011 GDP, throughout the four fiscal years 2011/2012 to 2014/2015. This should, in theory, have eased worries about the reform's potentially regressive effects and improve its macroeconomic and labor market consequences. It also served as a key “commitment device,” making the package's breakdown more operationally and politically challenging. Second, the package included a broad and comprehensive set of measures to protect emissions-intensive, trade-exposed industries and ease the transition to a low-carbon economy by investing in research and development, renewable energy, energy

efficiency, and land-use planning (Spencer et al., 2013). The section that follows dives into the specific design of the carbon tax in Sweden. The carbon tax design is expressed in terms of the design variables as discussed in chapter 5 (i.e., tax base, tax rate and revenue distribution).

7.10 The tax base of the Australian carbon tax

The Australian carbon tax was introduced as a system of fixed-price emissions permits. The carbon tax was to be imposed on approximately 500 of the country's largest polluters (Australian Government, n.d.). These include major industrial facilities, waste sectors, natural gas suppliers and power plants that emit more than 25,000 tons of carbon equivalent per year, with a cap-and-trade emissions trading program taking effect on 1 July 2015, connecting Australia to global carbon markets (Carl & Fedor, 2016). The carbon tax was part of the Clean Energy Act that aimed to control nation CO₂, methane (CH₄), nitrous oxide (NO_x), and perfluorocarbon emissions through the polluters-pay principle (Robson, 2014). Carbon pricing, it is estimated, would cover 60 per cent of national GHG emissions. Agriculture, forestry, biomass combustion and transportation fuels were exempt from the carbon levy due to the difficulty of identifying emissions. The law was enacted to alter Australia's economy, assisting low- and middle-income households while also lowering pollution and boosting the economy.

Additionally, the Act provided compensation mechanisms. Specifically, to counterbalance rising prices for commodities such as energy, benefits and pensions have been increased, while income taxes have been decreased (Bavbek, 2016). Furthermore, A Jobs and Competitiveness Program was initiated to assist high-emissions, trade-exposed businesses in reducing their carbon and energy intensity. An Energy Security Fund would assist the most polluting coal-fired power plants while also enhancing energy security and accelerating the transition to cleaner energy. Lastly, an independent Climate Change Authority would be established to advise on pollution limitations and climate change policies, keeping in mind Australia's legislative goal of lowering emissions by 80 per cent by 2050 relative to 2000 levels (Australian Government, n.d.).

7.11 The tax rate of the Australian carbon tax

The Australian carbon tax began at 23 Australia dollars (AUD) (18.5 EUR) per ton and was supposed to increase to 24.15 AUD in 2013 and 25.40 AUD in 2014 (Carl & Fedor, 2016). In actual terms, the carbon tax rate will increase by 2.5 per cent per year. After three years, Australia's carbon tax was to be phased out in favor of an internationally linked cap-and-trade system with a very narrow price ceiling and floor. The proposal was pushed by the government as a cost-cutting measure for businesses and an opportunity for the Australian agriculture industry to export offsets, but it was never implemented (Australian Broadcasting Corporation, 2014).

7.12 The revenue distribution of the Australian carbon tax

Australia's now-defunct carbon tax was infamous for its high burden on households. The revenue per capita was among the highest globally, with \$391, resulting in an annual revenue of \$8790M (Carl & Fedor, 2016). The tax income constituted 0.60 per cent of the gross domestic product (GDP). In the end, Australia's system was designated to deliver a more significant economic shock than other global carbon-revenue systems, owing to the country's high (coal-fired) greenhouse gas emission intensity, its overnight implementation, and the fact that simple carbon taxes generate revenue across the entire spectrum of priced emissions (Rahman, 2013).

Of the collected revenue, 15 per cent was supposed to be allocated to green spending, including a "Clean Energy Finance Corporation", which supports funding of low-carbon energy. 1 per cent was allocated to general funds (i.e., administrative costs), while the remaining 53 per cent was allocated to revenue recycling. Revenue recycling in Australia intended to lower corporate tax rates, income tax cuts, and flat rebates for people and households, particularly those with low-income or "impacted" households (Carl & Fedor, 2016). Revenue recycling can be further specified as corporate tax cuts, on profits or payroll taxes, granted to small businesses. In addition, Australia granted income-tax reductions to individuals and broad-based flat rebates. Hence, Australia compensated households through pension increases, allowance increases, and "family payments" and income tax cuts for individuals earning less than 80,000 AUD per year for increased costs due to the carbon price. Figure 18 gives a schematic overview of the carbon tax policy design in Australia including each of its elements as discussed in section 7.10-7.12.

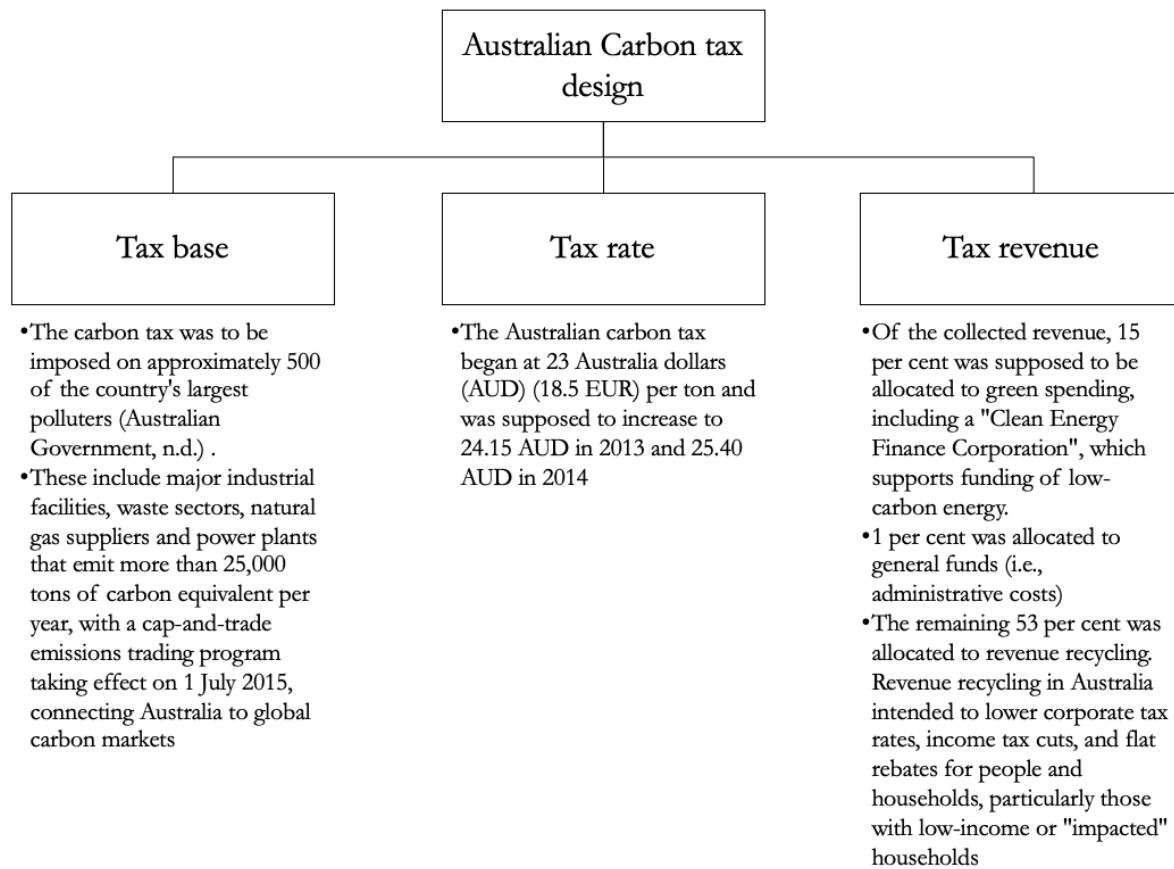


Figure 18: Schematic overview of the Australian carbon tax policy design.

7.13 From formulation to implementation

Despite the efforts to develop a longstanding tax, the carbon tax was unveiled in rough conditions. When conservative Opposition Tony Abbott politicized carbon pricing as in his successful campaign to becoming Prime Minister, it took a turn for the worst (Crowley, 2017). An article authored by Butler on *The disappointment of Australia climate policy* in The Guardian noted that:

“Outside Parliament House, Abbott and other Liberal frontbenchers joined protests featuring signs describing Gillard as “Juliar” and “Bob Brown’s Bitch”. Sydney broadcaster Alan Jones suggested on radio that the prime minister should be taken “out to sea in a chaff bag”, and that her father had “died of shame” (Butler, 2017, n.d.).

Around that same period, public support for climate change policies began to decline due to the 2009 Copenhagen climate conference's dismal results, the global financial crisis, the end of Australia's

Millennium drought (2001-2009), and an increasingly politicized party debate on climate change. (Spencer et al., 2013). Another factor that contributed to the increasing turn against climate policies was the end of the mining boom. The end of the mining boom lowered incomes for individuals on average and also added to the growing concerns on employment induced by carbon intensive companies such as the world's largest aluminum (at that time) manufacturer that indicated that large-scale projects generating hundreds of jobs would have to be suspended owing to the carbon tax (Centre for Public Impact, 2017; Taylor & Hoyle, 2014). In addition, the media also contributed to the decline in public support. According to Spencer et al. (2013) unfavorable media coverage of Julia Gillard's Labor government's carbon policy exceeded positive coverage by a margin of 73 per cent to 27 per cent added to this negative campaign was the increased visibility of Tony Abbott during his campaign in the lead to the elections. For example, in *Torres News*, Tony Abbott authored an article in which he claims that Gillard is sugar-coating the impact of the implemented carbon tax. In this article Abbott fiercely attacks Gillard with arguments against the carbon tax. Specifically, he noted:

“The government has no mandate for this new tax. Readers of the *Torres News* can be assured that at the next election the Coalition will seek a mandate to repeal this damaging tax...Australia's GDP through 2020 will be a cumulative \$180 billion lower and average household incomes will be reduced by a cumulative \$11,360. Julia Gillard, might think these are modest but they are not” (Abbott, 2011, p.8).

At the same time the Australian Treasury had pointed out the impact on households (groceries) will be modest and they are expected to only increase by 80 cents per week. Nonetheless, prior to the 2013 election, Opposition Leader Abbott declared that a Coalition Government's first priority would be to repeal the carbon tax. This declaration shows that Abbott used the resource effects as a means to gain political support. The 2013 election, according to Abbott, was a "referendum on the carbon tax," with the Coalition winning and the carbon tax losing. Abbott claimed that the carbon tax would not result in GHG reductions and imposed an unjustified cost burden on Australian businesses and citizens. Furthermore, Abbott emphasized that the carbon price is not matched by commensurate global action, and it contradicts popular sentiment. In response, Garnaut had to justify the statements made by the Opposition leader Abbott. In an interview with the Australian Broadcasting Corporation Garnaut emphasized that on a global scale, actions are taken and Australia is lacking behind. Garnaut stressed that industry-heavy countries such as China and The United States have implemented several carbon reduction measures to deal with the burden of growing CO₂ emission (Australian Broadcasting Corporation, 2012). There is little doubt that public opinion on a carbon tax in 2012 was divided. Speculation regarding the projected carbon tax's impact varied widely amid anti- and pro-carbon tax marches and demonstrations (Meng et al., 2014). In terms of the interpretive

effects, it is then evident that the rules, norms and procedures induced by the carbon tax were contrasted within Australia, both of political as well as citizen level.

On 15 October 2013, as promised, the newly elected Coalition Government released exposure drafts of eight repeal Bills. Before the bills could be introduced in the House of Representatives, submissions were received only until November 4th of that year. 11 similar Bills were introduced on November 13th, 2013 as part of a bundle. (The Parliament of the Commonwealth of Australia, 2013). Evidently, given that the carbon tax was a policy implemented by the Labor Party and the Green Party, they voted against the repeal, with Greens leader Christine Milne calling the vote a "appalling day for Australia." Although his coalition did not have a majority in the Senate, senators from mining mogul Clive Palmer's Palmer United Party voted in favor of the repeal. Later that week, the Australian Senate voted 39-32 to repeal a politically divisive carbon pollution tax that has brought down three Australian governments since its establishment in 2007. For further clarification purposes, figure 19 and figure 20 are presented below. Both figures give a schematic representation of the key events and processes leading to the policy outcome.

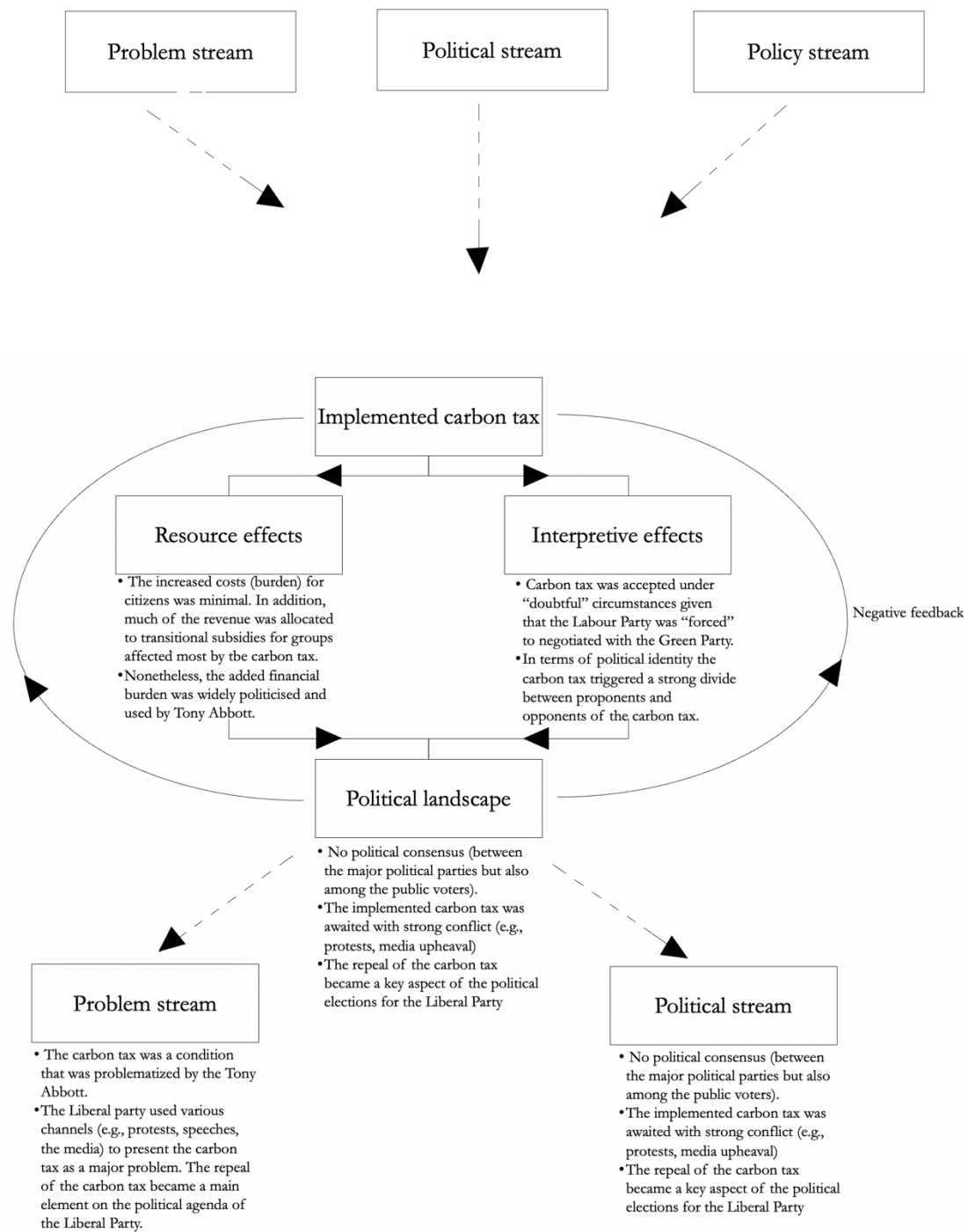
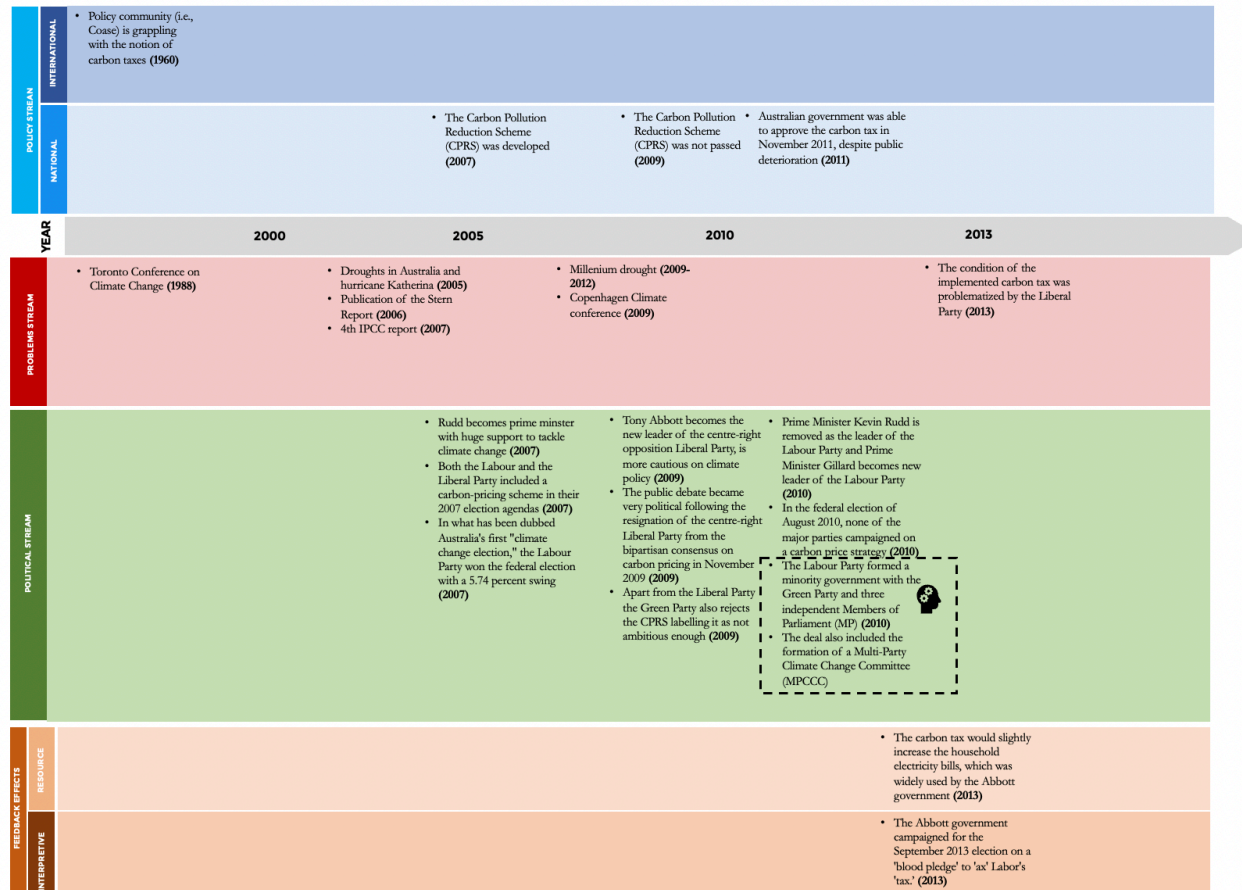


Figure 19: A schematic overview of the feedback identified for the case of Australia.



= Policy entrepreneur

= Window of opportunity

Figure 20: Timeline of the carbon tax policymaking process in Australia including the policy stream (blue), the problem stream (red), the political stream (green), the policy entrepreneur(s), the policy window and the feedback effects (orange).

Chapter 8. Comparison

8.1 Introduction

Chapter 8 presents the results of this study. The results have been presented in a table, allowing for case-by-case comparison highlighting the contrasts. Apart from the table, this chapter (section 8.2) dives into the specific similarities and differences, which could be considered factors that have contributed to the difference in carbon tax experiences between Sweden and Australia.

Table 6: Comparison between the Swedish and Australian case.

	Sweden	Australia
1. Agenda-setting		
1.1 Problems stream	- Climate change and environmental degradation as a consequence of growing GHG emissions - Unsustainable tax system	Climate change
1.2 Political stream	- Reforming the unsustainable tax system - Increased focus on environmentalism also referred to as “The Green Breakthrough” in 1986 - The Greens are elected to parliament in 1988 - Public orientation was largely positive and in favour of the carbon tax	- In 2007 both the Labor and the Liberal parties had carbon pricing on their party programs - Following the repeal of the CPRS, both major parties (Liberal and Labor Party) rejected the idea of carbon pricing - High rate of personnel turnover - Public orientation shifted from general acceptance to a divided and partisan perspective
1.3 Policy stream	- Global policy communities formed since the 1960s - Erik Dahmén the first Swedish scholar to work on carbon taxes on national level - Carbon tax as a means to deal with growing environmental awareness and cope with reduced marginal tax income	- Global policy communities formed since the 1960s - Labour Party (led by Rudd) in collaboration with Ross Garnaut develop the CPRS
1.4 Policy entrepreneurs	Bert Bolin, Mans Lönnroth	The Green Party (MPCCC)
1.5 Policy windows	Electoral win by the Social Democratic Party in 1988, which allowed for a new political program	The negotiations between the Labor Party and the Green Party as a consequence of a Minority government in 2010
2. Carbon Design		
Tax base	- Tax on all major fossil fuels, that is, gasoline, oil, and coal used for heating and transportation - Exemptions for industries subject to lose in competitiveness	- Tax levied is on 500 of the country's largest (>25,000 t per year) polluters. - Agriculture is not included - Domestic aviation, shipping, and rail fuel consumption were included

Tax rate	Started at 24 EUR per ton of carbon. Step-wise increase to 114 EUR per ton in 2021	Started at 23 AUD (19 EUR) per ton and was supposed to increase to 24.15 AUD in 2013 and AUD 25.40 AUD in 2014.
Tax revenue	≈ 0 per cent on green spending, ≈ 50 per cent on revenue recycling and ≈ 50 per cent on general budget	≈ 45 per cent on transitional subsidies, ≈ 1 per cent on general budget, ≈ 53 per cent on revenue recycling (i.e., household assistance)
3. Adoption and Implementation	- The liberals and moderate parties wanted exceptions for industry to avoid carbon leakage - The Social democrats found middle ground	- The MPCCC worked together on the design of the carbon tax - During the discussions the Liberal Party decided not to join as the interpreted the carbon tax as betrayal by the Labour Party
4. Policy feedback		
Resource effects	Resources were distributed equally given that the marginal income taxes were reduced and the carbon tax was introduced. Initially positive feedback effects by exempting industries opposed to the carbon tax given the carbon leakage. These industries were lobbying in opposition	The implemented carbon tax was accompanied by transitional subsidies for both the industries and households affected most significantly by the carbon tax. Nonetheless, the carbon tax would increase energy bills for households and industries
Interpretive effects	The carbon tax was introduced during a period in which public awareness was optimal and was not politicized as a consequence of the open negotiation structure that allowed input from all actors. Furthermore, the carbon tax was implemented in a period that also was characterised by an incoming economic crisis that shifted attention away from the newly implemented tax.	Carbon tax was used by the political opposition as a means to win the political elections.

8.2 Similarities and differences

This paragraph sheds light on a number of parallels and differences between the agenda-setting, design, adoption and implementation phase of the policymaking process in Sweden and Australia. Subsequently, the following section answers sub-questions 2 to 5.

To begin, while the indicators, focal events, and feedback differ significantly between the two cases, it is evident that climate change (which is also linked to environmental deterioration in Sweden) was a generally acknowledged problem by the public, political actors and policymakers in Sweden and Australia. Focusing on the case of Sweden first, it is evident that conditions became problematic through various channels. For instance, climate scientists actively contributed to the public debate on climate change and environmental degradation. Through media appearances, publications in newspapers and book releases, they managed to shift the public's attention, the government and policymakers to the effects of climate change. For the case of Australia, climate conferences such as the Toronto Conference on the Changing Atmosphere and landmark studies such as The Stern Review were able to lurch attention to the problems associated with climate change. As explicated in section 7.5 media also played an important role in

highlighting the effects of climate change. By mid-2000s, the national and international headlines were dominated by anticipated disastrous results of climate change. Ultimately, both cases showcased that narrating, visualising, and dramatizing climate change are important aspects of transforming conditions into problems.

While both cases demonstrate an increased awareness of the implications of climate change, there is one significant distinction between the Swedish and Australian problem streams. Apart from the effects of climate change and environmental degradation in Sweden, an unsustainable tax system was gaining prominence as a key issue from the 1980s onwards. This issue was extensively recognised and addressed by eminent Swedish thinkers such as Myrdal, who emphasised the problematic nature of this condition and the importance of tax system reform. The issue of climate change and the unsustainable tax system was initially not linked to each other.

Given the notion of a contrastive case study (as described in section 4.2), the side-by-side comparison demonstrates that, while there is some overlap in terms of how the condition climate change became problematic across Kingdon's problem streams, there is also differentiation as the case for Sweden recognises the relevance of the unsustainable tax as a separate substantial concern, for which political entities wanted solutions.

Within the political stream, there is one significant similarity. In terms of party ideology, both cases show clear signs related to a so-called "Green Breakthrough" (as described in the Swedish case). Put differently, it appears that in both the Australian case and the Swedish case, the political agendas were, at one point prior to the carbon tax implementation, saturated with environmental themes, such as climate change and loss of biodiversity. Simultaneously, in Sweden, the Green Party's election to parliament served as a critical indicator for political parties to recognise the importance of environmentalism and the growing national mood to address the effects of climate change. In Australia, a similar shift in aggregate orientation was also observed in the political realm. Specifically, in response to the increased effect of indicators, focus events and feedback, both the Labour and the Liberal Party (the two major parties at the time) were grappling with climate policies to mitigate the effects of growing GHG. Despite the effort to introduce climate policies, questions can be raised regarding the rationale behind the party ideology and the diverging climate beliefs in the Australian political landscape. To elaborate, whereas the Labour Party has showcased to be an early advocate of climate policies to respond to growing climate awareness, the Liberal Party has shown signs of band wagoning, with its Party Leader Howard admitting that it was a last resort to countervail the increased popularity of the environmentalism as presented by the Labour Party.

Notwithstanding the similarities as described above, the comparison between the political stream of the two cases is a delicate task and requires critical reflection as the Australia case showcases an interesting political shift that requires to be addressed. Specifically, in the years (from 2007 to 2011) before the carbon tax implementation, both major parties shifted away from climate policies. Both Gillard (Labour Party), in

response to the failed CPRS and Abbott (Liberal Party), a climate sceptic, stated not to introduce a carbon tax if elected.

Consequently, in terms of contrasts within the political stream, the following is concluded. On the one hand, the analysis of Sweden shows that within the political realms, all major parties steadily converged towards a party ideology that aligned with the problems stream. On the other hand, despite the overlap in political perspectives during the policymaking process of the CPRS, the ideological perspectives of the political parties in Australia diverged with respect to the problems streams. Another significant difference in the political stream between Australia and Sweden is the rate of personnel turnover, which is recognised as an essential factor within the political stream. As described in the Australian case, the years prior to the introduction of the carbon tax were characterised by a multitude of shifts in party leaders. These shifts were a consequence of growing disparity between party leaders and voters concerning the main agenda. In contrast, in terms of personnel shift, the case of Sweden was much more stable. Lastly, a distinction can be made between the national mood in Sweden and Australia. To elaborate, the general orientation of the public toward issues, values, and solutions needed for the carbon tax differed over time. Whereas in Sweden, the public orientation was largely positive and favoured the carbon tax, in Australia, the public orientation has shifted from general acceptance to a more divided and partisan perspective. The shift is a consequence of several factors including the failed CPRS and the break of the Millennium drought (section 8.9 provides a detailed overview of the factors associated to the shift in public orientation).

When looking at the policy stream, it is clear that policy communities began to grow on a worldwide scale in both Sweden and Australia in the 1960s. Individual national scholars, academics, and specialists then set out to create policies that fitted within national contexts. Dahmén, Bolin, and Lönnroth were among others in Sweden to construct such schemes based on a collection of ideas and possibilities. In Australia, the Labour Party, led by Rudd, was effective in generating solutions that were debated and refined. In both cases, it is clear that these were not directly tied to the problem stream. Only later in the policymaking process did policy entrepreneurs use politically favourable circumstances (windows of opportunities) to spend their time and energy to push pet policies.

There is one obvious distinction when it comes to policy entrepreneurs. In Australia, the Green Party operated as a policy entrepreneur, seizing opportunities in their favour due to their access to key officials. Kingdon also recognizes perseverance as a component, citing the Green Party's use of it (Kingdon 2003, 180–181). They regarded the hung government as a critical occasion to seize the short window of opportunity to forward their preferred ideas. In the instance of Sweden, Bolin and Lönnroth served as a critical counsellor to the Social Democrats, serving as a significant policy entrepreneur. As consultants, they had access to key politicians, which boosted the likelihood of success, as the message would otherwise "likely fall on deaf ears" (Kingdon, 2003, p.128).

In terms of carbon tax design both cases overlap to some extent. Considering the policy design elements as described in chapter 6, it is evident that for both cases approximately 50 per cent of the

generated revenue income was allocated through revenue recycling. For the case of Australia, revenue was recycled through increased pensions and allowance and income tax reductions for households that earned less than 80,000 AUD per year. Furthermore, the tax revenue collection procedure in Australia included mechanisms to support lower-income households and industries affected through the loss of competition (i.e., carbon leakage). In Sweden's example, the carbon tax was implemented as part of a broader tax reform that reduced marginal income taxes. Despite the parallels in revenue allocation, many distinctions have been observed. Whereas 15% of Australia's collected revenue was used for green spending (i.e. government spending or subsidy directed toward energy efficiency and renewable energy research), in Sweden, collected revenue was divided between the general fund, which contributes to the country's general budget (linked to specific spending programs), and revenue recycling. Contrastingly, no specific revenue was designated for green spending.

With regard to the tax base, there are various differences. First of all, the Swedish tax is levied on fuels derived from fossils that are used for heating and transportation. Sweden implemented exclusions and design changes for energy-intensive businesses in order to limit leakage. In contrast, the Australian carbon tax covered large emitters ($>25,000$ t/y) in the energy extraction (including fugitive emissions), power generation, industrial, and waste sectors. The difference in tax base also induced a significant difference in terms of the tax revenue generation. Namely, in Australia the carbon tax had the largest per capita burden, with a tax that collected most income compared to any system worldwide. In contrast, Sweden increased the tax rate in a step-wise procedure leading to a period of adaptation for households and industries.

Reflecting on the adoption phase of both carbon taxes it is evident that for both the Swedish and the Australian case the government allowed for open discussions between industries, environmental entities and other relevant groups to develop a well-balanced carbon tax. In the end, these open discussions were required to outline a comprehensive set of policy options for lowering carbon emissions, investing in renewable energy, and assisting businesses and individuals in making the transition to a clean energy economy. Throughout both adoption phases policymakers, scientific experts, and industry groups collaborated extensively to create the package. It took a lot of time and effort to ensure that Sweden and Australia established a long-term climate change strategy that was both successful and credible. However, a key difference in this phase of the policymaking process was the fact that in Australia the Liberal Party did not partake in the process. This can be explained as the Liberal Party led by Abbott was already not in favour of such a pricing scheme and viewed the Labor Party as a traitor who was forced by the Green Party to implement a carbon tax scheme.

Lastly, the implementation phase is compared. The study showed that in Australia the Liberal Party utilised the carbon tax as a means to reshape the problems in Australia's public realms. To be more specific, Abbott framed the carbon tax as just another tax that will have a negative effect on Australia's GDP and results in lower household incomes. In essence, the Liberal Party made the carbon tax, and in particular its

reversal a centrepiece in its campaign platform in the lead of the 2013 election. Following the introduction, Abbott hosted several anti-carbon tax rally's and was often seen in the media advocating against the carbon tax. On the contrary the carbon tax in Sweden, was received with a much greater deal of consensus and urge as a consequence of various factor including the necessity of broadening the tax base as a result of the tax reform, active participation of parties across the spectrum in the policymaking process and a great public support for climate mitigation policies. Moreover, the carbon tax was introduced during a period in which the country was awaiting a major economic crisis (e.g., the Swedish financial crisis caused by a housing bubble). Hence, the attention was slowly shifting into another direction leaving less focus for the carbon tax. In contrast, in Australia, the implemented carbon tax was awaited by direct opposition from Abbott and his Liberal Party, who took advantage of the implemented carbon tax and its associated policymaking process that was induced by The Green Party making use of the hung government. In terms of PFT and the MSF it is evident that there exists a link between the implemented carbon tax and the problems- and political stream. In other words, the carbon tax was condition that was problematized by Abbott with the aim to gain political leverage for the upcoming elections. Bringing the reversal of the tax on the agenda was one of his key points and divided political perspectives were in favour for his road towards an electoral win.

Chapter 9. Conclusion and outlook

9.1 Introduction

Chapter 9 starts with a reflection on the use of the two theoretical frameworks. From there, section 9.2 summarizes the major findings of this study based upon the findings as explicated in section 8.2. Section 9.4 elaborates upon the limitations of the study and provides suggestions for future research. Subsequently, section 9.5 provides a set of policy recommendations. Finally, this chapter (9.6) concludes with an elaborate description of the academic relevance. Ultimately, the findings of this study provide an answer to the following question:

Main Research Question: What were the contributing factors within the contexts and implementations of the carbon taxation in Sweden and Australia that led to the continuation of the first and the reversal of the latter?

9.2 Reflecting on the use of the MSF and PFT

Both the MSF and PFT were used as so-called "filters" (see section 4.2) to derive factors contributing to the carbon tax continuation in Sweden and the carbon tax repeal in Australia. The section that follows reflects on the use of both approaches separately and their use in conjunction.

First of all, throughout the study, the two theoretical approaches have proven their value as they enabled the decomposition of the dynamical policymaking process into smaller, more easily comparable and analyzable components. Without the underlying terminology surrounding the MSF and PFT, contrasting two cases is prone to abstraction. Put differently, the selected theories provided a well-developed set of sub-elements that aided in establishing the necessary focus for contrasting the two cases. For instance, within the political stream of the MSF, the theory sheds light on the national mood, party ideology and balance of interest. These sub-components supported the analysis within a more substantial political stream that is more difficult to dissect and contrast.

Similarly, PFT has been of great value in separating two different pathways (through resource effects and interpretive effects) through which implemented carbon tax policies have shaped the political realm. This was especially important as policymaking processes often lack clear boundaries between the different stages. Another advantage of using well-established theories is that it allows other scholars to depart where this research ends, as the terminology is defined and applied according to the existing literature. Overall, both the MSF and PFT have proven its value as a tool for ex-post interpretation of the origins of climate policies.

Ultimately, this study argued that both approaches could be used in conjunction to enrich the explanation of the diverging carbon tax policymaking processes. Through application, this study showed

that there is indeed evidence for using both theories in conjunction to gain knowledge on the underlying factors that steer policymaking processes. Whereas the MSF focused on the role of problems, policies and the political landscape shaping policy outcome, the PFT sheds light on the implemented policy shaping the political landscape and inducing new problem definitions. Using both theories subsequently provided a more complete overview of factors contributing to carbon tax continuation in Sweden and reversal in Australia. Section 9.6 dives into the specific academic contributions as derived from the use of the two theoretical frameworks in this study.

9.3 Main findings

This study used Kingdon's MSF as an explanatory framework and paired it with PFT to explain the contributing factors within the contexts and implementations of the carbon taxation in Sweden and Australia that led to the continuation of the first and the reversal of the latter. Based on the analysis of the contrasts, the following major observations can be made to account for the observed variances in diverging outcome.

First, it is evident that in Sweden, the broader tax reform in 1991 was an essential factor for the continued support for the carbon tax. In the end, the continued support was significant to guarantee political support from both right-wing and left-wing politics and its associated voters. In contradiction, the carbon tax in Australia was accepted during a period characterised by a fragmented political landscape and an increased divergence in perceptions among the public to the carbon tax. To expand, in Australia, policy outcomes were used as deliberate strategic action by Abbott who sought policy alternatives (i.e., reversal of the carbon tax) that would expand their authority relative to their political opponents.

Second, in terms of carbon tax design, this study showed that earmarking collected revenues for green spending does not guarantee success. Furthermore, this study revealed that increasing the tax rate in a step-wise manner (starting with a low tax rate) is a factor contributing to carbon tax continuation. The step-wise increase in Sweden was important as it allowed those affected by the tax the most to adjust and reduces carbon leakage chances. Furthermore, the tax started at relatively low levels compared to other tax burdens. Although Australia also aimed to increase the tax rate in a step-wise manner, the initial tax rate was anticipated as a relative “shock” given its high value in comparison to other tax burdens. As a consequence, the carbon tax was immediately subject to both public and political arousal

Third, this study identified that within the adoption phase of the policymaking process, the inclusion and simulation of discussions between opponents and proponents of the carbon tax is a factor to consider when drafting a carbon tax aimed to sustain. Based on the contrast between Sweden and Australia, this study showed that open policymaking increases the efficacy and legitimacy of policymaking. The benefit of more transparent and active policymaking is that it taps into this collective wisdom to develop better informed and high-quality policy, that is, a policy that responds to genuine problems with feasible solutions. Additionally, for the case of Australia this study showed that voting behaviour has become more volatile

and that politicians have less time to consider their choices. As a result, all decisions must be taken on the basis of limited and highly contested information and stringent time constraints. The carbon tax policy in Australia, in this view, was more than just a political object – it functioned as political force that altered the fundamental boundaries of power, and repositioned people in political relationships.

Fourth, the reversal of the carbon tax in Australia highlights the critical nature of high-level political commitment to contentious policy issues – even ones with compelling evidence and precedence for implementation in analogous settings. For both cases the carbon tax was being confronted with an expanding number of difficulties and possibilities, complicating and polarizing the process. As previously documented, the carbon tax received strong and enduring political commitment at the highest levels of government in Sweden, which was critical in seeing the policy through to implementation in 1991. This demonstrates the critical importance of political agency in the creation of carbon price policies. In contrast, Australia's policymaking process was characterized by a tightly tied problem and policy stream and a loosely coupled political stream.

Lastly, this study emphasizes the significant importance of civil society actors who not only bring policy problems to the forefront of public debate and encourage policy answers, but also in supporting government decisions to pursue these once disclosed. In Sweden the public acceptance for carbon taxes as a means to mitigate the effects for climate change were much higher compared to the public acceptance in Australia. Hence, from this study, it is concluded that public acceptance is an important determinant for carbon tax continuation in Sweden and carbon tax reversal in Australia.

9.4 Limitations and recommendations for future research

This study, like any other, has a number of limitations that should be considered when interpreting its findings.

The first limitation centres around the terminology. For both the policymaking process and the application of the two theoretical frameworks, the terminology is considered a significant hurdle in this study's analysis phase (phase 2). Terminology is considered a hurdle because it is essential to allocate processes, events and actors to the different phases of the policymaking process (e.g., adoption and implementation) and to different elements of both the MSF (e.g., problem stream) and PFT (e.g., resource effects). However, the existing scholarship used in this study often lacks clarity in distinguishing between policymaking phases and the elements of the theoretical approaches. Considering the first, the lack of clarity results from the highly dynamic nature of the policymaking process. Consequently, events bleed into one another and are difficult to discern, making the allocation subjective to the author's point of view. More precisely, the concepts of formulation, decision-making, adoption, and implementation are frequently entwined and difficult to disentangle in the extant literature. Disaggregation was essential for this study because the purpose was to identify factors influencing the continuation and reversal of the carbon tax. To identify the determinants in detail, one must first define the various procedures that occur within the

polymaking cycle. With regards to the MSF and PFT terminologies, it is clear that their implementation within the corpus of extant research varies. The variation is caused because there is no centralized authority that gives clear step-by-step guidance or research protocol for implementing both options (Heikkilä & Cairney, 2018). While this allows scholars to choose and implement methods, it also allows for incoherence across the literature. For instance, some scholars merge terminology streams, while others add aspects to theoretical approaches in order to capture certain elements (e.g., technology stream). Given the freedom, this also triggers difficulties in applying the approaches coherently. Attempting to address this limitation, the author established clear definitions of the terminology and definitions used within the theoretical approaches. Furthermore, the constraint was addressed by utilizing Atlas.ti and adhering to a coding methodology as explicated in section 4.6. It is feasible, however, that a different individual would have assigned different codes to quotations or would have developed distinct categories.

For future research, one way to overcome coding bias is the utilisation of peer coding strategies in which multiple people assess one set of codes. Despite the recognition of the limitation, it is argued that the limitation has a negligible effect on the findings because multiple validations were conducted by comparing different types of data (e.g., news articles, interview transcripts and radio interviews). Furthermore, by means of process tracing validity checks were performed to assess the chronology of the events.

External validity is another limitation of this study. The external validity of this study is questioned due to its concentration on two cases, and additional application to other situations is required to show the theoretical framework's generalizability. Given that only two cases are analysed, this study does not provide enough evidence for the application of the MSF and PFT in conjunction. The more situations the combined MSF and PFT can explain, the more powerful the use of both frameworks becomes for specifying underlying factors of policy continuation and repeal. To verify the strength of the research it is suggested to perform additional case studies in which the use of both the MSF and PFT are tested.

Lastly, this research is bound by the data's availability and quality. This was particularly true for Sweden, where retrieving critical news items, records, and policy documents were more complicated than for the Australian case. While a centralised database (Trove) including data from a number of sources was available in Australia, this was not the situation in Sweden. Typically, the relevant papers were dispersed among multiple databases, not all of which were publicly available. As a result, when it came to verification via news items and background articles, this study could not maintain the same quality level as in the Australian instance. Apart from the scarcity of data in the Swedish example, the language barrier was also a constraint, as translation is crucial, and subjectivity in interpretation may creep into the research. Given the constraints considering the Swedish case it is suggested to invest or utilise new technology early on to safely translate journal articles, news articles and other reports into various languages for a low or free cost, making them accessible and useful for future research.

In the end, it is recognized that the findings are not entirely conclusive given the exploratory nature of this study. Given the qualitative nature of this study, the results are subject to interpretation of the author's perspective. For future research additional quantitative methods are suggested to validate the findings of this study. To elaborate, the data set might be expanded to include a greater number of nations that have implemented a carbon tax (either successfully or unsuccessfully). From there, a weight might be assigned to each component contributing to the continuation or reversal of carbon taxes based on input data from many sources such as sound theory, expert and stakeholder opinions, experience, surveys, or measurements. On the basis of those weights (i.e., factors), a baseline for testing other countries can be constructed (such as Sweden and Australia). Finally, this might result in increased validity and trustworthiness. Despite the added validation, it is important to stress that, quantitative methodologies do not necessarily have to be diametrically opposed (e.g., subjective interpretations of interview, focus group, field observations). In policy research, quantitative methods aid in establishing links between policy designs and policy results. Despite the study's limitations, a multitude of interesting leads are offered that mark a new direction for research on policy continuance and reversal and offer a novel perspective on the usage of the MSF and PFT in conjunction.

9.5 Policy recommendations

Before proceeding to the provision of policy recommendations, a crucial and critical note is required. As explained in section 1.6, due to the exploratory nature of this research, the findings cannot be directly applied to other cases. Nonetheless, policy recommendations can serve as a starting point for policymakers debating the ideal carbon tax policy and the associated policymaking process.

To begin, it is suggested that other taxes (i.e., income tax) are reduced to compensate the impacted people and industry for the additional expenses connected to the carbon tax. In other words, it is critical to equally distribute resources in light of recently enacted carbon price legislation. Assuring that the newly enforced burden is offset by cost savings elsewhere has been found to be critical for the MSF's three streams to work together. In practice, based on the analysis in this study such practices translate into long-term support. Additionally, to ensure efficient resource allocation, it is recommended to gradually increase tax rates (starting with relatively low tax rates) in order to strengthen society's and industry's resilience to the tax burden.

Second, given that the policy design is being placed into an ongoing context, it is important to align its design (i.e., tax rate, tax base and revenue distribution) with the existing practices (e.g., current tax rates) and procedures (e.g., public climate perspectives). That is, one must address the interpretive effects that may be triggered from implementing a carbon tax. To elaborate, if the carbon tax is to be effective, it is necessary for politics, the public, and industry to commit to meaningful coordination and to follow a consistent line.

Third, throughout the decision-making phase political commitment and agreement is important to avoid opportunistic behaviour by conflicting actors and parties. Creating a favourable environment for a carbon tax requires not only the development of appropriate policy design and resource allocation, but also the mobilization of a broad political consensus on the necessity of such programs for society's well-being. Political commitment necessitates the cooperation of a diverse group of civil and community leaders at all levels of society. Furthermore, involving both proponents and opponents from various sectors of society throughout the formulation phase of the policymaking process is critical to avoid an ad hoc approach to policymaking and develop a sustainable carbon tax policy.

9.6 Academic contributions

The primary contribution of this study is the provision of an explanation for the carbon tax continuation in Sweden and the reversal in Australia using key theories from the field of policy studies (see section 9.3). Apart from the primary contribution, the MSF and PFT have provided critical insights into policy developments at all levels of the policymaking process and helps explain both Sweden's and Australia's convergence and divergence. Particularly, this research contributes to our understanding of carbon tax policymaking processes in various ways.

First, for the case of Sweden, this study showed that the resource effects (allocation of benefits and burden) as described by the PFT allowed for further strengthening of the initially formulated carbon tax policy. To elaborate, positive feedback occurred as a consequence of the reduced income tax (i.e., tax reform) that alleviated the potential burden by the implemented carbon tax. The carbon tax policy in Sweden provided political players with resources and simultaneously did not have an impact on political elites, special interest groups, and the general population. Hence, the current analysis is in line with the findings of Exworthy and Powell (2004), who explicated that policy change is most likely to occur when there is congruence between different levels of governance and between policy players. In the end, this contributed to the sustained coupling of the three streams over time included in the MSF. In other words, the sustained coupling over time induced continued support and hence allowed for further expansion of the carbon tax.

For the case of Australia this study showed how the design of the carbon tax induced negative feedbacks through ineffective resource allocations and interpretive effects that negatively shaped the setting and condition in which the carbon tax policy was received by the public and policy makers. Consequently, the carbon tax served as a fruitful tool to take advantage of by political parties that made the reversal of the tax a key element of their political program. Hence, it can be argued that a new problem definition in the problems stream emerged. To be more specific, through feedback channels the problem stream shifted from climate change as a key issue to the issue of increased financial burdens as a consequence of the carbon tax policy. In the political stream the increased costs associated with the carbon tax were utilised by the Liberal Party to gain the voters' attention.

Ultimately, both findings are consistent with prior scholars' claims that the major theoretical frameworks only provide a partial explanation for policy action and that a synthesis of several lenses may be advantageous and can lead to new perspectives (Cairney, 2013; Sabatier, 1999). This study contributes to this shared perspective by conducting a contrastive case study that implements the MSF and the PFT in a "complementary" manner.

The approach presented here also makes a significant theoretical contribution to the current MSF and PFT literature. It contributes to our knowledge of the MSF and PFT by applying it to a novel policy issue and policymaking scenario: carbon tax policy in the Swedish and Australian system. Both the MSF and the PFT have provided invaluable insight into policy developments at all stages of the process, assisting in explaining both Sweden's and Australia's experiences. In addition, this study contributed to the existing literature on describing policy reversal as a policy change by means of the MSF. Currently, the MSF has been primarily used to explain policy formation (Wenzelburger & Hartmann, 2021). Scant research has focused on policy termination and this article fills in some of the gaps by exploring the use of MSF in conjunction with PFT for both policy continuation and policy reversal. Despite the optimistic tone, it is important to stress that more work needs to be done and that additional empirical examples are required to prove the added value of utilizing both frameworks. Nonetheless, this work functions as a starting point for further work within the field of policy continuation and policy reversal by means of the MSF and PFT.

Chapter 10. References

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