

AN DER UNIVERSITÄT ZÜRICH

Herausgeber: Rolf H. Weber

## Jacqueline Jakob-Gallmann

## Regulatory Issues in the Carbon Market

The Linkage of the Emission Trading Scheme of Switzerland with the Emission Trading Scheme of the European Union

## Schulthess $\S$ 2011

## **Table of Contents**

Forev	word		V
Table	e of Cont	ents	VII
List o	of Figure	S	XII
Abbr	eviations		XIII
Bibli	ography		XV
Mate	rials		XXVII
1	Introdu	ction	1
1.1	Emissio	on Trading to Combat Climate Change	1
1.2	Thesis	Objectives and Outline	3
1.3	Literati	ire and Research	4
2	The Int	ernational Climate Policy Framework	7
2.1	Introdu	ction	7
2.2	United (UNFC	Nations Framework Convention on Climate Change CC)	8
2.3	The Ky	roto Protocol	10
	2.3.1	The Article 3.1-Commitment	10
	2.3.2	Annex B-Parties	11
2.4	The Ky	roto Carbon Market	12
	2.4.1	"The Currency"	13
	2.4.2	Cap-and-Trade: Assigned Amount Trading (AAT)	15
	2.4.3	Baseline-and-Credit: Joint Implementation (JI) and	
		Clean Development Mechanism (CDM)	17
	2.4.4	Supplementarity and Additionality	21
	2.4.5	Governance Issues of the Kyoto Carbon Market	23
		.5.1 Temporal Flexibility	24
	2.4	.5.2 National Registries, CDM Registry and the International Transaction Log (ITL)	24

	24	.5.3 Issues of Non-Compliance	26	
2.5		-	28	
2.5	Compliance with International Law 2.5.1 The Principle of Non-Discrimination		28 29	
	2.5.1		30	
	2.5.2	Border Tax Adjustments (BTA) to Compensate for	50	
	2.3.5	Additional Costs?	31	
	2.5.4	Legitimate Non-Trade Policy Goals?	32	
2.6		Existing Carbon Markets	34	
2.7	Outlook on the Future of the International Climate			
2.1	Framev		35	
	1 1411101		55	
3	The En	nission Trading Scheme of the European Union	39	
3.1	Introdu	iction	39	
3.2	Curren	t EU-Legislation	39	
	3.2.1	Approval of Kyoto Protocol	41	
	3.2.2			
	3.2.3	Linking-Directive	45	
	3.2.4	Aviation-Directive	45	
	3.2.5	Revised ETS-Directive	46	
	3.2.6	Incorporation of ETS-Directive into the EEA		
		Agreement	47	
3.3	Coverage of the Scheme		48	
	3.3.1	The Cap	48	
		.1.1 EU-Commitment under Kyoto	48	
		.1.2 EU-ETS Coverage	49	
		.1.3 "Cap within a cap"	50	
	3.3.2	Periods	51	
	3.3.3	Sectors and Gases covered	52	
3.4		ary Installations	53 53	
	3.4.1			
	3.4.2	1 8		
	3.4.3			
	3.4.4			
	3.4.5			
		Leakage	61	
3.5	Aviation			

	3.5.1	Cap-Setting in the Aviation Sector	65	
	3.5.2	The Allocation Process in the Aviation Sector	66	
	3.5.3	Questioned Legality under International Law	67	
3.6	Definit	ion and Recognition of Trading Units	69	
	3.6.1	Measurement of a Trading Unit	69	
	3.6.2	Legal Nature of a Trading Unit	70	
	3.6.3	3.6.3 Offsetting from Abroad - Linking with "Kyoto"		
	3.6.3.1 The Issue of Double-Counting			
	3.6.3.2 The Issue of Supplementarity		74	
	3.6.3.3 The Issue of Additionality		75	
		.3.4 Offsetting from Abroad - Outlook	76	
	3.6.4	Linking with Aviation	78	
3.7	Compl	iance Issues	79	
	3.7.1	Monitoring, Reporting and Verification (MRV)	80	
	3.7.2	Registration in the EU-ETS	84	
	3.7.3	1 2	86	
		.3.1 Banking	87 88	
	3.7.3.2 Borrowing			
	3.7.4	Non-Compliance with Reduction Target	90	
	3.7.5	Enforcement	91	
3.8	Perforr	nance of the EU-ETS	92	
	3.8.1	Carbon Price	92	
	3.8.2	Effected Emission Reductions	93	
3.9	Outloo	k on the Future of the EU-ETS	94	
4	The Er	nission Trading Scheme of Switzerland	97	
4.1	Introdu	letion	97	
4.2	Curren	t Legislation in Switzerland	97	
	4.2.1	$CO_2$ -Act of 8 October 1999	98	
	4.2.2		100	
	4.2.3	-	101	
	4.2.4	-	103	
4.3	Covera	ge of the Swiss Emission Trading Scheme (CH-ETS)	105	
	4.3.1	Periods	106	
	4.3.2	Gases covered	107	
	4.3.3	Sectors and Allocation	109	

	4.3.3	3.1	Sectors and Allocation through Target Agreements	109	
	43	3.2	Post 2012-Sectors	109	
		3.3	Post 2012-Allocation	111	
4.4	Definition and Recognition of Trading Units			113	
	4.4.1		surement of a Trading Unit	113	
	4.4.2		ificates - Offsetting from Abroad	113	
	4.4.3		uction Units bought by the Swiss "Climate		
			t Foundation"	116	
4.5	Complia	Compliance Issues			
	4.5.1 Monitoring, Reporting and Verification (MRV)			117 117	
	4.5.2	÷ • • • • • • • • • • • • • • • • • • •		119	
	4.5.3	Tem	poral Flexibility	122	
	4.5.4	The	CO <sub>2</sub> -Fee as an Instrument for Compliance	122	
	4.5.5		-Compliance with CO <sub>2</sub> -Fee-Provision	124	
4.6	Perform	ance	of the CH-ETS	124	
4.7	Outlook	on th	e Future of the CH-ETS	125	
5	Linking	Emis	sion Trading Schemes	129	
5.1	Introduc	tion		129	
5.2	Linking in Theory			130	
	5.2.1 Form of Linking			130	
	5.2.1	130			
	5.2.1	1.2	Indirect Linking	131	
	5.2.1.3 Institutional Considerations			132	
	5.2.2		ing the Coverage of Sectors and Gases	135	
	5.2.3 Cap-Setting in a Linked ETS				
		8.1		136	
	5.2.3		Incentives to Cap-Setting Altered	137	
	5.2.4		cation in a Linked ETS	139	
	5.2.5 Definition and Recognition of Trading Units in a				
	Linked ETS		139		
	5.2.5.1 5.2.5.2		Differences in Offsetting Rules	140	
	5.2.5 5.2.6		Quantitative Limits of Offsetting poral Flexibility in a Linked ETS	141	
	5.2.6	142			
	5.2.6		Periods Banking	142	
	0.2.0		Dunning	143	

		.6.3 Borrowing	143
	5.2.	.6.4 Ex-Post Adjustments	143
	5.2.7 Governance Issues and Intervention Mechanisms in		
		a Linked ETS	144
	5.2.	g, g g g g g	144
		7.2 Non-Compliance Penalty	145
		7.3 Cost-Containment Measures	145
5.3	Economic Consequences of a Linkage		146
	5.3.1	Cost Effectiveness and Efficiency	147
	5.3.2	Increasing Liquidity - Decreasing Volatility	149
	5.3.3	Prevention against Competitive Distortions	150
	5.3.4		
	5.3.5	National Concerns	153
	5.3.6	Impact on Total Global Emissions	155
5.4	Issues in the Case of a CH-EU-ETS Linkage		
	5.4.1	Linking in Practice	156
		1.1 Mandate for Negotiation	156
		1.2 Conclusion of an International Treaty	156
		1.3 Next Steps	157
	5.4.2	Sectors and Entities Covered	158 159
	5.4.3		
	5.4.4		
	5.4.5	Quantitative Limits of Offsetting	
	5.4.6	Governance Issues in a Linked CH-EU-ETS	165
5.5	Expecte	ed Performance of a Linked CH-EU-ETS	166
	5.5.1	Carbon Price	166
	5.5.2	Effected Emission Reductions	166
	5.5.3	National Welfare	167
6	Conclu	sion	169
6.1	The Int	ernational Climate Policy Framework	169
6.2	The Err	nission Trading Scheme of the European Union	171
6.3	The En	nission Trading Scheme of Switzerland	173
6.4	Linking Emission Trading Schemes		