

Off with the Offset

The Reshaping of Voluntary Carbon Market Post-Paris Agreement

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Abstract

The 2015 Paris Agreement presented a fundamental disruption to the fabric of international carbon markets, while at the same time it has been increasing voluntary demand for carbon credits. As a result, voluntary carbon market (VCM) actors, particularly those producing and distributing carbon credits, are facing an intriguing dilemma. They are faced with increasing public scrutiny regarding the legitimacy of the carbon credits they produce and distribute, while at the same time are demanded to produce and distribute more carbon credits than ever. This thesis therefore aims to investigate the market reshaping processes that are taking place within Sweden's VCM amidst changes brought forth by the Paris Agreement. To accomplish this, a qualitative study using semi-structured interviews with a purposive sampling approach was conducted to capture an aggregate understanding of how the supply-side actors are making sense of the market. The researchers then interpreted and analyzed the data to identify the market-shaping processes happening in VCM by synthesizing social emergence theory and institutional work paradigm as the main theoretical framework. The findings suggest that the Paris Agreement has disrupted VCM's mature market state, where norms and mainstream solutions that were set in the past have been negotiated, contested, and contradicted, and new rules and processes are being developed. This thesis argues that VCM has entered an emerging state, where market actors are establishing their unique selling propositions, testing the feasibility of their solutions, and advocating for new dominant market norms. Particularly, two streams of competing market norms were observed: 1) aligning voluntary carbon offsetting practices to fit the Paris Agreement framework, and; 2) moving away from carbon offsetting toward a new voluntary market mechanism that rewards climate action. This thesis extends the limited but growing academic literature on VCM as separate from the compliance carbon market, particularly from the perspective of supply-side market actors, and the market work undertaken in VCM. It also yields valuable insights into the changing landscape of VCM and provides practical implications for market actors in the competitive environment of VCM in Sweden.

Keywords:

Paris Agreement, Voluntary carbon market, Carbon offsetting, Market-shaping, Market work

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Table of Contents

Abstract	2
Acknowledgements	3
Table of Contents	4
List of Abbreviations	6
1. Introduction	7
1.1 Background	7
1.1.1 The 2015 Paris Agreement	7
1.1.2 The Voluntary Carbon Market (VCM)	8
1.1.3 Actors in VCM	10
1.2 Problem Discussion	11
1.3 Purpose and Research Questions	13
1.4 Expected Contribution	13
2. Theory	14
2.1 Literature Review	14
2.1.1 VCM in Academic Literature	14
2.1.2 Institutional Perspective on Market-Shaping	15
2.1.3 The Shaping of Carbon Markets	16
2.2 Research Gap	17
2.3 Theoretical Background	17
2.3.1 Institutional Work	17
2.3.2 Emergent Collective Market Work	18
2.4 Theoretical Framework	19
3. Methodology	21
3.1 Research Design	21
3.2 Data Collection	22
3.2.1 Background Research	22
3.2.2 Interviews	22
3.3 Data Analysis	24
3.4 Quality Considerations	25
3.5 Ethical Considerations	26
3.6 Methodological Limitations	26
4. Empirical Findings	27
4.1 Overview of VCM Actors in Sweden	27
4.2 Micro-Level Emergence	29
4.2.1 Individual-Level Emergent: Personal Purpose and Climate Anxiety	30
4.2.2 Individual-Level Emergent: Determination to Change the Status Quo	30
4.2.3 Interaction-Level Emergent: Conversations and Collaborations	32
4.3 Meso-Level Emergence	33
4.3.1 Ephemeral Emergent: Shifting Preferences Based on Carbon Project Types	33

4.3.2 Ephemeral Emergent: New Market Logic Away from Offsetting	34
4.3.3 Ephemeral Emergent: Transparent Communication	36
4.3.4 Stable Emergent: Corporate Branding	36
4.3.5 Stable Emergent: External Sources of Legitimacy	37
4.4 Macro-Level Emergence	38
5. Analysis	40
5.1 The Institutional Reshaping of VCM	40
5.1.1 Mature State	41
5.1.2 Disruptive State	42
5.1.3 Emerging State	44
5.2 Conclusion	46
6. Discussion	48
6.1 Theoretical Contributions	48
6.2 Practical Contributions	48
6.3 Limitation of the Study	49
6.4 Future Research	49
References	51
Appendices	59
Appendix 1: Interview Guide for Market Actors	59
Appendix 2: Interview Guide for Experts	59
Appendix 3: Interview Invitation Email Template	60

List of Abbreviations

CDM	Clean Development Mechanism
CO ₂	Carbon Dioxide
COP	Conference of the Parties (referring to the United Nations Climate Change Conference)
GHG	Greenhouse Gas
GtCO ₂ e	Gigatons of carbon dioxide equivalent
IPCC	Intergovernmental Panel on Climate Change
MtCO ₂ e	Megatons of carbon dioxide equivalent
NDC	Nationally Determined Contributions
SDM	Sustainable Development Mechanism
TSVCM	Task Force on Scaling Voluntary Carbon Markets
UN	United Nations
UNFCCC	The United Nations Framework Convention on Climate Change
USP	Unique Selling Proposition
VCM	Voluntary Carbon Market
VCS	Verified Carbon Standard

1. Introduction

1.1 Background

1.1.1 The 2015 Paris Agreement

The 2015 Paris Agreement marked a shift of urgency in the international efforts to mitigate climate change. Since the agreement, the global objective is no longer to gradually reduce greenhouse gas (GHG) emissions to the atmosphere, but to remove them altogether (Kreibich & Hermwille, 2021). The international treaty was negotiated during the 2015 United Nations Climate Change Conference (COP 21), an annual conference held under the umbrella of the United Nations Framework Convention on Climate Change (UNFCCC), and has since been signed by 194 countries plus the European Union (UN, 2022). Under the agreement, countries must explicitly determine, plan, and regularly report their nationally determined contribution (NDC) toward reaching a global “net-zero” emissions target—where the level of GHG emissions is in balance with the level of GHG removal—by 2050 (UNFCCC, 2015). This net-zero target was later bolstered by the publication of the *Special Report on Global Warming of 1.5°C* by the Intergovernmental Panel on Climate Change (IPCC) in 2018. The report stated that to avoid the worst effects of climate change, the world will need to limit global warming to 1.5°C above pre-industrial levels by cutting GHG emissions from human activities in half by 2030, and reaching net-zero by 2050 (IPCC, 2018).

The Paris Agreement introduced new market mechanisms to promote climate change mitigation, particularly under Article 6. It introduced the Sustainable Development Mechanism (SDM), which allows nations that have fulfilled their NDCs to sell any overachievements to other nations. This international trade is in turn governed under the Internationally Transferred Mitigation Outcomes (ITMO) mechanism. These mechanisms are significant updates to the previous market mechanisms set up under the 1997 Kyoto Protocol, called the Clean Development Mechanism (CDM). Whereas under CDM developed countries can offset their increased GHG emissions by reducing emissions in developing countries, under the Paris Agreement all countries regardless of their development status have their separate NDCs to fulfill (Lang et al., 2019). These new mechanisms opened up a new chapter for the international carbon market and it has been replete with conflicting interests, particularly regarding how the international trade of carbon credits should be governed (Kreibich & Hermwille, 2021). It was only after six years of negotiations, during the 2021 COP 26 in Glasgow, parties in the Paris Agreement could agree upon the guidelines for the international market for carbon credit (UNFCCC, 2021).

Amidst international negotiations and national implementations of NDCs, the drive for net-zero—or synonymously referred to as “climate neutrality”—has permeated norms beyond policy agendas. In addition to regulatory measures, the Paris Agreement also brought forth the transformational ambition of limiting global warming to 1.5°C to the public consciousness (Gach, 2019). The push for “climate action” has since been amplified within the global cultural zeitgeist, for example by young activist Greta Thunberg’s Friday for Future movement and “the Greta Thunberg effect” that ensues (Nässén & Rambaree, 2021). Meanwhile, demands for the private sector to mitigate their GHG emissions, as well as to transparently disclose their efforts to do so, have also been intensified (Park & Jang, 2021). Most notably, the Science Based Targets initiative (SBTi)—a private sector-funded initiative endorsed by the UN and high profile environmental organizations—was established in 2015 to provide the framework and tools for companies to contribute toward the global goal of reaching net-zero by 2050 (Broekhoff, 2021).

1.1.2 The Voluntary Carbon Market (VCM)

VCM refers to the participation of people and organizations in the trading of carbon credits voluntarily, i.e. not to comply with certain regulatory provisions (Kreibich & Hermwille, 2021). In the past few years, starting from 2018, the global VCM has seen remarkable market growth, with the 2021 market size reaching its all-time high (Ecosystem Marketplace, 2022). This spike in growth has been primarily driven by the private sector (Kreibich & Hermwille, 2021). In pledging to reach net-zero emissions by 2050, or any other year before that, companies in the private sector are committing to fully eliminating GHG emissions from their economic activities. However, it is difficult—or even impossible—for many companies to fully decarbonize within the committed time frame, therefore, many companies resort to voluntarily purchasing carbon credits to offset their emissions (Broekhoff et al., 2019).

Carbon offsetting is the main market logic behind carbon markets. It broadly refers to “a reduction in GHG emissions or an increase in carbon storage that is used to compensate for emissions that occur elsewhere” (Broekhoff et al., 2019, p.6). A carbon credit is the unit of measurement for carbon trade, which represents the emission reduction of one metric tonne of carbon dioxide, or the equivalent amount of other GHGs. By purchasing carbon credits, a company can claim that it has contributed the equivalent amount of emissions reduction toward its overall emission reduction goals. Carbon credits are produced through projects that prevent GHG from being emitted into the atmosphere and projects that remove GHG from the atmosphere. These projects can range from reforestation and afforestation, renewable energy infrastructure financing, and proper disposal of GHG-emitting waste, to direct carbon capture from the air using cutting-edge technologies. Carbon offsetting is generally recommended as the last step for a company to achieve carbon neutrality, after the reduction of

internal emissions within the company's economic activities, and the mitigation of emissions from the company's supply chain and the use of the company's end products (Broekhoff et al., 2019).

While it is estimated that the private sector's net-zero commitments will continue to drive future demand for carbon credits in the voluntary market (Donofrio et al., 2021), the supply of voluntary carbon credits has been fraught with concerns surrounding legitimacy (Kreibich & Hermwille, 2021). As VCM is not subject to the UNFCCC, the legitimacy of voluntary carbon removal and reduction projects is largely unregulated (Kreibich & Hermwille, 2021). Over the years, several standard-setting organizations have been established to address this legitimacy concern, including Gold Standard, Verified Carbon Standard (VCS) by Verra, and Plan Vivo (Lang et al., 2019). Yet, as a result, these diverse and fragmented standard-setting organizations have generated varying ways of attributing how voluntary carbon credits are produced and valued, which has in turn led to an increasingly segmented market with polarized price points (Donofrio et al., 2021).

This question of legitimacy has only been further exacerbated by the Paris Agreement. Under the Kyoto Protocol regime, VCM mimicked the regulated market, where a company in a developed country can offset their increased emissions by purchasing carbon credits produced in developing countries. However, under the Paris Agreement regime, such a practice risks double accounting of emission reductions, in which parties in both countries could claim for the emission mitigation for the same project. To avoid such risk, some actors are developing the VCM version of Article 6's "corresponding adjustment," which is a tool intended to prevent nations from double accounting NDCs (Streck, 2021). Meanwhile, some other actors have instead decided to reframe their approach to GHG emissions reduction and "reinvent the purpose of the voluntary mechanism as a tool to deliver sustainable development instead of carbon neutrality" (Lang et al., 2019, p. 421).

In parallel, there is also an evolving debate regarding the effectiveness of GHG removal projects versus GHG avoidance projects towards reaching the net-zero target by 2050. Influential actors are increasingly expressing a preference for projects that directly remove carbon from the atmosphere, such as afforestation, reforestation, soil enhancement, and carbon capture and storage technologies, over avoidance-based projects which prevent more emissions from going into the atmosphere, such as renewable energy infrastructure development. Most notably, SBTi's latest guidance has emphasized for companies to prioritize internal decarbonization and only offset the remaining emissions from GHG removal projects (Donofrio et al., 2021). Several high-profile transactions in 2021 have further signaled the rising preference for GHG removal projects. For example, Microsoft announced that it is financing the removal of 1.3 million tonnes of carbon dioxide from the atmosphere through forestry and soil regeneration projects, as well as a direct capture technology solution that turns carbon dioxide

from the air into stone (Joppa et al., 2021). Ultimately, these debates reflect the ongoing market reshaping process of VCM due to the changes brought forth by the Paris Agreement.

1.1.3 Actors in VCM

Favasuli and Sebastian (2021) have identified and labeled four distinct groups of players that make up VCM: standard-setting organizations; project developers; brokers and retail traders; and end buyers (see Figure 1). Standard-setting organizations typically consist of non-governmental organizations that certify whether a particular project meets their requirements for voluntary carbon credits. These requirements typically include the following core principles: additionality (the project is not legally required, common practice, or financially attractive in the absence of the carbon credit scheme); no overestimation (carbon dioxide reduction matches offset credit issued); permanence (no risk of reversal of the GHG reduction); exclusive claim (each unit can only be claimed once); and co-benefit (provide additional social and environmental benefits) (Favasuli & Sebastian, 2021).

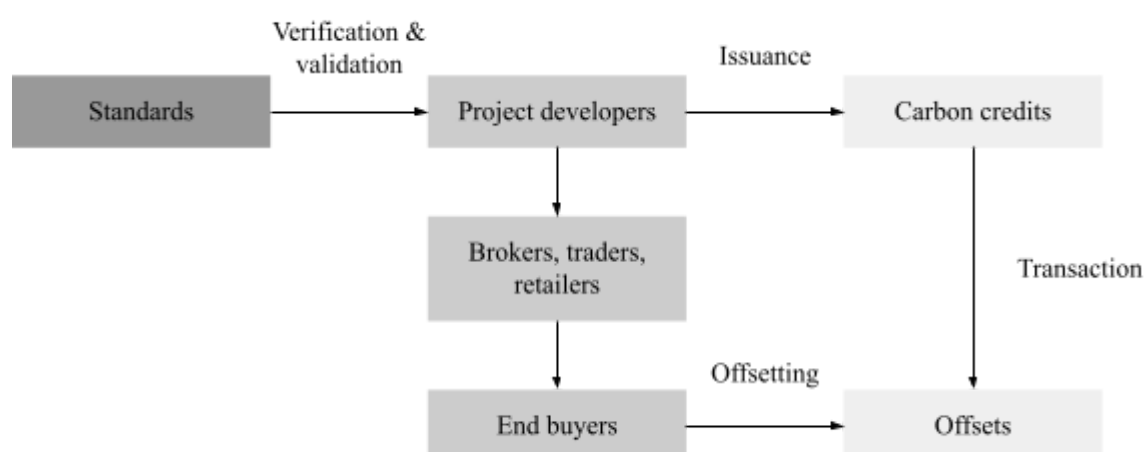


Figure 1: A summary of how VCM typically works (Favasuli & Sebastian, 2021)

Project developers are the actors who set up the projects which produce carbon credits, which range from large-scale industrial projects to smaller community-based projects. Brokers and retail traders link the supply and demand of carbon credits. While retail traders typically purchase large amounts of carbon credits directly from suppliers and bundle them into portfolios, brokers buy credits from retail traders and market them to end buyers. Lastly, the end buyers are companies and individuals who purchase these carbon credits to fulfill their GHG reduction commitments (Favasuli & Sebastian, 2021).

1.2 Problem Discussion

The Paris Agreement presented a fundamental disruption to the fabric of international carbon markets, both in the regulated market and in VCM. The mechanisms introduced under Article 6 have made the risk of double accounting a major legitimacy concern (Blum & Lövbrand, 2019). This risk falls atop the slew of criticisms that VCM has received over the years, particularly due to its lack of regulatory legitimacy, as well as the discovery of high profile cases of fraudulent activities surrounding carbon credit claims and harmful effects on local communities in developing countries which have then marred public trust (Cavanagh & Benjaminsen, 2014; Blum & Lövbrand, 2019). This distrust toward VCM was reflected in the level of market activities. The market saw a steady rise after the ratification of the Kyoto Protocol in 2005 but then languished following the global financial crisis and regulatory uncertainties following the 2009 COP 15 in Copenhagen (Donofrio et al., 2021; Blum & Lövbrand, 2019).

Yet remarkably, VCM activities have picked up again in recent years, starting from 2018—the year IPCC released its 1.5°C report—and have continued to rise ever since (see Figure 2). The Paris Agreement has not only introduced new carbon market mechanisms, but also a new collective vision toward removing carbon emissions which inspired more and more companies to commit to reaching net-zero emissions by 2050. These net-zero commitments have in turn driven up the demand for voluntary carbon credits. Accordingly, an international Task Force on Scaling Voluntary Carbon Markets (TSVCM) was established in 2020 by the UN Special Envoy for Climate Action, Mark Carney, to support the scaling of VCM. It has since produced many reports on VCM and estimated that the market size will increase by a factor of 15 by 2030 and a factor of 100 by 2050 (Blaufelder et al., 2021)

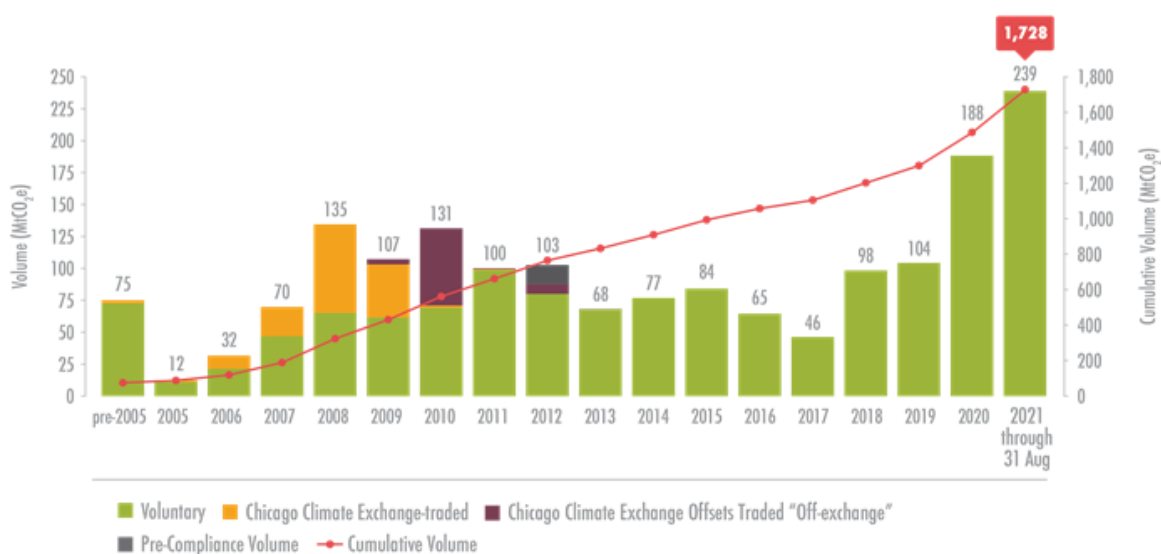


Figure 2: Market size by traded volumes of voluntary carbon offsets (Donofrio et al., 2021)

The simultaneous disruption and demand upsurge of VCM post-Paris Agreement have resulted in an intriguing dilemma for actors within the market, particularly those who are producing and distributing carbon credits. They are faced with increasing public scrutiny regarding the legitimacy of the carbon credits they produce and distribute, while at the same time are demanded to produce and distribute more carbon credits than ever. Notably, the past couple of years have also seen increasing interest and growth of environmental sustainability-oriented start-up companies, including those producing and distributing voluntary carbon credits (Crecente et al., 2021; Ye et al., 2020). Therefore, this thesis is interested in investigating how VCM market actors, particularly carbon credit producers and distributors, are making sense of the changing market pressures, norms, and societal values brought forth by the Paris Agreement, as well as how their business activities are in turn reshaping the market.

One might argue that VCM's financial significance and achieved emission reductions are trivial in comparison to the compliance, or regulated, carbon trade. While VCM market size exceeded US\$1 billion in 2021 with 298.4 megatons of carbon dioxide equivalent (MtCO₂e) credits traded, compliance market size is estimated to be at US\$261 billion in 2020 representing the equivalent of 10.3 gigatons of carbon dioxide equivalent (GtCO₂e) traded credits (Ecosystem Marketplace, 2022; Refinitiv, 2021). While VCM's meager scale relative to the overall carbon market should be recognized, its rapid growth in recent years and its expected growth trajectory cannot simply be ignored. As previously mentioned, TSVCM has estimated that the annual global demand for voluntary carbon credit could reach up to 1.5 to 2 GtCO₂e by 2030 and up to 7 to 13 GtCO₂e by 2050 (Blaufelder et al., 2021). Moreover, as the latest UNFCCC agreement in Glasgow suggested that markets will play a central role (Nicholls, 2022), market mechanisms and practices shaped by VCM actors can further influence and direct the conversations in both scientific research and policy development. As business models develop in the mainstream economics and finance underpinning the global GHG mitigation models, VCM has become a domain for experimentation, with the potential to both maintain and reshape the existing beliefs and norms around carbon markets.

The scope of this thesis is limited to studying VCM actors who are active in the Swedish market. In addition to the researchers' access and proximity, Sweden is also chosen due to its market maturity—relative to other countries in the world—concerning environmental sustainability and climate change mitigation efforts. For more than a decade, the nation has consistently ranked within the top 10 of the Environmental Performance Index (EPI) produced by Yale University and Columbia University (EPI, 2020). The Swedish government has also set ambitious goals for sustainability, including becoming completely fossil-free by 2045. Sweden also has a considerable influence on global environmental research, with Stockholm Environmental Institute, Stockholm Resilience Centre, and other academic institutions in the country becoming notable hubs for environmental research (Swedish Institute, 2021). Hence, it can be argued that Sweden's supportive environment for

sustainability-focused businesses and entrepreneurs has provided opportunities for VCM actors in the country to grow and shape the global market.

1.3 Purpose and Research Questions

The main purpose of this thesis is to map out the market reshaping processes that are taking place within Sweden's VCM amidst changes brought forth by the Paris Agreement. To reach that purpose, this thesis develops a theoretical framework that employs institutional and sociological perspectives, which conceptualizes VCM as complex systems shaped by market actors. Therefore, the interplay of institutional work done by VCM market actors and their various pathways toward reshaping the market are examined. To fulfill this purpose, this thesis aims to answer the following research questions:

- 1. How do market actors within VCM make sense of the changes in the market brought forth by the Paris Agreement?*
- 2. Under the context of these changes, how are the actions of market actors within VCM reshaping the market?*

1.4 Expected Contribution

This thesis aims to contribute to the limited but growing academic literature on VCM as separate from the compliance carbon markets, particularly from the perspective of carbon credit producers and distributors (i.e. supply-side market actors). To the knowledge of the researchers, there has not been any published literature that studies this perspective. This thesis also aims to contribute toward expanding institutional market-shaping theoretical studies through the development of a new theoretical framework based on existing frameworks and a new grounded theory derived from empirical research. Moreover, on a practical level, this thesis aims to map out the changing landscape of VCM and provide insights for market actors into the competitive environment of VCM in Sweden.

2. Theory

2.1 Literature Review

2.1.1 VCM in Academic Literature

Climate change is an issue that transcends disciplinary boundaries, thus, carbon markets as a solution to climate change have been studied across multiple scientific disciplines. For the interest of this thesis, a study was conducted particularly on academic literature within social sciences, which includes economics and political science. Early studies on VCM (circa 2005-2010) had focused on how the market functions, as well as its potential advantages and disadvantages (inter alia Belassen & Leguet, 2007; Gillenwater et al., 2007; Bumpus & Liverman, 2008; Corbera et al., 2009). However, it is noted that from early on, academic discourse on VCM—and carbon offsetting in general—has been rife with criticisms. A considerable amount of research has been done about the adverse impact of carbon removal practices, such as its problematic commodification of nature which causes human rights violations (inter alia Kosoy & Corbera, 2010; Leach & Scoones, 2015; Obergassel et al., 2017), cases of fraud and corruption involving carbon credits (inter alia Davies, 2007; Jacobs, 2013), and the market's role in reinforcing global injustices (inter alia Paterson, 2010; Asiyambi & Lund, 2020). Carbon offsetting has also been argued to allow particularly big companies and wealthy consumers to continue their high-emissions status quo, as they are enabled to “buy off their sins” through carbon offsetting (Paterson, 2010). Moreover, critical social science scholarship has notably problematized the basic assumptions that shape current practices in VCM, such as how carbon credits are accounted for (inter alia Carton, 2019; Carton et al., 2020).

When studying carbon markets from a market perspective, academic literature weighs heavy on investigations around the market's accountability, governance, and legitimacy (inter alia Bäckstrand & Lövbrand, 2006; Gillenwater et al., 2007; Widerberg & Pattberg, 2017; Kuyper et al., 2018). These include a small but growing number of studies conducted around the impact of the Paris Agreement on VCM's legitimacy. For example, Blum (2019) argued that following the Paris Agreement, carbon markets “remain contested and require new ideas and concepts to construct legitimacy” (p.226). Blum & Lövbrand (2019) further suggested that multiple storylines of how carbon markets are to be governed will emerge in the coming few years. Moreover, Lang et al. (2019) suggested that VCM market actors will likely develop two dominant coping strategies to adapt to changes brought by the Paris Agreement, i.e. aligning themselves with practices in the regulated carbon market and reframing their business activities toward supporting sustainable development rather than solely carbon offsetting. Lastly, Kreibich & Hermwille (2021) proposed that voluntary carbon credits will need to be accounted for by host countries' NDCs to ensure the market's legitimacy. All in all, current academic

literature on carbon markets from the market perspective are suggesting that new market mechanisms from the Paris Agreement have engendered a significant threat to the market's legitimacy, and market actors have been proposing new methods and narratives as coping mechanisms to re-establish their legitimacy.

It is observed that although there exists a large body of research about carbon markets and carbon offsetting in general, market studies about VCM are often conflated and combined with the compliance carbon market. It can be said that there is still a limited number of academic explorations done around studying VCM as a separate market, which includes some of the works mentioned above. A study on the early market development of New Zealand's VCM by Birchall et al. (2018) is another example of such a study, but it is noted that the empirical research of that study was conducted in 2010—before the Paris Agreement. Particularly pertinent for this thesis, there is a small number of market-shaping research that has been conducted around carbon markets, which will be discussed in an upcoming section.

2.1.2 Institutional Perspective on Market-Shaping

In studying the reshaping process of VCM after the Paris Agreement, the analytical framework of this thesis relies on a core assumption that market actors are not merely reacting to market changes, but rather actively contributing to the shaping of the market. This assumption is drawn from a rich history of market scholars who adopt an institutional perspective (inter alia Scott, 1995; Fligstein, 1996; Lawrence & Suddaby, 2006; Humphreys, 2010; Nenonen et al., 2014; Kjellberg & Olson, 2017). Kaartemo et al. (2020) summed up their conceptualizations of the market as, “socio-material systems created through processes of legitimation, where institutions—common habits, norms, routines, rules, and laws—guide the relations between and interactions of individual and collective actors” (p.402). This perspective expands the lens of portraying markets from simply looking at firm-customer dyads (Humphreys, 2010; Humphreys & Carpenter, 2018), toward a more systemic lens that includes such dyads as part of “a larger network or system of actors who, governed by institutional arrangements, contribute to the creation of value” (Nenonen et al., 2019, p.252).

Market-shaping studies are generally interested in studying “how established fields change and the agency of various actors within the field, such as the construction and stabilization of markets, as well as the potential role of strategic actors in these processes” (Kaartemo et al., 2020, p. 404). Further, in line with institutional theoretical frameworks, this thesis adopts Kaartemo et al.'s (2020) definition of market-shaping, i.e. “deliberate actions to move field conditions through creating, maintaining and/or disrupting markets as institutional fields” (p.404). This means that market-shaping implies a transformation of market norms and mobilization of institutional logics, as well as the “emergence and

institutionalization of new solutions” (Vargo et al., 2015, p.64), which may involve changes to institutionalized elements of market logic such as taken-for-granted practices, beliefs, assumptions, methods, or technologies (Schneiberg & Soule, 2005). Market-shaping within VCM is therefore studied in this thesis by analyzing how market actors are working to create, maintain, and/or disrupt these institutionalized elements of the market.

2.1.3 The Shaping of Carbon Markets

There is a small amount of academic research that studies the shaping of carbon markets (albeit not particularly the voluntary market) from an institutional perspective (inter alia Lohmann, 2005; Callon, 2009; MacKenzie, 2008; Knox-Hayes, 2010). Callon (2009) most notably discussed how carbon markets, as an ongoing experiment, force researchers to change their way of thinking about political and economic boundaries within a market. Building on his previous argument that markets come into existence through framing done by its participants (Callon, 1998), he argued that the carbon market is “an exceptional field for furthering our understanding of the joint processes of economization, politicization and scientification through which the forms of organization of economic, political, and scientific activities, their mutual relations and the challenges they are designed to meet, are redefined” (Callon, 2009, p.547). In other words, the problem of climate change has been simultaneously framed as an economic, political, and scientific problem, and thus carbon markets as a potential solution become a fertile experimentation ground wherein the boundaries of these domains are challenged.

Taking on Callon’s theoretical argument, along with other institutional analytical frameworks, Knox-Hayes (2010) designed an empirical study on the shaping of carbon markets. She concluded that carbon markets are a form of social network and do not arise naturally from supply and demand (Knox-Hayes, 2010). However, she also argued that the transnational nature of carbon market operations also means that the strength of carbon markets’ institutions cannot be determined by regulations alone (Knox-Hayes, 2010). Further, she suggested that carbon markets are built from other markets and, therefore, “operate according to the institutional norms and standards that structure it, incorporating the benefits as well as the flaws” (Knox-Hayes, 2010, p.195). These conclusions confirmed and expanded Callon’s theoretical argument, and ultimately demonstrated that carbon markets are a complex, ever-shifting, and interesting field for the study of market-shaping.

The complexity of studying carbon markets as institutions is further augmented when studying VCM as separate from the compliance carbon market, as VCM has come into being under the shadow of the compliance carbon market but is not directly regulated under UNFCCC. Recognizing the niche nature of the topic of this thesis, along with its relative newness (as some details of the Paris Agreement were only finalized during the 2021 COP 26 in Glasgow), this thesis is interested in developing a new

analytical framework that draws upon institutional theory to map out the complex market-shaping processes that are occurring in VCM.

2.2 Research Gap

The literature review conducted for this thesis suggests that research about carbon markets and market-shaping are both currently in a mature state. Nevertheless, the intersection between the two research domains remains limited and can benefit from more empirical studies. From this small intersection, to the researchers' knowledge, there is a gap in empirical work that focuses on the perspective of the supply side of VCM, i.e. voluntary carbon credit producers and distributors. This thesis aims to fill this research gap by investigating how VCM market actors—particularly those on the supply side—are influenced by changes in the market, and how their business activities are in turn influencing the market.

2.3 Theoretical Background

2.3.1 Institutional Work

A rapidly growing area of social science, institutional theory broadly bases institutions on three core elements: regulative, normative, and cultural-cognitive elements (Scott, 1995). When adopted to market studies, Chaney et al. (2019) suggested that “an organization is able to persist on its market and succeed only if its activity is supported by the three pillars, that is, if it is accepted, understood, and anchored in the mental schematas (cognitive pillar), if it is supported by the actors who have prescriptive power (normative pillar) and if it adopts existing laws and regulations (regulatory pillar)” (p.243). While early works on institutional theory tended to be more deterministic in nature by arguing that organizations must comply with these standards to succeed (DiMaggio & Powell, 1983), current scholarship on institutional theory has focused more on the agency of organizations, where organizations can perform “institutional work” (Lawrence et al. 2013; Chaney et al., 2019).

Lawrence and Suddaby (2006) defined institutional work as intentional actions by individual and collective actors to create, maintain, and disrupt institutions. Chaney et al. (2019) further developed Lawrence and Suddaby's (2006) definition and subsequent elaboration of institutional work as follows: in the emerging state, market actors are in the process of creating institutions and thus institutions are still being structured; in the mature state, firms “work to maintain a situation that favors their interests” (p.243); and in the disruptive state, new entrants come in and seek to change the institution, thus, creating conflicts. This description of institutional work provides a useful sequential framework to identify and map out the different states of institutional work under the market-shaping process (see Figure 3).

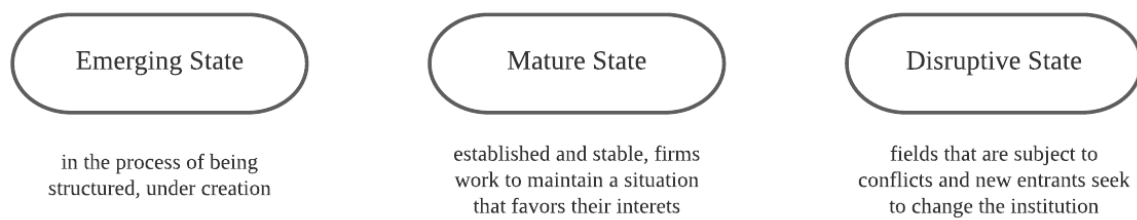


Figure 3: The three states of institutional work (adapted from Chaney et al., 2019)

2.3.2 Emergent Collective Market Work

Expanding upon the theoretical concept of institutional work and applying it to market-shaping study, Nenonen et al. (2019) developed the concept of “market work” which is defined as “purposeful efforts by a focal actor to perform and transform markets” (p.251). It is therefore implied that activities, or market work, conducted by a key market actor can change the shape of institutional logic and norms of a market. This concept of market work, which only focuses on an individual market actor, was further developed by Baker and Nenonen (2020) to incorporate a larger network of actors and explain the role of collective action toward market-shaping. This new framework called the “emergent collective market work” combined the framework of institutional work as defined by Lawrence and Suddaby (2006) with the social emergence paradigm.

The social emergence paradigm was originally developed by Sawyer (2005) to overcome the limitations of the two incumbent sociological perspectives that explain the emergence of a phenomenon, which were the structurationist perspective, which focuses on the relationship between individuals and social systems, and the interactionist perspective, which focuses on middle-level interactions (Baker & Nenonen, 2020). With this paradigm, Sawyer argues that phenomena emerge from interactions in five ontological levels or “frames” of analysis: individual level, interaction level, ephemeral emergents, stable emergents, and social structure (Sawyer, 2005). This paradigm was later adopted in market literature by Taillard et al. (2016) by integrating it with the theory of shared agency (see Figure 4). Eventually, this framework has allowed these scholars to understand how market ecosystems emerge from five different ontological levels, and thereby can be useful as a frame to analyze the different levels of market work undertaken by market actors in a market-shaping process.

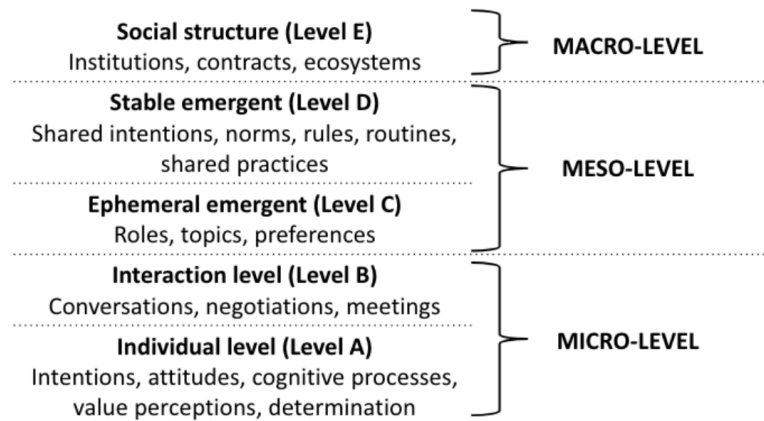


Figure 4: Social emergence paradigm (Baker & Nenonen, 2020, adapted from Taillard et al., 2016)

Ultimately, the framework that was developed by Baker and Nenonen (2020) has introduced an insight into how collective market work is driving a market-shaping process. By breaking down different market-shaping phenomena into different emergence stages—which was informed by Sawyer’s (2005) ontological levels—they were able to identify the functions and features of each emergent stage, as well as the market works that were undertaken by market actors as a collective. This analytical framework breaks down complex market-shaping systems into identifiable subsystems which allows the researchers to explain how individual market works of different market actors shape collective market works.

2.4 Theoretical Framework

By combining the sequential framework of institutional work as summarized by Chaney et al. (2019), the emergent collective market work framework by Baker and Nenonen (2020), and the empirical findings from this thesis, the analytical framework developed in this thesis aims to identify and map out the market works conducted by VCM market actors that are studied. Informed by the empirical findings of the research, the framework maps out the functions of market work along two axes (see Figure 5). The horizontal axis represents the market-shaping states (emerging, disruptive, and mature), while the vertical axis represents the ontological levels of the market works undertaken by market actors (individual level, interaction level, ephemeral emergent, stable emergent, and social structure). This mapping subsequently facilitates the researchers in explaining how the actions of VCM businesses and entrepreneurs, informed by their perceptions of the realities in the market, are reshaping the market.

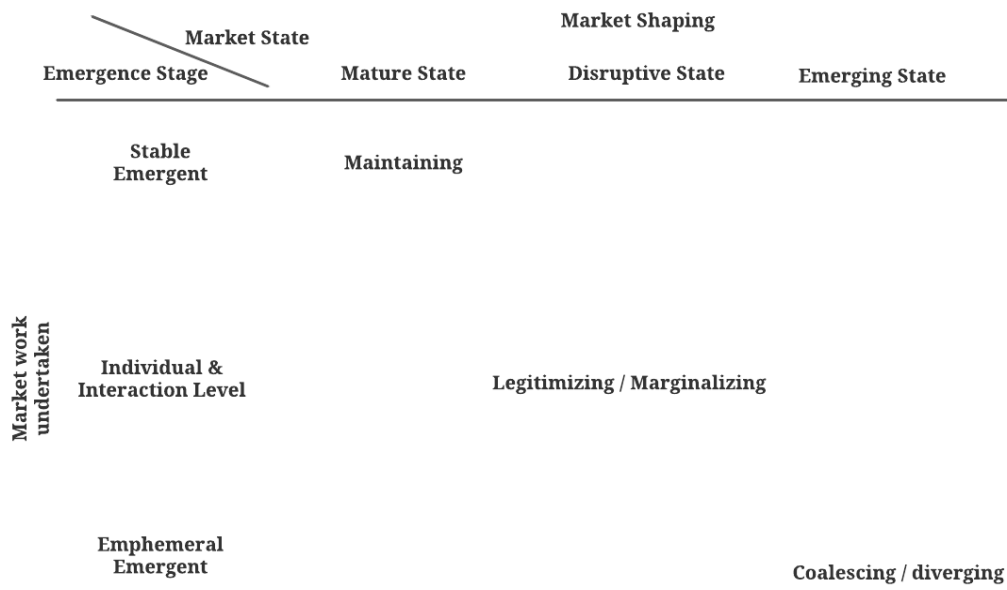


Figure 5: Theoretical framework to map out institutional works conducted by market actors

3. Methodology

3.1 Research Design

The main purpose of this study is to map out the market-shaping processes of VCM in Sweden by way of investigating the collective market work conducted by market actors. To fulfill this purpose, market actors' sense-making processes and how different ideas interplay with each other are studied. Hence, this thesis is designed and approached using methods under the interpretivist paradigm, which is concerned with studying the sense-making and meaning-making processes of shared experiences, and typically focuses on interactions between actors (Romani et al., 2018). Under the paradigm, interpersonal interactions are seen as “a system of social interactions with negotiated contextual meaning” (Romani et al., 2018, p.251). Meaning is constantly reframed and reshaped to make sense of perceived reality. The Paris Agreement can therefore be seen as both a product and an impetus of how people, organizations, and societies make sense of the changing climate. To investigate these sense-making and meaning-making processes, a grounded theory approach (inductive study) is chosen to allow for the revelation of a theory that is based on research findings, instead of the other way around. Thus, the research approach is iterative, meaning that data collection and analysis are conducted in tandem (Bell et al., 2019). Furthermore, to allow such revelations, the research takes on an exploratory approach that does not build preconceived hypotheses and allows for open-ended results (Bell et al., 2019).

As discussed in the previous chapter, this thesis is interested in understanding VCM as complex institutions. This assumption is aligned with the grounded theory approach's basic recognition that the organizational world is socially constructed (Gioia et al., 2012). Consequently, based on the approach, it is also assumed that “the people constructing their organizational realities are ‘knowledgeable agents,’ namely, that people in organizations know what they are trying to do and can explain their thoughts, intentions, and actions” (Gioia et al., 2012, p.17). In this study, actors within VCM are thus identified as “knowledgeable agents”. This thesis is interested in understanding their lived experience and rigorously examining their thoughts and reasonings. To do so, semi-structured interviews have been chosen as the main data collection method. The decision to conduct interviews was made to allow the researchers to access multiple perspectives within similar types of market players—instead of just one player's perspective using a case study—which then can be compared and contrasted to produce a more nuanced insight. The semi-structured interview method is further chosen to allow interviewees to freely express their thoughts and feel comfortable in sharing their honest views and would allow the researchers to follow up on new information that was presented during the interviews.

3.2 Data Collection

3.2.1 Background Research

In line with the grounded theory approach convention, the researchers did not conduct an in-depth literature review before conducting the interviews to avoid bias towards a certain theoretical outcome (Gioia et al., 2012). However, background research was conducted to inform the researchers of the terminologies within VCM and mainstream debates that are ongoing within the sector, as well as to identify the VCM market players within the Swedish market. The background research was conducted by way of reading industry reports and media coverage around VCM, reviewing market actors' company websites and promotional publications, and interviewing three experts within the fields of corporate responsibility and carbon trade. The background interviews were conducted in an unstructured manner which allowed the researchers to brainstorm ideas with the experts, and they are neither recorded nor directly used in data analysis.

3.2.2 Interviews

In selecting interview subjects, the researchers took a purposive sampling approach. This means that the subjects are strategically selected based on their relevance to the research question (Bell et al., 2019). The interview samples in this research are purposely narrowed down to only include actors in the upstream side of VCM, which are project developers and intermediaries (brokers and retail traders) and have a market presence in Sweden. Overall, the researchers identified and sent interview requests to 30 companies that can be categorized as upstream market players in Sweden's VCM. From there, representatives from 13 companies consented to be interviewed. These representatives include the companies' founders, senior executives, managers, and consultants. In addition to these market actors, four expert interviews were also conducted to provide deeper nuance and understanding of VCM (see Table 1 for the list of interviewees).

Participant (P)	Type of Role	Position	Date of Interview
P1	Market Actor - Intermediary	Founder & CEO	2022-02-28
P2	Market Actor - Project Developer	Founder & CEO	2022-03-02
P3	Market Actor - Intermediary	Consultant	2022-03-03
P4	Market Actor - Intermediary	Founder & CEO	2022-03-04
P5	Market Actor - Project Developer	Founder & CEO	2022-03-04
P6	Market Actor - Project Developer	Consultant	2022-03-07
P7	Market Actor - Project Developer	Founder & CEO	2022-03-09

P8	Market Actor - Project Developer	Founder & COO	2022-03-15
P9	Market Actor - Project Developer	Country Manager	2022-03-15
P10	Market Actor - Intermediary	Manager	2022-03-16
P11	Market Actor - Project Developer	Manager	2022-03-16
P12	Expert	Researcher	2022-03-25
P13	Market Actor - Intermediary	Manager	2022-04-01
P14	Expert	Researcher	2022-04-01
P15	Expert	Researcher	2022-04-05
P16	Market Actor - Intermediary	CEO	2022-04-06
P17	Expert	Researcher	2022-04-18

Table 1: List of interview participants

Due to varying company policies and comfort levels around in-person meetings amid the COVID-19 pandemic, the researchers decided to conduct all interviews digitally. The interviews were conducted using video conferencing services—primarily Microsoft Teams, but Google Meets and Zoom were also used in some interviews due to the interview subjects’ convenience and company policies surrounding external meetings. Due to the use of camera and microphone functions, it can be argued that these video interviews are comparable to face-to-face interviews (Deakin & Wakefield, 2014; Nehls et al., 2015). Moreover, after around two years of the COVID-19 pandemic, it can be argued that all parties involved in this research are conditioned to video calls, and thereby a deep understanding of the subjects’ perceptions and nuances in the conversation can be obtained by the researchers.

The interviews typically took place between 30 and 60 minutes, depending on the interviewees’ availability, and therefore the average time of all the interviews was 45 minutes. Both researchers were present in all of the interviews to reduce the risk of biased interpretation (Belk et al., 1989). At the beginning of each interview, the researchers introduced the purpose of the research and requested each interviewee’s expressed consent to be a subject of the research. The researchers also communicated that the interview subjects are to be treated anonymously to protect their privacy and allow them to speak freely and that the data collected from the interview would be treated in line with the Stockholm School of Economics’ data privacy policy. All of the interviews except for one were recorded on one researcher’s local device to be used for the transcription process—the one who did not consent to be recorded agreed that the researchers can take verbatim notes of the interview.

As previously mentioned, the interviews followed a semi-structured approach where the researchers have an interview guide with a list of questions, but the questions being asked in the interview may not be asked in a pre-planned or structured way (Bell et al., 2019). During interviews, the researchers typically asked follow-up questions to the interview subjects' comments or answers, and "ramblings" or tangential discussions are encouraged to give insights into the subjects' train of thought (Bell et al., 2019). The interview guide for the research subjects contains five questions with suggested prompts and follow-up questions (see Appendix 1), which were developed based on the core elements of the thesis' two research questions. The first core element is to understand the actors' perceptions of the market realities within VCM and their individual or company's role within the market. The second core element is to investigate how their market perception, and consequently their business activities, are contributing toward strengthening, expanding, or changing the market institutions within VCM. Notably, as more and more interviews were conducted, the researchers increasingly gained more insights about the market and therefore could ask deeper, more nuanced questions to the subjects albeit still following the interview guide. A similar semi-structured approach was taken for the expert interviews, however, the questions and conversations were adjusted according to their subject matter expertise (see Appendix 2).

3.3 Data Analysis

Following the interviews, the researchers reviewed the verbatim interview transcripts to check their accuracy and clarify any inconsistencies directly with the interviewees. Once the quality check was conducted, the researchers started coding the transcripts following the methods laid out by Gioia et al. (2012). A first-order analysis is conducted by highlighting notable information and logical reasonings said by the interviewees, and summarizing it into shortcodes that still faithfully adhere to the terms used by the interviewees. Afterward, an interpretive thematic analysis was conducted by grouping the codes into three categories that are informed by the social emergent paradigm as presented by Baker & Nenonen (2020), which were micro-level, meso-level, and macro-level emergence. The micro-level emergence category comprises phenomena at the individual level (which includes individual intentions, attitudes, cognitive processes, value perceptions, and determination) and interaction level (including conversations, negotiations, and meetings). Meso-level emergence is made up of ephemeral emergent (including trends, ongoing topics, roles, and preferences) and stable emergent (including shared intentions, norms, rules, routines, and shared practices). Whereas macro-level emergence refers to the social structure (institutions, contracts, and ecosystems).

The coding was done using a word processing software, and then the grouped codes were transferred to a spreadsheet software, where the codes were moved around to find similarities and further distilled into "aggregate dimensions" (Gioia et al., 2012). Emerging data, themes, concepts, and dimensions

are connected to existing academic literature to identify whether they have precedent or are rather new concepts (Gioia et al., 2012). Aided by existing institutional market-shaping frameworks as discussed in the previous chapter, a new framework based on the new empirical findings was then developed. Finally, the new analytical framework is used by the researchers to formulate answers to this thesis' research questions.

3.4 Quality Considerations

In qualitative studies, the researchers need to conduct a self-critical audit where readers can assess the study's rigor and trustworthiness (Lincoln & Guba, 1985; Johnson et al., 2006). Therefore in this section, the researchers are providing such an audit trail based on Lincoln and Guba's (1985) quality criteria, i.e. credibility, transferability, dependability, and conformability.

Firstly, the researchers strive for credibility in the interviews by ensuring that the VCM actors subjected to this research are represented by a senior management member of each company. This ensured that the interviewees' answers closely represented the core tenant of each company's values and philosophies. Notably, the majority of market actors interviewed in this research either founded or are leading the companies, making them a credible representation of the companies. Moreover, two researchers are present in all of the interviews, and transcriptions are verified by both researchers to minimize misunderstanding of what interviewees say. These measures are taken to ensure that the realities represented in this thesis align with the realities perceived by the research subjects (Lincoln & Guba, 1985). Secondly, by extracting second-order categories and aggregate dimensions in the analysis of the primary and secondary data, the findings in this thesis can be transferable to address a larger audience (Lincoln & Guba, 1985; Gioia et al., 2012). While the study focuses on actors within the Swedish VCM, the theoretical contributions of this thesis are also intended to address the wider market-shaping mechanisms where competing and emerging market institutions are mobilized by various institutional works by market actors.

Thirdly, to minimize researcher idiosyncrasies in the development of this thesis, the two researchers continually triangulate their perceptions and reflections to one another and the thesis supervisor. Further, during the expert interviews—which took place toward the end of the research—the researchers also triangulated their temporary findings, to corroborate them with the wider bodies of research and industry discussions. An in-depth literature review was also conducted after the interviews to cross-reference and substantiate the interview findings. Overall, these efforts were conducted to demonstrate the dependability of this study, particularly to ensure the convergence and consistency of meaning (Johnson et al., 2006). Fourth and lastly, throughout the research process, the researchers kept open and honest communications with one another and with the thesis supervisor to

encourage reflections on each and every step of the research and writing processes. This openness, as well as the researchers' discussions with expert interviewees, are done to maintain self-awareness for the researchers and thus establish objectivity with confirmability (Johnson et al., 2006). All in all, measures to safeguard the academic rigor of the qualitative study were taken by the researchers throughout the research, analysis, and writing processes.

3.5 Ethical Considerations

Diener and Crandall (1978) summarized the ethical principles in social science research in four main areas: whether there is harm to participants; whether there is a lack of informed consent; whether there is an invasion of privacy; and whether deception is involved. With these principles in mind, the researchers identified that consent, privacy and transparency are the most prominent ethical risks in this research that need to be properly managed. Therefore, in the interview invitation emails sent out to interviewees, the researchers included the clear and transparent purpose of the research, as well as information that the interview results will be anonymized (see Appendix 3). Further, during the interviews, the researchers always started the meeting by asking interviewees for their expressed consent for the interview to be recorded and a caveat that the result will be anonymized and non-attributable. To ensure data privacy protection, the recordings and notes from the interviews are only saved either locally on the researchers' devices or in a shared drive hosted by the Stockholm School of Economics. Moreover, in analyzing and writing the thesis, the researchers were careful to ensure the anonymity of the interviewees while not altering any of the information they conveyed. After the thesis is completed and submitted, all forms of recording of the interviews are deleted.

3.6 Methodological Limitations

The scope of research in this thesis is limited to the Swedish market, particularly to companies that are active in the upstream side of VCM. Therefore, the researchers recognize that there might be cultural or contextual specificities that need to be taken into account before generalizing the findings to a wider set of the population. Furthermore, the time constraints of this thesis project have also limited the number of samples in this research. With regards to the content of the interviews, the data collected from each interview subject is limited to the methodological constraints of a semi-structured interview—the researchers can only use data that are either provided by the interviewees or publicly available—and within the time availability of the interviewees.

4. Empirical Findings

4.1 Overview of VCM Actors in Sweden

Before presenting the empirical findings from the interviews, a mapping of the Swedish VCM landscape is presented in this section to provide a clear contextual understanding of the market. This mapping is a result of the researchers' background research and is validated by subsequent interviews and literature reviews. As previously mentioned, the researchers have identified and contacted 30 market actors that are included in the scope of this thesis, although the list is not exhaustive of all project developers and intermediaries that have a presence within Sweden's VCM (see Table 2). Out of the 30 identified market actors, notably, 11 market actors provide similar services, i.e. corporate sustainability consultancy services. These services typically include: corporate carbon footprint calculation and analysis; emission reduction strategy development; carbon credit purchasing (some companies are directly involved in the carbon projects' development, while some companies only compile the carbon project portfolio to be purchased or invested in); and corporate sustainability communication strategy. These market actors include large multinational sustainability consultancies, small to medium-sized Swedish or European boutique consultancies, and freelance consultants. These consultancies are typically hired by corporate clients to develop and manage their strategies for reaching their climate commitments.

Comparable services are also offered by the next five market actors, but rather than offering them in the form of consultancy, they offer intermediary services in the form of information technology-based management dashboards. These technology platforms typically offer automated carbon analysis and offsetting services that are integrated with the client company's information technology systems. The majority of these companies are still in the start-up phase, and notably, some have gained significant investor funding. In addition to the two aforementioned types of intermediaries, the researchers also identified another type, i.e. carbon brokers and retailers who sell carbon credits (that were produced by various project developers around the world) to corporate or individual clients. The researchers found four companies that can be grouped in this type, and while two of them rely on mainstream voluntary carbon credit standards such as the Gold Standard, two companies have developed their own standards.

The remaining 10 companies identified for this thesis fall under the category of carbon project developers, which means that they produce carbon credits. While four companies sell voluntary carbon credits as their core line of business, the researchers also identified five other organizations that sell voluntary carbon credits as an additional source of income. These include three non-governmental organizations, a social enterprise, and an agricultural product company. One last

project developer that was identified has a unique business offering. It develops carbon projects and sells carbon credits directly to corporate and individual buyers, but its main value proposition is its technology-based carbon and investment platform that uses blockchain technology to validate the projects' climate impact.

No.	Type of Market Actor	Products & Services	Founding Year
1	Intermediary - Environmental Sustainability Consulting Services	Carbon footprint calculation; Carbon reduction consultancy; Carbon offsetting; Certification	2002
2		Carbon calculation; Carbon offsetting	2002
3		Climate reporting; Climate neutral consulting and certification services; Science Based Targets consulting services; Education services; Life cycle analysis; Climate compensation	2006
4		Carbon accounting; Carbon offsetting; Science Based Targets consulting services; Climate certification	2006
5		Carbon footprint calculation; Carbon emission reduction; Carbon offsetting; Communication; Science-based targets consultancy; Planting trees without compensation	2006
6		Climate change solutions; Climate investments; Project development & financing	2006
7		Business intelligence; Carbon calculation and reporting; Carbon offsetting; Communications (public affairs, public relations)	2013
8		Climate reporting; Carbon offsetting; Climate advisory	2017
9		Carbon removal project certification, Advisory for carbon compensation	2018
10		Carbon management advisory	2020
11		Carbon removal advisory; Communications	2021
12	Intermediary - Technology platform	Carbon accounting; Emissions hotspot analysis, Carbon reporting, Climate investment	2014
13		Climate impact management dashboard; Real-time carbon calculation; Emission reduction tools; Emission offsetting	2019
14		Emissions data modeling and measurement; Funding carbon removal projects	2019
15		Customized carbon removal portfolio; API integration (carbon credit purchase automation)	2020

16		Automated estimation of carbon footprint for business activities; Automated purchasing of carbon offset and removals; Communication content	2020
17	Intermediary - Brokers / Retailers	Air travel-focused carbon compensation	2005
18		Personal carbon calculation; Direct carbon offsetting purchase	2017
19		Carbon removal credit marketplace	2018
20		Find and fund climate impact projects	2018
21	Project developer - Participating in VCM as main business	Bioenergy carbon capture and storage	2007
22		Tree planting as climate subscription	2019
23		Carbon capture through spreading nutrient in forest	2019
24		Carbon capture using grass	2021
25	Project developer - Participating in VCM as additional income	Forestry NGO	1983
26		Green technology social enterprise	2008
27		Agriculture NGO	2019
28		Forestry NGO	2020
29		Biochar business	2020
30	Project developer - Unique model	Carbon project financing	2019

Table 2: Summary of VCM market actors identified using purposive sampling approach

Each of these intermediary and project developer types are represented in the 13 empirical interviews which results, along with the four expert interviews, are elaborated below. The presentation of the interview results is structured according to Sawyer's (2005) social emergence framework.

4.2 Micro-Level Emergence

In this section, the micro-level emergence identified from the empirical interviews is presented. Micro-level emergence includes phenomena that emerge on the individual and interaction levels. Individual-level emergents were identified as individual attitude, determination, intention, and value perception, with all four highly interlinked with one another. Further, the collective interactions among individuals were also identified as vehicles to support their individual beliefs and intentions. These interaction-level emergents include conversations, negotiations, and meetings with other market actors and stakeholders.

4.2.1 Individual-Level Emergent: Personal Purpose and Climate Anxiety

Upon introducing themselves and explaining the reason why they either started a business or work within VCM, the majority of interviewees said that they wanted to be a part of the solution to climate change. Despite having diverse educational and professional backgrounds, many interviewees said that they have a personal stake to leave the world a better place for future generations. Notably, “climate anxiety” was mentioned or implied by multiple interviewees to be the reason why they wanted to work in this field.

“My key drivers are my kids. I started thinking a lot about what kind of future they are facing and what we are responsible for. I want my kids to have a livable planet, and I cannot just sit on the sidelines and trust that everyone else will do something.” - P1

“I had a minor life crisis and basically wanted to work with more forward-thinking questions for the future. I have always been interested in environment and sustainability and I thought, well, why not use my network and competencies to really scale some of the climate efforts.” - P9

“I switched careers to climate change because I see it as one of the biggest issues that we need to deal with in the next 10 years. If we have not solved it by then, we are basically doomed.” - P16

For the minority of interviewees who do not mention any personal purpose for solving climate change, they cited that the market opportunities within VCM are rising, and thus they explored the opportunity to enter the market, either with a new business idea or incorporating existing businesses that they already had. Even so, the researchers note that these interviewees’ corporate communications materials still signal the same purpose-driven mission employed by most of the market actor interviewees.

“We were against the carbon market for a while, we thought it was all greenwashing. But we found that the carbon market is really growing quite quickly and that suppliers are gaining carbon removal credits. So, we saw an opportunity to become a carbon credit issuer.” - P7

4.2.2 Individual-Level Emergent: Determination to Change the Status Quo

The sense of individual purpose and climate anxiety subsequently trickled down into most of the interviewees’ attitudes toward the normal ways of doing business within VCM. Some of them raised questions about the status quo and stated their dissatisfaction with current standards and practices within VCM.

“In my view, planting trees in Sweden could never be additional. It is very frustrating to see that some companies are trying to sell this as offsets. It is a bluff.” - P2

“The carbon calculators that I found, they asked the questions in strange ways on details of exactly how many kilowatt-hours I use for electricity and so on, which means that you have a high drop off rate, and they used language tones that did not really work well.” - P4

“There are so many (VCM standard) initiatives now. I think we only need one oversight initiative, because now it feels like there is a lot of money going into this sector, so then a lot of people in high-ranking NGOs are going and starting these big initiatives. I feel like it is going to cost a lot of money that could have gone into actually doing things on the ground.” - P13

The dissatisfaction with the status quo in VCM was also observed during expert interviews. Academics were generally skeptical of the common practices within VCM and how much positive impact they generate.

“By introducing the carbon component to any tree restoration project means that you have to know exactly how much carbon each particular tree will store. You have to measure, and you have to protect that particular tree—you have to guarantee that the tree is going to be there for a long time, that the tree would not have been planted otherwise. That is complicated, and some projects would be better than others. ... That introduces the risk for project developers to prefer less complicated projects such as monoculture plantations, and that is not good for the sustainability of local communities.” - P15

Many interviewees stated their intention to come up with or contribute to solutions to fix the problems within VCM as they perceive it. Some interviewees even stated their determination to set up new market standards.

“Traditionally when someone buys carbon credits, there needs to be a physical verification of whether the project actually happens. That is where we come in and innovate. We make the process better using technology.” - P8

“We have not used global standards like Gold Standard or Plan Vivo. Our affiliated company created their own standard for carbon offsetting because we do not think the carbon offsetting models are suitable for countries in the Northern European area.” - P5

Most interviewees share their confidence in the value of their role and contribution toward solving climate change. Some also shared their sense of responsibility to become the market leader within VCM and educate the public regarding the carbon market.

“I think our solution is not the only solution, you can look at the problem and design the solutions from so many ways. The core thing that we have is the blueprint, and we encourage other companies to adopt it.” - P3

“We see it as our responsibility to educate people about this area and to be a source of education for people. And just be the ‘go-to’ when it comes to high impact carbon removal.” -P1

4.2.3 Interaction-Level Emergent: Conversations and Collaborations

In explaining and talking about their respective business models and activities, all interviewees refer to conversations they had with others. These conversations typically take place with other entrepreneurs or market actors who share the same purpose, experts in their respective fields, or technological innovators. For most interviewees, these conversations further laid the building blocks for collaborations and shared actions among stakeholders and other market actors.

“I and my co-founders met in the context where we have thought about what can be done in a systematic way, or even changing the paradigm.” - P8

“We got in contact with a professor at [a university] who is one of the leading professors within that field.” - P5

“We are implementing the newest technology to our business model, and here we have to work with technology partners to ensure that we are working with the best quality projects.” - P9

In addition to having small-scale conversations, almost all of the interviewees also participate in climate-related conferences and seminars to advocate for their understanding and stance on the shared challenges and their solutions. These larger-scale conversations are also paramount sources of networking and education where they have the opportunity to selectively connect with people sharing the same perceptions, while at the same time being exposed to and challenged by other beliefs.

“I have continued to be talking about our solutions at webinars and events to educate people about this topic.” - P3

“I have been to many UNFCCC conferences. I was one of the people who created [a subgroup] within the UNFCCC. There are a number of different forums that we are also involved in, particularly those that are focused on impact start-ups.” - P8

“If we are not active on these (climate change) platforms, we will not be considered as important as some other players. So it is in our interest to really contribute to make sure that we are working together towards the same common goal which is a better climate, better world.” - P9

4.3 Meso-Level Emergence

This section presents the meso-level emergence that was identified during the interviews. Meso-level emergence includes phenomena that can be categorized as ephemeral emergent and stable emergent. As market players identify themselves with other players who share the same beliefs and thus act in the same way, new market logic starts to emerge, and it marks the beginning of the ephemeral emergent. Three components were identified under this level, i.e. collective preference, the role undertaken, and visions. Stable emergent was differentiated from ephemeral emergent by considering market players' recognition of an emergent as factual, objective market procedures and information, and oftentimes shaped by not themselves but by high-level initiatives. Here several shared market norms were identified as stable emergent in the VCM.

4.3.1 Ephemeral Emergent: Shifting Preferences Based on Carbon Project Types

When discussing the competitive landscape within VCM, most interviewees acknowledged that there are ongoing uncertainties concerning the dominant market logic. The changing market preference over certain carbon project types, particularly carbon removal versus carbon avoidance project types, came up in discussions with most interviewees. While many stated their preference for carbon removal projects, some acknowledged that funding for both types of projects is equally needed. Many interviewees also brought up the roles of big, high-profile buyers in popularizing the preference for carbon removal projects.

“There is a main development that you need to be aware of. We have been moving very much from avoidance projects, where you prevent carbon dioxide emissions from happening. The global offsetting portfolio is still dominated by avoidance projects. But there has been a huge focus on removal projects right now, which means that you are absorbing carbon dioxide from the atmosphere.” - P9

“Our assessment is that the climate problem is burning, and we do not have the luxury of saying we would rather favor removal over avoidance. We need to work on every form where we can, in avoidance as much as removal.” - P16

“The (carbon removal) projects that are permanent, like direct air capture, are still extremely expensive. Microsoft, Stripe, Shopify and other companies who have a lot of money, actually invest and buy early in them. In the long term, I think this is where we are going.” - P4

Preferences over different types of carbon removal projects were also identified, i.e. between nature-based solutions and mechanical solutions. While the majority of interviewees acknowledged the future market potential of mechanical direct carbon capture technologies (which is also deemed by some interviewees as being more permanent than nature-based solutions), they also said that nature-based solutions are currently more feasible and scalable. Further, some interviewees also raised the aspect of co-benefits with nature-based solutions. They argued that nature-based carbon capture projects would benefit local communities, whereas mechanical solutions would not.

“At the time, the market was moving heavily towards nature-based solutions. And yes, obviously we work with that, as we develop new projects with forests, mangroves and seagrass. We are also moving toward technology, with the whole carbon capture and storage thing. But at the same time also I don’t think we have the luxury of being picky about which solution is a good one. We need direct air capture technology as much as we need forests or seagrass.” - P16

“The carbon market is driven by natural climate solutions and not high technical projects. In the future there will probably be more (technical) direct carbon capture projects, but they now cost 1000 times more than our (nature-based) projects.” - P2

“There are nature-based solutions and then there are more mechanical solutions. But these (mechanical) solutions are extremely expensive, which is one big barrier. Another barrier is that the co-benefit is not there. So, if you are supporting nature-based solutions like the way that we work, you’re hitting many more of the UN Sustainable Development Goals. You are working on climate, while at the same time improving biodiversity, reducing poverty, hunger, and creating livelihoods. Those things do not happen in mechanical carbon projects.” - P8

4.3.2 Ephemeral Emergent: New Market Logic Away from Offsetting

Many (but notably, not all) interviewees shared their observations about an emerging market trend where companies are funding carbon projects not for the sake of offsetting, but rather as a form of

climate action to reach the global goal of net-zero. In other words, the goal of net-zero emissions by 2050 should not mean that each company needs to reach company-level net-zero emissions by 2050 through offsetting, but rather companies should contribute toward the long-term global efforts toward limiting global warming to 1.5°C and reaching net-zero emissions by 2050. Such contribution could be in the form of financing the research or development of climate projects that would potentially be beneficial in the long run.

“There is a trend towards more carbon removal and not offsetting. And it looks like our project is in the right position.” - P2

“We have a client, a company that is very concerned about climate change and they have a product that is very sustainable in many ways. They are not (funding carbon removal projects) to offset anything. They are just doing it to do climate good, for climate impact.” - P1

“The market for carbon offsetting is moving in a very uncertain direction. ... In the bigger picture, I think we are moving away from carbon offsetting as we know it toward impact finance. So (companies) make impact claims instead of offsetting claims.” - P16

This trend of moving past carbon offsetting is also shared by two of the expert interviewees. One interviewee argued that academic discourse about carbon markets after the Paris Agreement has generally moved on from studying carbon offsetting toward studying societal transformations to reach independence from fossil fuels. The other interviewee suggested that companies should not try to reach the net-zero of their emission, but rather use VCM as a tool to contribute toward the global goal of limiting global warming to 1.5°C.

“Interest in the carbon market dropped after the COP in Copenhagen. Scholarly interest in the carbon market and academic debates moved, I would say, in view of the Paris Agreement. It moved toward the direction of studying societal transformations—how do we transform society so it becomes independent of fossil fuels. ... So, I think that there is a general feeling that time has passed, and we do not have time for offsetting anymore. We need to really do the work that offsetting postponed.” -

P12

“I guess the academic in me says, well, this is all arbitrary, right? Carbon neutrality. From the perspective of global climate change, there is nothing magical about that number. You could make a strong case on equity grounds that companies in the global North ought to be going net negative in terms of what their fair contribution to global climate change efforts is. So, what I would like to see, and this may be overly idealistic, but what I have been arguing for and what would hope to see is that

we can reorient this market away from this idea of offsetting and more towards this idea of mitigation finance that companies have an obligation to reduce their own emissions, to also fund mitigation efforts around the world. Whether that is reductions or removals that ought to be part of their portfolio, we ought to frame what they are doing as their contribution to global efforts to get to net-zero, and these investments are having a meaningful impact.” - P17

4.3.3 Ephemeral Emergent: Transparent Communication

Given the murky market landscape with shifting preferences and dominant logic, many interviewees stated that they are adopting a precautionary approach by communicating transparently to the customers about what they know and do not know.

“We need to practice learning by doing, but also at the same time be very, very careful in how we communicate and what we do know and do not know and take a very precautionary approach to this whole issue and we're trying to take this into consideration as well moving forward.” - P11

“That is the one thing that we are very transparent about, that our storage is not permanent. We can guarantee it is a long storage, about 50 years or something at least. But we do not know what will happen in 2070. Do we use forest resources as we do now? We do not know.” - P2

4.3.4 Stable Emergent: Corporate Branding

Many interviewees acknowledged that the ultimate purpose of companies in pledging net-zero goals—and, in extension, purchasing voluntary carbon credits—is to gain market legitimacy, i.e. for corporate branding. Due to intensified consumer consciousness of the changing climate and the need for climate actions, companies are increasingly pressured to appear to strive for carbon neutrality.

“Basically you cannot be a legitimate business, can you, without having a net-zero target.” - P14

“We have a lot of companies that try to come and work along their value chain. For example, if you have a car company, usually you want to do something that is transport-related. ... Or for example if they do business in, say, Ethiopia, then they want to fund the project that is in Ethiopia. This is because they use offsetting for communications, essentially for them it's marketing. More often than not, they seek for some kind of a communicable relationship between the projects and their business”

- P16

“Well, offsetting was done for employee branding or marketing reasons. I am saying that you do not really need offsetting for that. If you can fund carbon removal projects outside of offsetting, and

communicate it in a way that is more aligned with market sentiment and what employees want, that would be better.” - P3

Interestingly, one of the expert interviewees shared an anecdotal story that relates to this corporate pressure toward communicating their carbon neutrality. The story further demonstrates the societal pressure faced by companies to market themselves as carbon neutral.

“We interviewed a [redacted] company. They said that they have a successful forest restoration and conservation project in South America that they have been working on for 20 years. But then, they said that they have also added two other projects in Africa. ... When we asked why they did not just reach 100% compensation in South America, they said that it was too expensive and the African projects were cheaper. And then, when we further asked why they did not just say they compensate 80% of their emissions, they said that it does not sound so good for the business, that the customers must see 100% climate compensation.” - P15

4.3.5 Stable Emergent: External Sources of Legitimacy

Another form of stable emergent recognized from many of the interviews was the need for external validation as a source of legitimacy. An expert interviewee pointed out that before the Paris Agreement (under the Kyoto Protocol regime), legitimacy was gained by implementing similar carbon compensating standards as the regulated market under CDM. The interviewee argued that third-party standard-setting organizations have been playing the role of granting such legitimacy—that the voluntary carbon credit is on par with the standards set up under UNFCCC. This need for legitimacy from external standard-setting organizations has continued to be relevant under the Paris Agreement era, as many interviewers cited standard-setting organizations as their sources of legitimacy.

“The voluntary market, in order to gain legitimacy, had to mimic a lot of the rules that were set up for the CDM. And so here comes all the voluntary standards for these crediting processes to ensure that to avoid double counting to ensure transparency, additionality and all those sorts of key virtues in this market.” - P12

“The majority of carbon credit buyers will not really care if it is removal or reduction as long as it is certified.” - P3

“We offer carbon offsets in Gold Standard certified products and the reason we do that is because it is the highest standard out there.” - P4

“Plan Vivo is unrivaled, in my opinion, because usually in the voluntary carbon market, the barrier of entry is quite high for projects. So, Plan Vivo makes it a bit easier to access these markets.” - P13

At the moment, we are relying on verifications, such as from Verra or European Biochar Certificate and so on.” - P1

This stable, shared norm also manifested in agreed rules, processes and procedures around VCM practices, with additionality, traceability, permanence, and co-benefit as key metrics for project validity.

“Now there is a lot of focus in developing projects that are high quality, which is measured by additionality and permanence.” - P6

“There is a greater recognition now about problems with baseline setting at the project level, the potential for there to be hot air in those credits, for there to be issues on permanence and leakage.” - P14

“You will not get a Gold Standard certification if you cannot at least prove three UN Sustainable Development Goals that are positively impacted, and we need to quantify them. One of the three is climate change, but there needs to be two others.” - P16

4.4 Macro-Level Emergence

The final frame under the social emergence paradigm is macro-level emergence, which refers to the social structure underlying the market. Social structure can either be established by market authorities or worked up from the evolution of a stable emergent (Baker and Nenonen, 2020). In the context of VCM, global initiatives such as the Paris Agreement are setting the shared ultimate societal objective, which was then adopted by the market actors. Such macro-level emergent was observed to be mentioned or implied in all of the interviews. As demonstrated in previous sections and extensively discussed in previous chapters, the Paris Agreement—and UNFCCC in general—has introduced a dominant market logic that impacts every actor’s action from standard-setters and project developers to brokers and buyers.

“As you know, it is not going to be enough to only cut emissions. We are going to need to remove carbon from the atmosphere to be able to keep it to 1.5 or maybe 2°C.” - P1

“There is an increasing sense that the Paris Agreement is too ambitious. For the voluntary carbon market to follow Paris’ framework, there needs to be a corresponding adjustment for the voluntary market. I heard Verra and Gold Standard are developing corresponding adjustment standards. It is a bit ridiculous in my opinion.” - P2

“I think policy is a big player (in driving the market). It made a big difference when Article 6 was confirmed in Glasgow last year. There is also the European Union sustainable finance directive regulation which is holding banks accountable for reporting.” - P8

“Under the Paris Agreement and the latest agreement in Glasgow, the role of climate financing is more and more important, so we need to channel capital in different ways. We cannot just rely on governments. We need to also have the private sector stepping up.” - P9

“I think it will take some time before we really have some rules in place here that gives us the guidelines to follow on a global level, and especially with regards to the Paris Agreement, where we still have a couple of years to go before we know how we can handle corresponding adjustments and these types of things.” - P11

<u>Social Emergence Level</u>		<u>Themes</u>
Micro-level	Individual level	● Personal purpose and climate anxiety ● Determination to change the status quo
	Interaction level	● Conversations and collaborations
Meso-level	Ephemeral emergence	● Shifting preferences over project types ● New market logic away from offsetting ● Transparent communication
	Stable emergence	● Corporate branding ● External sources of legitimacy
Macro-level	Social structure	● Paris Agreement market mechanisms

Table 3: Summary of identified themes from the empirical findings

5. Analysis

5.1 The Institutional Reshaping of VCM

The first chapter of this thesis presents the empirical context of the reshaping of VCM under the Paris Agreement regime, the second chapter presents findings from the literature review, while the fourth chapter presents the empirical findings of this thesis as obtained from interviews with market actors and researchers. Phenomena within the market are presented and categorized into micro-, meso-, and macro-levels of emergence based on Sawyer's (2005) social emergence framework and inspired by the empirical study conducted by Baker and Nenonen (2020). Presenting the findings using such a framework has allowed the researchers to capture and break down the underlying themes and sense-making processes of VCM market actors in varying magnitudes, thus answering the first research question of this thesis.

In this chapter, the researchers aim to map out the function, features, and eventually the market work undertaken within these multi-level emergences to understand the market-reshaping processes that are taking place within VCM. The mapping is aided by the institutional work perspective as laid out by Lawrence and Suddaby (2006) and Chaney et al. (2019), the market work perspective suggested by Nenonen et al. (2019), as well as the researchers' inductive reasoning from the empirical findings. Here, the analyses are structured according to the three states of institutional work (Chaney et al., 2019): in the emerging state, market actors are in the process of creating institutions and thus institutions are still being structured; in the mature state, firms "work to maintain a situation that favors their interests" (p.243); and in the disruptive state, new entrants come in and seek to change the institution, thus, creating conflicts. Ultimately, the analysis in this chapter answers the second research question of this thesis.

As discussed in the first chapter, as well as repeatedly mentioned by the interviewees, the 2015 Paris Agreement came as a critical turning point for VCM. At the time of the writing of this thesis, it can be argued that VCM under the Paris Agreement regime is undergoing the emerging stage, as market actors are actively envisioning new market solutions for climate change, developing innovative unique selling propositions (USPs), testing the feasibility of their solutions, and actively expanding their networks of influence. This conclusion aligns with those suggested by Blum & Lövbrand (2019), Lang et al. (2019), and Kreibich & Hermwille (2021) in their studies about the carbon markets. In other words, the institutions of the market under the new regime are still being recreated and restructured, with multiple market logics competing and coalescing to shape the new dominant market logic. Therefore, in using the institutional work framework, this chapter is presented in the order of mature, disruptive, and emerging states. It should be noted that market works often overlap with one

another and do not necessarily fall into neat stages. However, the researchers believe that grouping the market works into these three states of institutional work helps identify how market actors are shaping, or reshaping, the market.

5.1.1 Mature State

The pre-Paris Agreement form of VCM was arguably in a mature state, where incumbent market players offered carbon credits produced in developing countries to corporate clients in developed countries so the latter can offset their carbon emissions, mimicking the international carbon trade mechanism under the Kyoto Protocol regime. As implied by many interviewees, both avoidance-based and removal-based carbon offsetting projects were the mainstream offerings during this mature state, which has now been challenged by the Paris Agreement regime. Furthermore, third-party standard-setting and verification institutions served as the main sources of authority within the voluntary market, as they mimicked the guardrails of the regulated carbon market. This continues to be the stable emergent of the current market regime, but as observed in the interview findings, some actors are starting to question it and develop their own standards. In this mature state, market norms in VCM were well established, there were clear ways to legitimize carbon offsetting practices, and new market entrants were therefore coerced to conform to the mature market logic.

a. Establishing norms

Under the Kyoto Protocol regime, carbon offsetting was an explicit and straightforward strategy for most actors to grasp: companies from developed countries such as Sweden could fund carbon avoidance or removal projects in developing countries in exchange for affordable credits to meet their climate obligations. This, as a result, has set the norm on how carbon credit trading has typically been done, including in VCM. Carbon credit, as a commodity, was a pathway for corporations to claim climate credibility following the logic set up in the Kyoto Protocol, which could be used to fulfill regulatory obligations and/or as a form of corporate branding. However, as the Kyoto Protocol did not set any concrete targets concerning the biophysical nature of climate change (such as limiting global warming to 1.5°C in the Paris Agreement), climate change mitigation projects that avoided GHG from being emitted to the atmosphere or captured GHG from the atmosphere were equally accepted as methods of offsetting GHG emissions. These were the well-established norms set up within the VCM pre-Paris Agreement. Notably, as discussed in the literature review and empirical findings, these dominant market norms have been a target of a lot of criticism. Yet, as the market largely mimicked the Kyoto Protocol market mechanism as the macro-level social structure, it would be challenging for individual market actors to offer alternative norms.

b. Legitimizing practices

To ensure that particular carbon offsetting projects were legitimate sources of carbon credits, standard-setting organizations such as the Gold Standard, Verra, and Plan Vivo were established. They followed the carbon market logic of the Kyoto Protocol and further developed the guardrails of VCM, such as additionality, no overestimation, permanence, exclusive claim, and co-benefit. Hence, certification of approval from these standard-setting organizations became a shorthand for the legitimacy of carbon credits. It was apparent, particularly with incumbent market actors who were interviewed, that these standard-setting bodies have continued to become the sources of legitimacy for voluntary carbon credits, or a stable emergent, in the market.

c. Coercing new market entrants

As observed from the profiles of the companies studied in this thesis, it is apparent that companies established prior to the 2015 Paris Agreement—or, the incumbents—have relatively similar business models. For intermediaries, these companies typically take the form of corporate sustainability consultancy services (although not all consultancies were established before 2015). Similarly, for project developers, many of the incumbents offered carbon credits from both or either carbon avoidance and removal projects that are certified by standard-setting organizations. These incumbents depict the remnants of the market norms and legitimizing practices which were established under the Kyoto Protocol regime. For them to be legitimate, new market entrants needed to adopt such norms and practices, limiting the ability of new business models to thrive.

5.1.2 Disruptive State

The 2015 Paris Agreement disrupted the mainstream logic of carbon markets by positing an unprecedented pressure and urgency for decarbonization. With the agreement, the climate change crisis was discursively situated at the intersection of society, economy, and science, thus introducing both socioeconomic value and biophysical targets of climate change. Within VCM, this change has raised a primary concern that companies could purchase offsets to meet their emission targets but doing such a thing does little to solve the increasing level of GHG emissions or meet the biophysical target of limiting global warming to 1.5°C. This has rendered pre-existing solutions inadequate and outdated. Meanwhile, as Article 6's corresponding adjustment has been established, the predominant joint implementation market logic under CDM, which granted the opportunity for developed countries to purchase affordable credit in developing countries, has also been challenged.

While concerns about the biophysical impact of VCM practices are being raised, at the same time the Paris Agreement era has seen carbon offsetting being positioned as the solution for companies to

reach their net-zero emission targets. As seen in the hike of VCM market size since 2018, more and more companies are demanding and supplying voluntary carbon credits, particularly to meet corporate pledges for net-zero emission. However, as many of the interviewed market actors and experts pointed out, the market is signaling a preference for carbon projects that absorb carbon dioxide from the atmosphere because it aligns with the logic set up by the Paris Agreement's net-zero goal. This preference has therefore challenged the legitimacy of VCM institutions established under the Kyoto Protocol era, which treated avoidance-based and removal-based carbon project types equally.

With a significant change in the social structure underlying the carbon markets, market actors have therefore been given room to question the previously well-established market norms and the legitimacy of incumbent practices. These phenomena were incited by the disruption in the macro-level emergent, but it manifested in individual-level motivations to offer better market solutions that are better than the status quo.

a. Challenging the status quo and envisioning solutions

The global mainstreaming of the net-zero target in sociocultural discourse, particularly in Sweden where environmental sustainability is a prominent cultural virtue, has led more people to start internalizing the urgent existential threat of climate change. As shown by the empirical findings from the interviews, this climate anxiety and the personal drive to save the world from the impacts of climate change have led many individuals to enter the market to solve problems with the VCM status quo as they perceive it. Even for actors that may not have an authentic personal drive towards saving the world from climate disasters, the rise of market activities is incentivizing them to enter and participate in the market, introducing new solutions that can be perceived to be solving problems that incumbents could not.

b. Building coalition

In order to build up their solutions, these businesses and entrepreneurs are empirically observed to converse with like-minded people to develop their businesses and connect with third-party market stakeholders to support and validate their solutions. These stakeholders include subject matter experts, technology providers, and even incumbent VCM standard-setting organizations. Further, by attending international events on global climate change mitigation efforts, such as UNFCCC events, market actors are sharing their beliefs and solutions, getting exposed to new ideas, and expanding their network of influence. Collectively, during this disruptive state, market actors are claiming their own authority in formulating, adjusting, and updating the shared processes within VCM under the Paris Agreement framework. As the disruptive state proceeded to expand in both volumes of actors involved and capital invested, certain beliefs gained traction and some others were marginalized.

Notably, while categorized under the disruptive state, this interaction-level emergent also overlaps with market work conducted in the emerging state.

5.1.3 Emerging State

In the emerging state, multiple streams of competing market logic have risen to the surface, and two were particularly identified throughout this study. The first one is the continuation of carbon offsetting practices, but with the selection of carbon projects that are aligned with the Paris Agreement imperative of removing carbon from the atmosphere, and with new and updated guardrails that address ongoing mainstream grievances about VCM practices. This could include new standards and updates of existing standards, as seen in the adoption of a corresponding adjustment mechanism for the voluntary market, for example. The second stream of market logic development has been the shift of focus away from offsetting to carbon financing as a form of climate action. According to the vision of some emerging market actors, VCM should still function as a toolbox for carbon financing. However, carbon financing should not be purposed as a vehicle for corporations to buy their way out of their current emission target. Instead, the market development should be focused on how to create a long-term positive impact and contribute toward the global net-zero target. It remains unclear to the researchers how or whether this stream will continue to develop and replace existing market offsetting logic. However, it can be observed that both streams of market logic are being championed by different market actors and are gaining steam with trend-setting end buyers (i.e. large, powerful companies) validating either stream.

These two streams of market logic have gained market support in varying degrees. The former one has been a legacy discussion that has been exposed to the majority of players. Most of the market actors are more or less involved with the legitimacy discussion, as well as addressing these issues in their core offerings. However, the latter stream has continued to renew momentum as interests and investments continue to scale. It can therefore be argued that various VCM market actors are currently establishing their USPs, testing feasibility, and strategically communicating their solutions to enroll more customers and eventually advocate for new market norms. Overall, market actors have started to realize that resolving micro-level and project-level issues simply will not save the planet; if the competition among most VCM actors is solely on how to develop and sell the best project there is, it would slow down tremendously the progress and impact of climate work on a macro-level while simultaneously perpetuating the problems posed by a rapidly warming planet.

a. Establishing USPs and testing feasibility

With the Kyoto Protocol era status quo no longer serving as the dominant market logic, new entrants are seen to be offering innovative solutions for companies to contribute towards the global net-zero

target. For intermediaries, these solutions range from the digitalization and automation of traditional carbon offsetting practices to the introduction of alternatives to carbon offsetting. For project developers, these imply developing carbon removal projects, either through nature-based or mechanical solutions, or positioning their projects as climate investment opportunities rather than merely to offset. The researchers observed that start-up companies established after 2015 (albeit not all) tend to be more experimental in their approach to developing their business models and USPs. Meanwhile, incumbent players vary in their agility and efforts to adopt new, innovative solutions to respond to new market preferences.

At this phase of the market reshaping process, VCM arguably serves as a sandbox for innovation as well as a mechanism to bridge and promote a more adaptive and accessible understanding of the GHG-conscious economy of the future. Players are selectively enrolling new capabilities, collaborating, competing, and challenging each other with various USPs. These processes are iterative, with the demand side of the market responding to the different USPs and testing the feasibility and success of these approaches before a new market norm can be established.

b. Advocating for new market norms

As emerging visions of the new shape of VCM are being developed and tested, market actors have also begun to seek support and establish peer groups with those sharing the same market logic. Companies committed to investigating the legitimacy and integrity of carbon projects collaborate or directly compete with each other with varying carbon portfolios. They participate in climate panel discussions, and conferences, also in client communications, educating and advocating why and how a certain project type is more legitimate than another. Meanwhile, companies taking a rather value-based approach, where climate mitigation and adaptation projects are solely seen and funded as doing climate good other than hitting one's carbon target alone have also been actively voicing their concern and promoting their market logic.

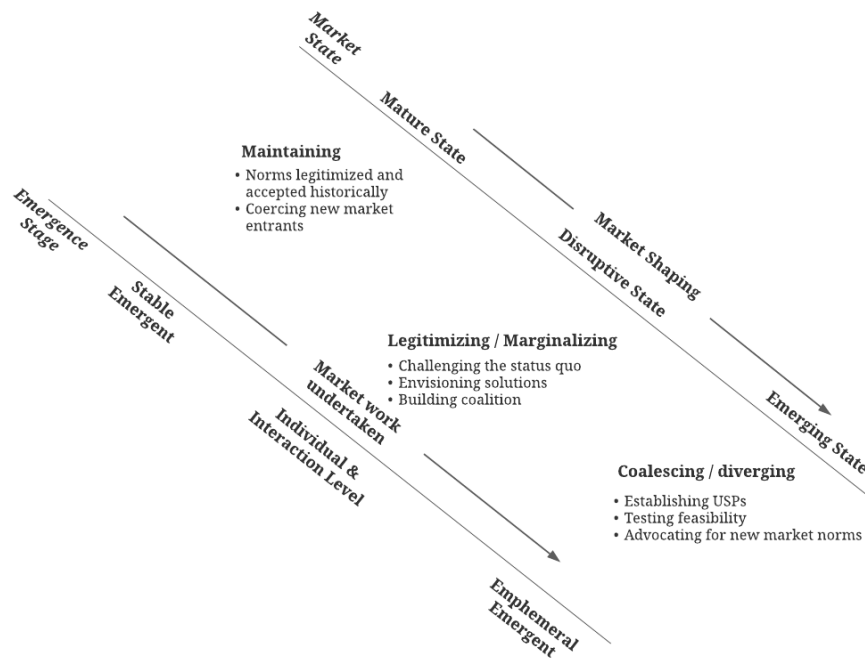


Figure 6: Market reshaping framework

5.2 Conclusion

In this section, the research findings of this thesis are summarized and concluded to answer the two research questions.

1. *How do market actors within VCM make sense of the changes in the market brought forth by the Paris Agreement?*

The perspective of the social emergence paradigm facilitated the researchers to understand how market actors within VCM make sense of the changes in the market brought forth by the Paris Agreement and translated that into micro-, meso-, and macro-level social emergences. From a micro level, these market players as individuals expressed their motivations and purposes to solve the climate change crisis from a career perspective, as well as shared climate anxiety which led to the determination to change the status quo. These personal endeavors have also been communicated among individuals, which led to further collaborations in the market. The Paris Agreement has served as an opportunity for many actors to enable and embolden the micro-level emergents to take action and work together.

Looking at the meso-level, ephemeral and stable emergents were brought forth by the disrupting impact that the Paris Agreement had on the international carbon market logic. The researchers have observed a series of ephemeral emergent themes, such as shifting preference over carbon project types, shifting market logic away from carbon offsetting, and communicating transparently to consumers about the uncertainties around carbon project impact. The stable emergent themes identified were the importance of corporate branding as the driver of demand for voluntary carbon credits and the importance of standard-setting organizations as an external source of legitimacy. Eventually, from a macro-level standpoint, the Paris Agreement has set the building blocks of the ultimate global climate objective, which was adopted by the market actors and translated into their business development. The disruptive effect of the Paris Agreement has manifested in the dominant market logic in VCM which impacted every actor's action, from standard-setters and project developers to brokers and buyers.

2. Under the context of these changes, how are the actions of market actors within VCM reshaping the market?

Drawing on the institutional work framework, the researchers have examined different types of purposeful market work that VCM market actors have done under the different states of the market reshaping process. Here, the researchers have found that VCM market work travels through three consecutive states: mature, disruptive, and emerging states, and is expected to happen in a circular manner. In the time frame that this thesis examined, VCM started from a mature state where it was mimicking the international carbon trade mechanism under the Kyoto Protocol regime. Moving forward, the Paris Agreement has come in as a disruption that nudged the market actors' transition from a relatively mature state to a disruptive state: norms and mainstream solutions that were set in the past have been negotiated, contested, and contradicted, while new rules and processes are being developed.

Over time, VCM has continued evolving into an emerging state, where actors are actively envisioning solutions, establishing USPs, testing feasibility, and advocating for new market norms. However, it is also noted that while the Paris Agreement opened the discussion to set up a new market logic for climate work, the stream of legacy market beliefs will not simply retire. Conflicting beliefs are expected to be further negotiated, compromised, accepted, or marginalized to reach another mature state. All in all, the urgency that the Paris Agreement elicited has reminded everyone that in facing the rapidly warming planet, VCM as an enabling vehicle is one of the best chances we have right now.

6. Discussion

6.1 Theoretical Contributions

This thesis has studied the market reshaping processes that are taking place within Sweden's VCM amidst changes brought forth by the Paris Agreement. First, this thesis has contributed to an aggregate understanding of the supply-side businesses within VCM. Through semi-structured interviews using a purposive sampling approach, the researchers were able to obtain a first-hand and nuanced understanding of the actors' perceptions of the market realities within VCM and their individual or company's roles within the market. Their sense-making process, market perception, and consequently how their business activities contribute toward strengthening, expanding, or changing the market institutions within VCM were investigated, interpreted, and aggregated, extending the well-needed empirical knowledge from the VCM market insiders' perspective.

Second, aiming to fill in the research vacuum of the pathways that VCM actors are undertaking in this market shaping process, this thesis has combined two otherwise divided streams of research: institutional work lens and social emergence lens in studying the VCM. This combined lens, which was first suggested by Baker and Nenonen (2020), has enabled the researchers to understand VCM actors both as individual agents and collectives, unfolding the impact of different levels of actions on market-level outcomes. The interplay of institutional work done by VCM market actors and their various pathways toward reshaping the market were examined and concluded in a framework extending its methodological application. Particularly, this thesis expanded Baker and Nenonen's (2020) framework by combining it with Chaney et al.'s (2019) understanding of the three states of institutional work. Doing so has enabled the researchers to map out the market works undertaken in the three different market states.

6.2 Practical Contributions

From a practical point of view, this thesis contributes insights into the competitive landscape and market developments of VCM in Sweden, particularly from the perspective of voluntary carbon project developers and intermediaries. As the 2015 Paris Agreement challenged the dominant market logic of carbon offsetting set up by the Kyoto Protocol, VCM is currently at a crossroads between 1) aligning voluntary carbon offsetting practices to fit the Paris Agreement framework, e.g. by focusing on carbon removal projects instead of carbon avoidance projects, and developing VCM's corresponding adjustment tool, and 2) shifting away from carbon offsetting toward collective climate action to reach the global goal set out by the Paris Agreement. While the first stream focuses on improving legacy market mechanisms within VCM and addressing common criticisms of carbon

offsetting, the second stream focuses on developing an economic system to reward corporate contributions toward long-term decarbonization of the planet, not just one particular company. At the moment, various market actors on both streams are establishing their USPs, testing the feasibility of their solutions, and advocating for their solutions to become the new market norms. Until the market reaches another mature state, market actors still have the opportunity to propose and champion their market interpretations of the Paris Agreement's net-zero target to become the new market norm.

6.3 Limitation of the Study

The main aim of this thesis is to contribute to identifying the market-shaping processes in VCM. The researchers acknowledge, however, that limitations remain. The present study has been built on Baker and Nenonen's (2020) combination of institution work with social emergence lens and Chaney et al. (2019) three market states. However, other lenses and moral aspects could be used to understand the pathways of shaping the VCM as well. Especially, during the data collection process, the researchers have noticed the tight-knit relationships among VCM actors which were enabled by multiple levels of interactions and networking, therefore the *market as networks* theoretical perspective by Granovetter (1985), for instance, could also be a valuable entry point to understand how embeddedness in the current VCM is impacting the market structure and development.

In addition to the theoretical framework, generalizability could also be challenged when the primary data has been gathered from a limited number of VCM actors in a specific geographical context. The scope of research in this thesis is limited to the Swedish market and companies that are active in the upstream side of VCM. Therefore, cultural or contextual specificities will limit the transferability of the theoretical framework developed. Furthermore, the time constraints of this thesis project have also limited the number of samples in this research, therefore the findings will not represent an absolute aggregate picture of the VCM actors. Lastly, it is also important to acknowledge that these interviewed individuals were mostly in senior positions in their companies, which naturally have undertaken a responsibility to maintain the positive branding image, as well as be in line with the overall company strategic direction. However, given the diverse carbon offerings and different backgrounds of these individuals, the interviews did capture a rather holistic view of the current dynamics in the VCM.

6.4 Future Research

The researchers hope this thesis will spark further interest in understanding the market-shaping activities in the complex market of VCM, as well as further investigating multiple pathways leading to the progressive development of the market by applying other valuable theoretical frameworks. To

further develop the framework identified in this thesis, it would be beneficial to apply and test out the framework in other geographical contexts with even larger sample sizes. It would also be interesting to test the findings with a quantitative method to enhance the robustness of the research with statistical support. Lastly, this thesis has not taken into account the role of potential government support in the analysis, which will be extremely valuable and relevant to investigating on which level of market work the government should intervene to deliver a high impact and accelerate the VCM maturity development.

References

- Asiyanbi, A., & Lund, J. F. (2020). Policy persistence: REDD+ between stabilization and contestation. *Journal of political ecology*, 27(1), 378-400.
<https://doi.org/10.2458/v27i1.23493>
- Bäckstrand, K., & Lövbrand, E. (2006). Planting trees to mitigate climate change: Contested discourses of ecological modernization, green governmentality and civic environmentalism. *Global environmental politics*, 6(1), 50-75.<https://doi.org/10.1162/glep.2006.6.1.50>
- Baker, J. J., & Nenonen, S. (2020). Collaborating to shape markets: Emergent collective market work. *Industrial marketing management*, 85, 240-253.
<https://doi.org/10.1016/j.indmarman.2019.11.011>
- Bellassen, V., & Leguet, B. (2007). *The emergence of voluntary carbon offsetting* (Doctoral dissertation, auto-saisine). <https://hal.archives-ouvertes.fr/hal-01190163>
- Belk, R. W., Wallendorf, M., & Sherry Jr, J. F. (1989). The sacred and the profane in consumer behavior: Theodicy on the odyssey. *Journal of consumer research*, 16(1), 1-38.
<https://doi.org/10.1086/209191>
- Bell, E., Bryman, A., & Harley, B. (2019). *Business Research Methods* (5th ed.). Oxford University Press.
- Blaufelder, C., Levy, C., Mannion, P., & Pinner, D. (2021). *A blueprint for scaling voluntary carbon markets to meet the climate challenge*. McKinsey & Company. Retrieved April 2, 2022, from <https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge>
- Blum, M., & Lövbrand, E. (2019). The return of carbon offsetting? The discursive legitimization of new market arrangements in the Paris climate regime. *Earth system governance*, 2, 100028.<https://doi.org/10.1016/j.esg.2019.100028>
- Blum, M. (2020). The legitimization of contested carbon markets after Paris—empirical insights from market stakeholders. *Journal of environmental policy & planning*, 22(2), 226-238.<https://doi.org/10.1080/1523908X.2019.1697658>

- Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., & Cage, P. (2019). *Securing Climate Benefit: A Guide to Using Carbon Offsets*. Stockholm Environment Institute.
<https://www.sei.org/publications/guide-to-using-carbon-offsets/>
- Broekhoff, D. (2021) *For corporate net-zero targets, focus on the big picture*. Stockholm Environment Institute. Retrieved March 20, 2022, from
<https://www.sei.org/perspectives/corporate-net-zero-targets/>
- Bumpus, A. G., & Liverman, D. M. (2008). Accumulation by decarbonization and the governance of carbon offsets. *Economic geography*, 84(2), 127-155.
<https://doi.org/10.1111/j.1944-8287.2008.tb00401.x>
- Callon, M. (1998). *The laws of the markets*. Sociological review monograph.
- Callon, M. (2009). Civilizing markets: Carbon trading between in vitro and in vivo experiments. *Accounting, organizations and society*, 34(3-4), 535-548.
<https://doi.org/10.1016/j.aos.2008.04.003>
- Carton, W. (2019). “Fixing” climate change by mortgaging the future: negative emissions, spatiotemporal fixes, and the political economy of delay. *Antipode*, 51(3), 750-769.
<https://doi.org/10.1111/anti.12532>
- Carton, W., Asiyambi, A., Beck, S., Buck, H. J., & Lund, J. F. (2020). Negative emissions and the long history of carbon removal. *Wiley interdisciplinary reviews: Climate change*, 11(6), e671.
<https://doi.org/10.1002/wcc.671>
- Cavanagh, C., & Benjaminsen, T. A. (2014). Virtual nature, violent accumulation: The ‘spectacular failure’ of carbon offsetting at a Ugandan National Park. *Geoforum*, 56, 55-65.
<https://doi.org/10.1016/j.geoforum.2014.06.013>
- Chaney, D., Carrillat, F. A., & Zouari, A. (2019). Uncovering institutional orientation as a new strategic orientation in industrial marketing. *Industrial marketing management*, 80, 242-250.
<https://doi.org/10.1016/j.indmarman.2018.07.011>
- Corbera, E., Estrada, M., & Brown, K. (2009). How do regulated and voluntary carbon-offset schemes compare?. *Journal of integrative environmental sciences*, 6(1), 25-50.
<https://doi.org/10.1080/15693430802703958>

- Crecente, F., Sarabia, M., & del Val, M. T. (2021). Climate change policy and entrepreneurial opportunities. *Technological forecasting and social change*, 163, 120446. <https://doi.org/10.1016/j.techfore.2020.120446>
- Davies, N. (2021). *The inconvenient truth about the carbon offset industry*. The Guardian. Retrieved April 4, 2022, from <https://www.theguardian.com/environment/2007/jun/16/climatechange.climatechange>
- Deakin, H., & Wakefield, K. (2014). Skype interviewing: Reflections of two PhD researchers. *Qualitative research*, 14(5), 603-616. <https://doi.org/10.1177%2F1468794113488126>
- Diener, E., & Crandall, R. (1978). *Ethics in social and behavioral research*. U Chicago Press.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 48(2), 147-160. <https://doi.org/10.2307/2095101>
- Donofrio, S., Maguire, O., Myers, K., Daley, C., & Lin, K. (2021). *Markets in Motion: State of the Voluntary Carbon Markets 2021 Installment 1*. Ecosystem Marketplace. <https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-markets-2021/>
- Ecosystem Marketplace. (2022). *Voluntary Carbon Markets Top \$1 Billion in 2021 with Newly Reported Trades, a Special COP26 Bulletin*. Retrieved March 15, 2022, from <https://www.ecosystemmarketplace.com/articles/voluntary-carbon-markets-top-1-billion-in-2021-with-newly-reported-trades-special-ecosystem-marketplace-cop26-bulletin/>
- EPI. (2020). *Country Profile Sweden*. Environmental Performance Index. Retrieved April 15, 2022, from <https://epi.yale.edu/epi-country-report/SWE>
- Favasuli, S., & Sebastian, V. (2021). *Voluntary carbon markets: how they work, how they're priced and who's involved*. S&P Global. Retrieved March 17, 2022, from <https://www.spglobal.com/commodity-insights/en/market-insights/blogs/energy-transition/061021-voluntary-carbon-markets-pricing-participants-trading-corsia-credits>
- Fligstein, N. (1996). Markets as politics: A political-cultural approach to market institutions. *American sociological review*, 61(4), 656-673. <https://doi.org/10.2307/2096398>

- Gach, E. (2019). Normative shifts in the global conception of climate change: The growth of climate justice. *Social sciences*, 8(1), 24. <https://doi.org/10.3390/socsci8010024>
- Gillenwater, M., Broekhoff, D., Trexler, M., Hyman, J., & Fowler, R. (2007). Policing the voluntary carbon market. *Nature climate change*, 1(711), 85-87. <https://doi.org/10.1038/climate.2007.58>
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational research methods*, 16(1), 15-31. <https://doi.org/10.1177%2F1094428112452151>
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American journal of sociology*, 91(3), 481-510. <https://doi.org/10.1086/228311>
- Humphreys, A. (2010). Megamarketing: The creation of markets as a social process. *Journal of marketing*, 74(2), 1–19. <https://doi.org/10.1509/jmkg.74.2.1>
- Humphreys, A., & Carpenter, G. S. (2018). Status games: Market driving through social influence in the US wine industry. *Journal of marketing*, 82(5), 141–159. <https://doi.org/10.1509%2Fjm.16.0179>
- IPCC. (2018). *Global Warming of 1.5°C*. IPCC Retrieved March 10, 2022, from <https://www.ipcc.ch/sr15/>
- Jacobs, R. (2013). *The Forest Mafia: How Scammers Steal Millions Through Carbon Markets*. The Atlantic. Retrieved April 4, 2022, from <https://www.theatlantic.com/international/archive/2013/10/the-forest-mafia-how-scammers-steal-millions-through-carbon-markets/280419/>
- Johnson, P., Buehring, A., Cassell, C., & Symon, G. (2006). Evaluating qualitative management research: Towards a contingent criteriology. *International journal of management reviews*, 8(3), 131-156. <https://doi.org/10.1111/j.1468-2370.2006.00124.x>
- Joppa, L., Luers, A., Willmott, E., Friedmann, S. J., Hamburg, S. P., & Broze, R. (2021). *Microsoft's million-tonne CO2-removal purchase — lessons for net-zero*. Nature. Retrieved February 24, 2022, from https://www.nature.com/articles/d41586-021-02606-3?error=cookies_not_supported&code=08bd4b4d-bbf5-491a-be52-593c8c382863

- Kaartemo, V., Nenonen, S., & Windahl, C. (2020). Institutional work by market-shaping public actors. *Journal of Service Theory and Practice* 30(4-5), 401-435.
<https://doi.org/10.1108/JSTP-08-2019-0176>
- Kjellberg, H., & Olson, D. (2017). Joint markets: How adjacent markets influence the formation of regulated markets. *Marketing theory*, 17(1), 95-123.
<https://doi.org/10.1177%2F1470593116658203>
- Knox-Hayes, J. (2010). Creating the carbon market institution: analysis of the organizations and relationships that build the market. *Competition & change*, 14(3-4), 176-202.
<https://doi.org/10.1179%2F102452910X12587274068277>
- Kosoy, N., & Corbera, E. (2010). Payments for ecosystem services as commodity fetishism. *Ecological economics*, 69(6), 1228-1236. <https://doi.org/10.1016/j.ecolecon.2009.11.002>
- Kreibich, N., & Hermwille, L. (2021). Caught in between: credibility and feasibility of the voluntary carbon market post-2020. *Climate policy*, 21(7), 939-957.
<https://doi.org/10.1080/14693062.2021.1948384>
- Kuyper, J. W., Linnér, B. O., & Schroeder, H. (2018). Non-state actors in hybrid global climate governance: justice, legitimacy, and effectiveness in a post-Paris era. *Wiley interdisciplinary reviews: Climate change*, 9(1), e497. <https://doi.org/10.1002/wcc.497>
- Lang, S., Blum, M., & Leipold, S. (2019). What future for the voluntary carbon offset market after Paris? An explorative study based on the discursive agency approach. *Climate policy*, 19(4), 414-426. <https://doi.org/10.1080/14693062.2018.1556152>
- Lawrence, T. B., & Suddaby, R. (2006). Institutions and institutional work. In *The Sage handbook of organization studies*, (pp. 215-254). Sage.
- Lawrence, T. B., Leca, B., & Zilber, T. B. (2013). Institutional work: Current research, new directions and overlooked issues. *Organization studies*, 34(8), 1023-1033.
<https://doi.org/10.1177%2F0170840613495305>
- Leach, M., & Scoones, I. (2015). *Carbon conflicts and forest landscapes in Africa*. Routledge.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

- Lohmann, L. (2005). Marketing and making carbon dumps: commodification, calculation and counterfactuals in climate change mitigation. *Science as culture*, 14(3), 203-235.
<https://doi.org/10.1080/09505430500216783>
- MacKenzie, D. (2008). Constructing Emissions Markets. In *Material Markets: How Economic Agents are Constructed*(pp. 137–176). Oxford University Press.
- Nässén, N., & Rambaree, K. (2021). Greta Thunberg and the Generation of Moral Authority: A Systematic Literature Review on the Characteristics of Thunberg’s Leadership. *Sustainability*, 13(20), 11326.<https://doi.org/10.3390/su132011326>
- Nehls, K., Smith, B. D., & Schneider, H. A. (2015). Video-conferencing interviews in qualitative research. In *Enhancing qualitative and mixed methods research with technology* (pp. 140-157). IGI Global.
- Nenonen, S., Kjellberg, H., Pels, J., Cheung, L., Lindeman, S., Mele, C., ... & Storbacka, K. (2014). A new perspective on market dynamics: Market plasticity and the stability–fluidity dialectics. *Marketing theory*, 14(3), 269-289.<https://doi.org/10.1177%2F1470593114534342>
- Nenonen, S., Storbacka, K., & Frethey-Bentham, C. (2019). Is your industrial marketing work working? Developing a composite index of market change. *Industrial marketing management*, 80, 251-265.<https://doi.org/10.1016/j.indmarman.2018.06.006>
- Nicholls, M. (2022). *Carbon markets get amber light from COP26*. Energy Monitor. Retrieved March 25, 2022, from
<https://www.energymonitor.ai/policy/carbon-markets/carbon-markets-get-amber-light-from-cop26>
- Obergassel, W., Peterson, L., Mersmann, F., Schade, J., Hofbauer, J. A., & Mayrhofer, M. (2017). Human rights and the clean development mechanism: lessons learned from three case studies. *Journal of human rights and the environment*, 8(1), 51-71.
<https://doi.org/10.4337/jhre.2017.01.03>
- Park, S. R., & Jang, J. Y. (2021). The impact of ESG management on investment decision: Institutional investors’ perceptions of country-specific ESG criteria. *International journal of financial studies*, 9(3), 48.<https://doi.org/10.3390/ijfs9030048>

- Paterson, M. (2010). Legitimation and accumulation in climate change governance. *New political economy*, 15(3), 345-368. <https://doi.org/10.1080/13563460903288247>
- Refinitiv. (2021). *Carbon Market Year in Review 2020*.
Refinitivhttps://www.refinitiv.com/content/dam/marketing/en_us/documents/gated/reports/carbon-market-year-in-review-2020.pdf
- Romani, L., Barmeyer, C., Primecz, H., & Pilhofer, K. (2018). Cross-cultural management studies: state of the field in the four research paradigms. *International studies of management & organization*, 48(3), 247-263. <https://doi.org/10.1080/00208825.2018.1480918>
- Sawyer, R. K. (2005). *Social emergence: Societies as complex systems*. Cambridge University Press.
- Schneiberg, M., & Soule, S. A. (2005). Institutionalization as a contested, multilevel process. In *Social movements and organization theory* (pp. 122-160). Cambridge University Press
- Scott, W. R. (1995). *Institutions and organizations* (Vol. 2). Sage.
- Streck, C. (2021). *Shades of REDD+: Corresponding adjustments for voluntary markets – Seriously?*. Ecosystem Marketplace. Retrieved April 10, 2022, from <https://www.ecosystemmarketplace.com/articles/shades-of-redd-corresponding-adjustments-for-voluntary-markets-seriously/>
- Swedish Institute. (2021). *Sweden and sustainability*. sweden.se. Retrieved April 11, 2022, from <https://sweden.se/climate/sustainability/sweden-and-sustainability>
- Taillard, M., Peters, L. D., Pels, J., & Mele, C. (2016). The role of shared intentions in the emergence of service ecosystems. *Journal of business research*, 69(8), 2972-2980. <https://doi.org/10.1016/j.jbusres.2016.02.030>
- UN. (2022). *Paris Agreement*. United Nations Treaty Collection. Retrieved March 10, 2022, from https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en
- UNFCCC. (2015). *Paris Agreement*. United Nations. Retrieved March 10, 2022, from <https://unfccc.int/process/conferences/pastconferences/paris-climate-change-conference-november-2015/paris-agreement>

- UNFCCC. (2021). *Outcomes of the Glasgow Climate Change Conference - Advance Unedited Versions (AUVs) and list of submissions from the sessions in Glasgow*. United Nations Climate Change. Retrieved March 15, 2022, from <https://unfccc.int/process-and-meetings/conferences/glasgow-climate-change-conference-october-november-2021/outcomes-of-the-glasgow-climate-change-conference>
- Vargo, S. L., Wieland, H., & Akaka, M. A. (2015). Innovation through institutionalization: A service ecosystems perspective. *Industrial marketing management*, 44, 63-72.
<https://doi.org/10.1016/j.indmarman.2014.10.008>
- Widerberg, O., & Pattberg, P. (2017). Accountability challenges in the transnational regime complex for climate change. *Review of policy research*, 34(1), 68-87.
<https://doi.org/10.1111/ropr.12217>
- Ye, Q., Zhou, R., Anwar, M. A., Siddiquei, A. N., & Asmi, F. (2020). Entrepreneurs and environmental sustainability in the digital era: Regional and institutional perspectives. *International journal of environmental research and public health*, 17(4), 1355.
<https://doi.org/10.3390/ijerph17041355>

Appendices

Appendix 1: Interview Guide for Market Actors

1. What led you from your previous position to this company?
2. What does the VCM competitive landscape look like?
3. How did you/your company come up with your current business model?
 - What problem are you solving with your business?
 - To what extent do you think this solves the climate problem?
 - How has the company's business model changed or developed in the few years since it was established?
 - How has the company's carbon portfolio has developed since it was founded?
4. What do you think the voluntary carbon market will look like in 5-10 years?
 - Do you have any future product development plans?
5. Where do you get your climate knowledge from?
 - Do you or your company participate in discussions about climate change? Which ones?

Appendix 2: Interview Guide for Experts

1. How would you describe the impact of the Paris Agreement and IPCC report on the voluntary carbon market?
2. How do you understand the dynamic within the carbon offsetting market?
 - Carbon avoidance vs. carbon removal?
 - Nature based solutions vs. technical/mechanical solutions?
3. There has been a heat wave of entrepreneurs and businesses now in the Swedish market trying to explore the opportunities within VCM, how do you understand it, and where do you think this will lead to?
4. How has the market trend been influencing/directing your research, and do you see an impact from the business preference on the research emphasis?
5. During your research journey under this topic, where does your main frustration come from? Where do you identify a gap between academic and business practices?

Appendix 3: Interview Invitation Email Template

Dear [Name],

We hope this email finds you well. My name is [name], a final year master's student at Stockholm School of Economics. My partner [name] and I are writing a thesis about the voluntary carbon market.

We both find the market trend around carbon offsetting very interesting. Yet, in our study, we have identified a gap between the rapid development and innovation of the carbon management/offsetting market and academic literature. So for our thesis, we hope to analyze the shaping of the carbon offsetting market.

Given that your company offers carbon offsetting services [or offers carbon consultancy, with an emphasis on carbon removal and funding offsetting projects], we are wondering if you would be available for a chat on this topic sometime this week? We can adjust to your schedule, and if you are not available, we would also be happy to speak to one of your colleagues. The insights will only be used for the thesis and will be anonymized.

We hope to hear back from you soon, and please let us know if you have any questions.

Best regards,

[Names]