

Natascha Trennepohl

Developing a Carbon Market

EU ETS Implementation in Germany
and its Transfer Potential for Brazil

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Foreword

While global attention is focused on fighting the COVID-19 pandemic, climate change remains a defining, long-term challenge that requires policies to create sustainable economies. This challenging task is increasingly gaining attention among policymakers worldwide, since climate change is rapidly becoming a top priority in national politics and international trade remains an essential part of the global economy. To address climate change, the international community created the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. It became the main forum of climate change negotiations and in 1997 the Kyoto Protocol was adopted and set legally binding greenhouse gas emissions (GHG) reduction targets for industrialized countries. In 2019, many governments began the push for net-zero emissions with national targets and new policy strategies.

In this context, Natascha Trennepohl provides a new study on what lessons can be learned from the European Union's Emissions Trading System (ETS) and its implementation in Germany for the development of a carbon market in Brazil. If we look back at the development of emissions trading, in 2005, parties with commitments under the Kyoto Protocol accepted targets for limiting or reducing emissions. To meet their emission-reduction targets with minimum adverse effects on their economies, the parties to the UNFCCC adopted the Paris Agreement on Climate Change. This international agreement establishes the parameters of a new climate regime applicable to all states based on a system of nationally determined contributions (NDCs). Similarly, the UNFCCC introduced emission-reduction policies that require foreign products to mirror the climate costs of their production processes or to favor domestic climate-friendly producers over foreign ones. Accordingly, ETSs have set a limit on the amount of emissions permissible for a company, thereby putting a price on emissions and stimulating emissions reductions.

As the cornerstone of the European Union's (EU) climate change policies, the ETS was designed to ensure that states fulfil their commitment to reducing GHGs cost-effectively. Through creating transferable units, the ETS established a system where parties had an economic incentive to buy and sell emissions allowances and creating the first international trading system for GHGs. However, these targets have created questions on how international trade rules may apply to the emissions trading markets. This is because emissions trading varies from country to country and has a range of different design elements.

With a view to bring least contributing states to climate change into the global climate effort and catalyze national pledges, the Paris Agreement on Climate Change has been built and elaborated around a bottom-up structure, relying upon NDCs set up according to particular national circumstances and priorities. On this premise, state parties ought to be held liable for their pledged contributions only, despite potentially damaging climate change impacts on global environment, and extensively vulnerable state parties. Accordingly, although the Paris Agreement has gained in popularity compared to previous initiatives, its flexibility and lack of enforcement measures have failed to target GHG emissions effectively. It appears that current NDCs are covering approximately one-third of the deep cuts required to meet the 2°C goal.¹

Going further, however, consideration should be given to how additional ambition could be achieved by any other means than strictly relying upon fallible UNFCCC agreements. The key challenge lying ahead would entail determining a balanced and suitable combination between existing climate agreements and complementary institutional modalities such as club-like arrangements. A case in point is the EU ETS that Natascha Trennepohl has analyzed in her work.

Despite its voluntary nature, according to William Nordhaus, the climate-club approach relies on a top-down structure setting from the beginning ambitious standards to reach important levels of abatement.² Following this approach, only states that have strong climate commitments could

1 UNEP (2017), *The Emissions Gap Report 2017*.

2 William Nordhaus, 'Climate Clubs: Overcoming Free-riding in International Climate Policy' 105(4) *American Economic Review* 1344.

embark on a climate club and benefit from its exclusive goods such as preferential terms of trade or investment.

The practical sticking point between the general bottom-up approach to climate commitments and the voluntary club approach lies within the induced penalties that are being imposed to non-members.³ There is no denying that climate clubs would embody a larger dimension, either in terms of participation or emissions reductions, when small trade penalties exist, intended as an economic impetus for joining a club structure. Doubts may arise as to whether the current climate regime would allow to proceed with such incentive. Indeed, the framework for climate-change mitigation is already strictly regulated under the Paris Agreement, standing firmly for a facilitative and non-punitive process for implementation and compliance.⁴ Therefore, NDCs are not subjected to any material sanctions for non-compliance, except for a peer-review mechanism.

Hence, now is the time to determine whether the carbon-market approach, as the one analyzed by Natascha Trennepohl, could be conciliated with the bottom-up international climate regime. Trade law could be touted as the solution to legitimize the existence of climate clubs and their direct implications on trade rules. In this sense, climate change law and trade law can be mutually supportive. Indeed, Article 3.5 of the UNFCCC is not only providing for state cooperation in fighting climate change, but also averts from potential restrictions on international trade, leaving a window open for unilateral measures.⁵ With international cooperation falling short on providing satisfying results, states tend to resort to unilateral action, frequently in the form of trade measures.

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3 See generally Rafael Leal-Arcas, *Climate Clubs for a Sustainable Future: The Role of International Trade and Investment Law*, Kluwer Law International, 2021.

4 UNFCCC, Decision 1/CP.21, U.N. Doc. FCCC/CP/2015/L.9/Rev/1, art 15.

5 UN Framework Convention on Climate Change (adopted 9 May 1992), 1771 U.N.T.S. 107 (UNFCCC), art 3.5.

Preface

The present work was carried out as my doctoral study at the Law Faculty of the Humboldt-Universität in Berlin. It was accepted as a Dissertation in the summer semester of 2021 with *cum laude*.

There is a growing interest in Latin America countries, including Brazil, on the structuring and functioning of an emissions trading as a carbon pricing initiative, especially in times of a fragmented climate regime and carbon border adjustment mechanisms. The complexities of the design elements and the details on how to implement a regulatory framework to structure an emissions trading, considering the lessons learned from previous experiences and the existing framework of climate policies in the countries intending to explore such mechanism, always triggered my interest.

Therefore, this work explores the legal framework and main challenges of implementing the emissions trading in Europe, particularly in Germany, as well as the positive elements that could be transferred for the development of this carbon pricing initiative in Brazil.

In the early days of the EU ETS, I worked in Berlin and had the chance to interact with many stakeholders across Europe, who were great experts in the subject, including members of the German government, businessmen, policymakers, scholars, and researchers from several universities.

I am, therefore, very grateful to many colleagues, specially *Ilka Wagner* for the opportunities I had at the German Federal Ministry of the Environment (BMU), supporting the work of the International Climate Protection Division and being part of the German delegation at the Climate Talks in Bonn; *Prof. Dr. Michael Mehling* for the lessons during the first ICAP Summer School on Emissions Trading organized by the International Carbon Action Partnership (ICAP) in Germany; *Prof. Dr. Francesco Sindico* for the interesting conversations during the LL.M. in Climate Change Law and Policy at the University of Strathclyde

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My sincere gratitude is to my supervisor and first reviewer, *Prof. Dr. Alexander Blankenagel*, for his support and valuable guidance through my entire dissertation and studies at the Humboldt University in Berlin. I would also like to thank the Examination Board for their questions and comments during the defense in German, *Prof. Dr. Philipp Dann*, second reviewer, and *Prof. Dr. Rosemarie Will*, chairman. My dear friends, *Ulrike Vogl* and *Jurga Tallat-Kelpsaite* also have my gratitude for the helpful support in Berlin during this adventure.

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Berlin, September 2021.
Natascha Trennepohl

Table of Contents

List of Abbreviations	XV
Introduction	1
Chapter 1. International Architecture: The Climate Change Legal Regime and Carbon Markets	5
1.1. The United Nations Framework Convention on Climate Change (UNFCCC)	6
1.2. The Kyoto Protocol (KP)	9
1.2.1 Joint Implementation and Clean Development Mechanism	13
1.2.2. Emissions Trading and Use of Offsets	13
1.2.3. Units Accepted under the KP Framework	16
1.2.4. Compliance Framework Outside the Kyoto Protocol	18
1.3. The Paris Agreement and the New Climate Regime	20
Chapter 2. European Framework: Design Elements of the European Union Emissions Trading Scheme (EU ETS)	31
2.1. Institutional and Regulatory Framework at Union Level	32
2.1.1. Institutions: Executive, Judicial, Legislative Branches	32
2.1.2. The Legislative Procedure	34
2.1.3. Competence in Environmental Matters	37
2.2. General Framework and Design Elements of the EU ETS	40
2.2.1. Definition of Coverage and Scope	42
2.2.2. Setting the Cap: From Member States to the Union Registry	43
2.2.3. Allocation Method: From Free Allocation to Auctioning	46
2.2.4. Legal Nature of Allowances	50
2.2.5. Compliance Flexibility: Offsets, Banking, and Borrowing	52
2.2.6. Enforcement: Monitoring, Reporting, Verification	56

2.2.7. Reform of the EU ETS: Back-loading of Allowances and Market Stability Reserve	59
2.3. Court Cases	64
2.3.1. Court of Justice of the European Union	64
2.3.2. Rulings of the CJEU related to the Functioning of the EU ETS	66
A. The NAPs and the Principle of Equal Treatment	66
B. Enforcement and Penalties for noncompliance	68
C. Allocation and Legal Certainty	70
Chapter 3. Germany: Implementation of the EU ETS Directive	73
3.1. Institutional and Regulatory Framework at Member State Level	74
3.1.1. Powers: Legislative, Executive, Judicial Branches	74
3.1.2. Competences: Environmental and Climate Matters	75
3.1.3. State and National Climate Laws	78
3.2. Transposing the EU ETS Directive into National Action and Court Cases	81
3.2.1. Preparing the Ground for the EU ETS	81
3.2.2. The German Greenhouse Gas Emission Allowance Trading Act (TEHG)	83
3.2.3. The German Allocation Acts and Ordinances (ZuG / ZuV)	87
3.3. German National Emissions Trading System (nEHS)	91
Chapter 4. Brazil: General Framework on Climate Change and Voluntary GHG Emission Reduction Targets	95
4.1. Institutional and Regulatory Framework	96
4.1.1. Institutions: Legislative, Executive, Judicial Branches	96
4.1.2. Competence in Environmental Matters	97
4.1.3. From International Negotiations to the National Regulation of Greenhouse Gas Emissions	101
4.2. General Framework and the National Policy on Climate Change	103
4.2.1. The Institutional Framework at Federal Level	103
4.2.2. GHG Emissions and Targets at National Level	106
4.2.3. Pilot Projects and State Initiatives	109
4.3. The Brazilian Emissions Reduction Market (MBRE)	114
4.4. Instruments: Sectoral Plans and Funding	116

4.5. Mandatory Targets and Biofuels: RenovaBio	119
4.6. Court Cases	121
Chapter 5. Path Forward: Cooperation in a Fragmented Framework	125
5.1. Compliance vs. Voluntary Carbon Markets: Similarities and Differences	125
5.1.1. What drives Demand and Supply?	127
5.1.2. What are the Units that can be Traded?	131
5.1.3. Which Is the Role Played by Registry Systems?	133
5.2. Pos-2020: The Consolidation of a Fragmented Framework with Carbon Border Adjustments	135
Conclusions	141
References	145
References of Regulations / Decisions	165
References of Court Cases	171

List of Abbreviations

AAU	Assigned Amount Unit
AB 32	Assembly Bill 32 or California Global Warming Solutions Act
ABNT	Brazilian Association of Technical Standards (<i>Associação Brasileira de Normas Técnicas</i>)
ACR	American Carbon Registry
AGE	Emissions Trading Working Group (<i>Arbeitsgruppe Emissionshandel</i>)
ANA	National Water Agency (<i>Agência Nacional de Águas</i>)
ANP	National Petroleum, Natural Gas and Biofuels Agency (<i>Agência Nacional do Petróleo, Gás Natural e Biocombustíveis</i>)
BAT	Best Available Technology
BASIC	Brazil, South Africa, India, China
BEHG	Fuel Emissions Trading Act (<i>Brennstoffemissionshandelsgesetz</i>)
BGBI	Federal Law Gazette (<i>Bundesgesetzblatt</i>)
BM&F	Stock Exchange (<i>Bolsa de Mercadorias & Futuros</i>)
BMF	Federal Ministry of Finance (<i>Bundesministerium der Finanzen</i>)
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (<i>Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit</i>)
BMWi	Federal Ministry for Economic Affairs and Energy (<i>Bundesministerium für Wirtschaft und Energie</i>)
BNDÉS	National Bank for Economic and Social Development (<i>Banco Nacional de Desenvolvimento Econômico e Social</i>)
BVerfG	Federal Constitutional Court (<i>Bundesverfassungsgericht</i>)
BVerwG	Federal Administrative Court (<i>Bundesverwaltungsgericht</i>)
BVRio	Stock Exchange Rio (<i>Bolsa de Valores Rio</i>)
CAR	Climate Action Reserve
CBA	Carbon Border Adjustment
CBDR	Common but Differentiated Responsibilities
CBIO	Decarbonization credits (<i>Crédito de Descarbonização</i>)
CCA	California Carbon Allowances
CCJ	Committee of Constitution and Justice
CCX	Chicago Climate Exchange
CDM	Clean Development Mechanism
CEPA	California Environmental Protection Agency

List of Abbreviations

CER	Certified Emission Reductions
CETESB	Environmental Sanitation Agency (<i>Companhia de Tecnologia de Saneamento Ambiental</i>)
CF	Constitution of the Federative Republic of Brazil (<i>Constituição Federal</i>)
CITL	Community Independent Transaction Log
CIM	Interministerial Committee on Climate Change (<i>Comitê Interministerial sobre Mudança do Clima</i>)
CIMGC	Interministerial Commission on Global Climate Change (<i>Comissão Interministerial de Mudança Global do Clima</i>)
CJEU	Court of Justice of the European Union
CMCH	National Committee on Meteorology, Climatology and Hydrology (<i>Comissão de Coordenação das Atividades de Meteorologia, Climatologia e Hidrologia</i>)
CMP	Meeting of the Parties to the Kyoto Protocol
CNJ	National Council of Justice (<i>Conselho Nacional de Justiça</i>)
CNPE	National Council of Energy Policy (<i>Conselho Nacional de Política Energética</i>)
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
COP	Conference of the Parties to the United Nations Framework Convention on Climate Change
CPM	Carbon Pricing Mechanism
DCCEE	Department of Climate Change and Energy Efficiency
DEHSt	German Emissions Trading Authority (<i>Deutsche Emissionshandelsstelle</i>)
DG Clima	Directorate-General for Climate Action
DNA	Designated National Authority
EB	Executive Board
EC	European Commission or Commission
ECJ	European Court of Justice
EEX	European Energy Exchange
EPC	Business for Climate Platform (<i>Empresas pelo Clima</i>)
ERF	Emission Reduction Fund
ERU	Emission Reduction Unit
ESR	Effort Sharing Regulation
ET	Emissions Trading
ETS	Emissions Trading Scheme
EU	European Union
EUA	European Union Allowance
EU ETS	European Union Emissions Trading Scheme

FBMC	Brazilian Forum on Climate Change (<i>Fórum Brasileiro de Mudança do Clima</i>)
FNMC	National Fund on Climate Change (<i>Fundo Nacional sobre Mudança do Clima</i>)
GDP	Gross Domestic Product
GG	Basic Law for the Federal Republic of Germany (<i>Grundgesetz für die Bundesrepublik Deutschland</i>)
GHG	Greenhouse Gas
GtCO _{2e}	Gigatons of carbon dioxide equivalent
GTI	Interministerial working group
GVces	Getúlio Vargas Foundation
ICAO	International Civil Aviation Organization
ICAP	International Carbon Action Partnership
ICE	Intercontinental Exchange
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
ITL	International Transaction Log
ITMO	Internationally Transferred Mitigation Outcomes
JI	Joint Implementation
KfW	Germany's Development Bank (<i>Kreditanstalt für Wiederaufbau</i>)
KSG	Federal Climate Change Act (<i>Bundes-Klimaschutzgesetz</i>)
KVER	Korea's Verified Emissions Reduction Program
KP	Kyoto Protocol
LC	Complementary Law (<i>Lei Complementar</i>)
ICER	Long-term Certified Emission Reductions
LDC	Least Developed Countries
LULUCF	Land Use, Land-Use Change and Forestry
MBRE	Brazilian Emissions Reduction Market (<i>Mercado Brasileiro de Redução de Emissões</i>)
MCTI	Ministry of Science, Technology and Innovation (<i>Ministério da Ciência, Tecnologia, Inovações e Comunicações</i>)
MDCI	Ministry of Foreign Trade (<i>Ministério da Indústria, Comércio Exterior e Serviços</i>)
MF	Ministry of Finance (<i>Ministério da Fazenda</i>)
MMA	Ministry of Environment (<i>Ministério do Meio Ambiente</i>)
MRE	Ministry of Foreign Affairs (<i>Ministério das Relações Exteriores</i>)
MS	Member State
MSR	Market Stability Reserve
MOU	Memorandum of Understanding
MtCO _{2eq}	Metric tons of carbon dioxide equivalent

NAP	National Allocation Plan
NCOS	National Carbon Offset Standard
NDC	Nationally Determined Contribution
nEHS	National Emissions Trading System (<i>nationales Emissionshandelssystem</i>)
NGER	National Greenhouse and Energy Reporting
NZU	New Zealand Units
OTC	Over the Counter
PA	Paris Agreement
PDE	Ten-year Energy Expansion Plan (<i>Plano Decenal de Expansão de Energia</i>)
PMR	Partnership for Market Readiness
PNMC	National Policy on Climate Change (<i>Política Nacional de Mudanças Climáticas</i>)
REDD	Reducing Emissions from Deforestation and Degradation
RGGI	Regional Greenhouse Gas Initiative
RMU	Removal Unit
SCE	Emissions Trading Simulation (<i>Simulação de Comércio de Emissões</i>)
SO ₂	Sulfur dioxide
STF	Federal Supreme Court (<i>Supremo Tribunal Federal</i>)
STJ	Superior Court of Justice (<i>Superior Tribunal de Justiça</i>)
tCER	Temporary Certified Emission Reductions
TEHG	Greenhouse Gas Emission Allowance Trading Act (<i>Treibhausgas-Emissionshandelsgesetz</i>)
TEU	Treaty on the European Union
TFEU	Treaty on the Functioning of the European Union
UBA	Environmental Agency (<i>Umweltbundesamt</i>)
UCCEE	UNEP's Collaborating Centre on Energy and Environment
UCTE	Union Coordination Transmission of Electricity
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
VCS	Verified Carbon Standard
WB	World Bank
WCI	Western Climate Initiative
ZuG	Allocation Act (<i>Zuteilungsgesetz</i>)
ZuV	Allocation Ordinance (<i>Zuteilungsverordnung</i>)