

Integrated Environmental-Economic Accounts for **Tradeable Carbon Dioxide Emission Permits**

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Purpose

- To introduce the Environmental-Economic Accounting framework as a means for organizing data on CO₂ permits

Outline

- Features of the Emission Trading Scheme
- The System of Environmental-Economic Accounting (SEEA-2003)
- Physical CO₂ permits accounts
- Monetary CO₂ permits accounts

The Emission Trading Scheme

- One of the means for meeting the reduction obligations committed to under the Kyoto-protocol
- Part of the global market
- The permits gives the right to emit 1 ton of CO₂
- Different participants on the market
- Different types of permits
- Physical as well as monetary aspects

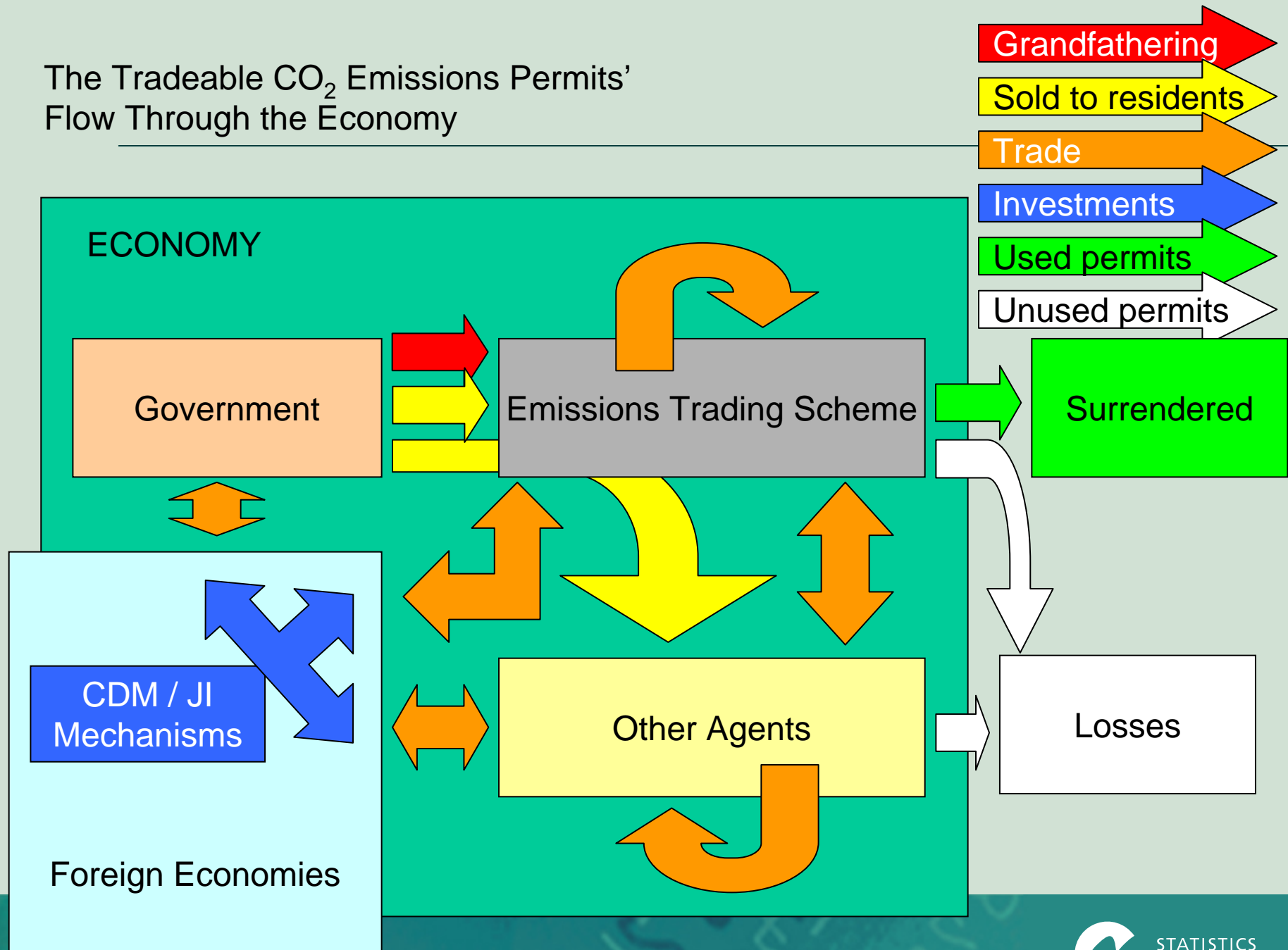
SEEA-2003

- Satellite system of the System of National Accounts (SNA)
- Set of definitions, classifications, statistical accounts and tables
- Allows incorporation of environment and energy statistics into the national accounting framework
- Analyse interaction between environment and economy and between environmental domains

The permits' flow through the economy

- The creation of the permits
- Agents in the Emission Trading Scheme
- Other agents

The Tradeable CO₂ Emissions Permits' Flow Through the Economy



Physical CO₂ permits accounts

- Data source: The CO₂ permit registry
- Link to the National Accounts industry classification
- Statistics on the CO₂ permits
- Link to the Environmental Accounts
- Link to the National Accounts

Questions that could be answered

- What are the origins of the CO₂ permits?
- From where have the industries received the permits?
- Who owns the permits?
- Who is trading with the permits?

Questions that could be answered, cont'.

- Relationship between the use of energy and the CO₂ emissions
- Relationship between CO₂ emissions and permits
- Relationship between CO₂ permits and environmentally related taxes and subsidies
- Economy: Output, Gross Value Added, Employment

Results from a Danish experience

Balance sheet. Denmark, 2005.

Industries	Opening stock							Closing stock	
	Allocated	Purchased	CDM credits	J credits	Sold	Surrendered allowances	Surrendered (fines, etc)	(8) (=1+...+5-6-7-8)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
1 000 allowances / 1 000 tonnes CO ₂									
Total	0	37 371	NA	NA	NA	NA	26 471	0	10 901
Households	0	0	NA	NA	NA	NA	0	0	0
Total industries	0	37 371	NA	NA	NA	NA	26 471	0	10 901
1 Agriculture, fishing and quarrying	0	3 056	NA	NA	NA	NA	2 328	0	728
2 Manufacturing	0	7 525	NA	NA	NA	NA	5 438	0	2 087
3 Electricity, gas and water supply	0	26 790	NA	NA	NA	NA	18 704	0	8 086
4 Construction	0	0	NA	NA	NA	NA	0	0	0
5 Wholesale and retail trade; hotels, rest.	0	0	NA	NA	NA	NA	0	0	0
6 Transport, storage and communication	0	0	NA	NA	NA	NA	0	0	0
7 Financial intermediation, business active.	0	0	NA	NA	NA	NA	0	0	0
8 Public and personal services	0	0	NA	NA	NA	NA	0	0	0

Results from a Danish experience, cont'.

Gross use of energy, CO₂ emissions, CO₂ permits and the link to the economy. Denmark, 2005.

Industries	Gross use of energy	CO ₂ emissions	Surrendered permits	CO ₂ permits allocated	Energy related taxes	Energy related subsidies	Gross value added	Employment
	— TJ —	— 1 000 tonnes CO ₂ /allowances —				Mill. Dkk		Persons
Total	1 810 902	95 486	26 471	37 371	36 370	244	1 164 096	2 722 123
Households	268 311	13 843	0	0	21 764	25		
Total industries	1 542 591	81 642	26 471	37 371	14 606	206	1 164 096	2 722 123
1 Agriculture, fishing and quarrying	81 618	4 988	2 328	3 056	931	3	63 924	85 614
2 Manufacturing	469 705	8 356	5 438	7 525	2 251	106	167 395	384 504
3 Electricity, gas and water supply	338 207	25 964	18 704	26 790	95	1	21 917	13 219
4 Construction	18 692	1 369	0	0	1 193	1	59 979	170 236
5 Wholesale and retail trade; hotels, rest.	43 601	1 269	0	0	2 193	10	159 227	518 404
6 Transport, storage and communication	528 299	37 950	0	0	2 954	4	105 643	176 861
7 Financial intermediation, business active.	17 755	471	0	0	1 323	10	282 641	397 900
8 Public and personal services	44 715	1 275	0	0	3 667	72	303 370	975 385

Global carbon market

- 2007: c € 40 bn.
- 2008: c € 60 bn.
- European market constitutes approximately two thirds

Monetary CO₂ permits accounts

- The corresponding monetary values based on the physical CO₂ permits accounts
- Valued at the average CO₂ permit price
- The basis for the description in the National Accounts

Summary

- Complex market for CO₂ permits
- Integrated Environmental-Economic Accounting is a way of structuring information
- Enables to systematically analyse the impact of the economy on the environment, and vice versa
- Enables consistent analyses of the economic activity, the use of energy, the associated CO₂ emissions, environmentally related taxes and subsidies as well as the CO₂ permits

Contact information

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