

Emissions Trading: Return for climate and business

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Safety, Berlin
on the occasion of the
Conference „Climate Policy 2005 and Beyond“
Japanese – German Impulses



1 November 2005
Tokyo

We have begun a chain reaction which is changing business cultur. Carbon dioxide has moved out of the domain of the environmental officer at a company to the boardroom and the chief financial officer and the chief executive officer.“

**Catherine Day, Director General, EU-Commission,
7. October 2005**

The Targets – the necessary first step

The Kyoto targets

Party	GHG – target
Austria, Belgium, Bulgaria, Danmark, Estonia, EU, Germany, Finland, France, Greece, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Monaco, Netherlands, Portugal, Romania, Sweden, Swiss, Slovakia, Slovenia, Spain, Czech Republic, United Kingdom	minus 8 %
Croatia	minus 5 %
USA [1990 – 2004: + 19,4 % 2003 – 2004: + 1,4 %]	minus 7 %
Japan, Canada, Poland, Hungary	minus 6 %
Russia, Ukraine, New Zealand	+/- 0 %
Norway	plus 1 %
Australia [1990 – 2004: + 40 % 2003 – 2004: + 4,3 %]	plus 8 %
Iceland	plus 10 %

The EU (EU15) bubble – Art. 4 Kyoto

Protocoll






EU Member State	„burden sharing“ target
Luxembourg	- 28 %
Danmark	- 21 %
Germany	- 21 %
Austria	- 13 %
UK	- 12,5
Belgium	- 7,5 %
Italy	- 6,5 %
Netherlands	- 6 %
Finland	+/- 0 %
France	+/- 0 %
Sweden	+ 4 %
Ireland	+ 13 %
Spain	+ 15 %
Greece	+ 25 %
Portugal	+ 27 %
EU	- 8 %

Targets and Timetables in Germany

Climate Change related Targets		Status
burden sharing	Reduction of CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs and SF ₆) by 21 % in the period 2008 – 2012 compared to 1990 and 1995	Ratification of the KP by national law
2020 target	Reduction of greenhouse gas emissions by 40 % by 2020 on the condition that the EU agrees to a GHG reduction of 30 % by 2020 (base year 1990).	Contract of the read-green Coalition (2002)
Renewables	Doubling the share of renewables by 2010 to primary energy consumption from 2.4 to 5 % and to electricity generation from 5 % to 12,5 % and by 2020 to 20 %	Renewable Energy Act (2004)
CHP	Maintaining, modernising and expanding CHP with the aim of reducing CO ₂ by an additional 10 mill. t and 23 mill. t by 2010 (base year 1998)	CHP – Act (2001) + CHP commitment by German Industries (2001/2004)
Energy Efficiency	Doubling the energy productivity of the society by 2020 compared to 1990	National Strategy on Sustainable Development

Emissions Trading - The Background

EU ETS = “cap and trade”

- Specification of a total volume of emissions (“cap”)

- Distribution of this total volume of emissions to individual emitters (preliminary allocation of emissions allowances)

- Specification of framework conditions for a transparent and liquid market and to prevent competition barriers

- Establishment of a monitoring and reporting system (“ecological accounting”)

- Whether, where, when, how and how many emissions are avoided is decided by the market

- Outcome: emissions trading allows the exploitation of costs differences between emitters

EU – ETS and International emissions trading – don't mix it up

International emissions trading (Art. 17 Kyoto Protocol)

- Trading only between Annex I parties (OECD – countries)
- All Greenhouse Gases are tradeable (CO₂, CH₄, N₂O, HFC's, PFC's, SF₆)
- Start: 1. January 2008



EU – ETS

- Trading between companies (operators of energy incentive installations)
- only CO₂ is tradeable
- Start: 1. January 2005

The EU ETS

The EU “cap and trade” - scheme

- **Mandatory concept based on absolute targets**
- **Installation approach (> 20 MW thermal power of furnace) or incorporation of energy-intensive sectors (Annex I)**
- **In principle all “Kyoto gases” – starting with CO₂ (Annex II)**
- **Absolute “caps”**
- **Pilot phase 2005 – 2007**
- **Final phase 2008 – 2012 – after 2012 extendable by 5 years at a time**
- **Drawing up “National Allocation Plans” for all sectors**
- **Allocation method of “grandfathering” until 2012 – only a small portion of allowances can be auctioned (5 % 2005 – 2007 and 10 % 2008 – 2012)**
- **Allocation rules (Annex III) reflect technical possibilities, demand, newcomers and “early action”**
- **46 % of EU’s CO₂ emissions covered**
- **58 % of Germany’s CO₂-emissions covered**

The EU Trading Scheme

- **EU Emissions Trading Directive (13. October 2003)**
- **The NAP guidance (7. January 2004)**
- **The Monitoring Guidelines (29. January 2004)**
- **The Directive on the Registry**
- **The Linking Directive (13. November 2004)**
- **Proposal to expand the EU ETS to aviation**

The EU Trading Scheme

Whoever

- engages in an activity listed in Annex 1 of the Directive (under Article 2 (1), Article 3, Article 4, Article 14 (1) and Article 26 of the Draft Directive)

requires

- a **permit** (not tradable) to emit greenhouse gases (under Articles 4 - 8 of the Draft Directive)

and

- must possess emission **allowances** (tradeable) for the greenhouse gases listed in Annex II (CO₂ only in first step) (Article 12 (3) of the Draft Directive).

Installation Classification – Two Categories

Classification Criteria	Type of Installation	Included Installations
Category A Cross-cutting approach	Installations that provide energy services (power, heat, steam, cooling, etc.) Power stations, heating plants, thermal power stations and other combustion plants	Combustion installations in all sectors of industry and energy production with a rated thermal heating input of > 20 MW
Category B Energy-intensive production	Industrial installations for the production of steel, paper, bricks, ceramic products, glass, cement and lime	Production installations except those below a certain size

The German Situation

National Allocation – The Strategic Challenge

- 1849 installations in the energy industry and energy-intensive production sectors installations covered
 - 99 % of CO₂ emissions in public electricity supply
 - 96 % of CO₂ emissions in the industrial energy sector
 - 87 % of process-related CO₂ emissions
 - > 60 % of CO₂ emissions in all other industrial production installations
- ET sector represents 500 million t CO₂ (58 % of total CO₂-emissions in Germany)
 - of which 250 million t CO₂ are concentrated among the four largest electricity and energy suppliers: E.ON, RWE, Vattenfall and EnBW.

Legally binding targets (§ 4 Act on the Allocation of Allowances - 31. August 2004)

Sector	2005 - 2007	2008 - 2012
Greenhouse Gases	974 Mill. t CO _{2equ}	962 Mill. t CO _{2equ}
Energy and Industry	503 Mill. t CO ₂	495 Mill. t CO ₂
Residential and Transport	298 Mill. t CO ₂	291 Mill. t CO ₂
Commercial	58 Mill. t CO ₂	58 Mill. t CO ₂
CO ₂ - total	859 Mill. t CO ₂	844 t CO ₂

Allocation Method

Allocation Method	Concept	Formula
Grandfathering based on historical emissions	Average absolute emissions (2000 – 2002) – 'early action' with detailed evidence.	Installation emissions x compliance factor
Grandfathering based on benchmarking In principle for new installations. The option rule (§ 7 (12) ZuG2007) provides the possibility for incumbents to make use of the new comer rule	Specific reference emissions threshold multiplied by current output multiplied by compliance factor	Installation out put x average emissions in respective sector x compliance factor

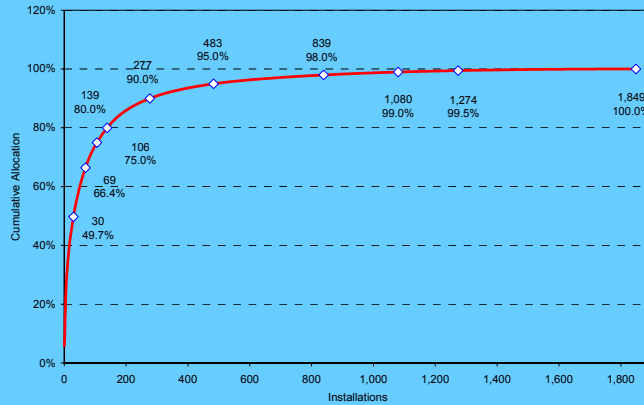
Special provisions 2005 – 2007 - 58 combinations of allocation rules

- Set aside for new entrants: 3 mill. t CO₂/year
- Compensation for nuclear power: 1.5 mill. t CO₂/year
- Budget for combined heat & power: 2,0 (1.5) mill. t CO₂/year
- Emissions with compliance factor = 1
 early action (estimation): 111 (114) mill. t CO₂/year
 process-related emissions
 (steel, lime, cement, glass) (64,2) 61 mill. t CO₂/year
 process-related emissions
 (refineries/mineral oil) 7,5 mill. t CO₂/year

Results of the Allocation (1)

Sektor	Number of Installations		Volume of allowance Trading Period 2005 – 2007	
Energy supply	1.236	66,8 %	1.171	78,9 %
Industry	613	33,2 %	314	21,1 %
total	1.849	100 %	1.485	100 %

Results of the Allocation (2)



Installations affected by cutbacks pursuant to Art. 4 (4) and Art. 5 ZuG2007

Cutback of allocation in %	No. of installations
0 %	376
0 – 2 %	116
2 – 4 %	146
4 – 6 %	385
6 – 7.4 %	262
7.4 %	564
Total	1,849

Structure of the legal implementation in Germany (TEHG and NAP-G)

Legal Structure of Implementation in place

- TEHG – GHG-Emissions Trading Act entered into force on 14. Juli 2004
- ZuG2007 – Allocation Act 2007 entered into force on 31. August 2004
- ZuV2007 – Allocation Ordinance 2007 entered into force on 1. September 2004
- KostV – Kostenverordnung entered into force on 1. September 2004
- Act on the implementation of the „linking directive“ („ProMechG“ - Linkage between the EU – ETS and the Kyoto-Mechanisms „Joint Implementation“ and „Clean Development Mechanism“) entered into force on 30. September 2005

Under preparation – to be developed:

- NAP II und ZuG2012 under preparation
- Act on Reporting and Monitoring – KBSG – under preparation

Liquidity of the Market

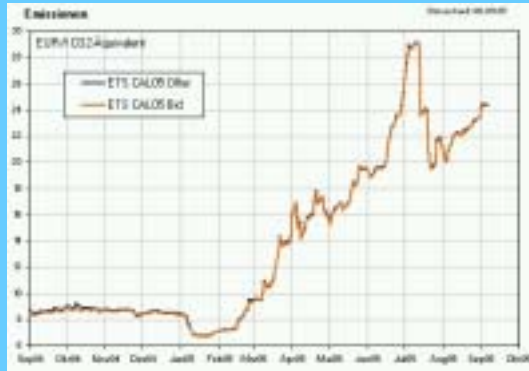
Potential Buyers – Potential Sellers I

EU-Member States	GHG emissions base year	GHG emissions 2003	„burden sharing“	target2008 - 2012	Distance to target: Kyoto target versus GHG-emissions 2003
Belgien	146,8	147,7	- 7,5 %	135,8	- 11,9
Dänemark	69,6	74,0	- 21 %	55,0	- 19,0
Deutschland	1248,3	1017,5	- 21 %	986,2	- 31,3
Finnland	70,4	85,5	+/- 0 %	70,4	- 15,1
Frankreich	568,0	557,2	+/- 0 %	568,0	+ 10,8
Griechenland	111,7	137,6	+ 25 %	139,6	+ 2,0
Irland	54,0	67,6	+ 13 %	61,0	- 6,6
Italien	510,3	569,8	- 6,5 %	477,1	- 92,7
Luxemburg	12,7	11,3	- 28 %	9,1	- 2,2
Österreich	78,5	91,6	- 13 %	68,3	- 23,3
Portugal	59,4	81,2	+ 27 %	75,4	- 5,8
Schweden	72,3	70,6	+ 4 %	75,2	+ 4,6
Spanien	286,1	402,3	+ 15 %	329,0	- 73,3
United Kingdom	751,4	651,1	- 12,5 %	657,5	+ 6,4
Niederlande	213,1	214,8	- 6 %	200,3	-14,5
insgesamt	4.252,5	4.179,6	- 8	3.912,3	- 267,3

Potential Seller – Potential Buyers II

Accession Country	GHG – base year emissions in Mill. t	Base year	Kyoto targets	GHG-Emissionen in mill. t in 2001	Distance to target: Kyoto target versus GHG-emissions 2001
Bulgarien	157,7	1988	145,1	77,7	+ 67,4
Tschechische Republik	192,1	1990	176,7	148,0	+ 28,7
Estland	43,5	1990	40,0	29,4	+ 10,6
Ungarn	102,6	Mittelwert 1985 - 1987	96,4	84,3	+ 12,1
Lettland	29,0	1990	26,7	11,4	+ 15,3
Litauen	51,5	1990	26,7	11,4	+ 15,3
Polen	565,3	1988	531,4	382,8	+ 148,6
Rumänien	264,8	1989	243,6	148,3	+ 95,3
Slowakei	72,2	1990	66,4	50,1	+ 16,3
Slowenien	19,9	1986	18,3	20,2	- 1,9

Prices



Options

**Cost-effective possibilities to reduce CO₂ in
Germany**
The Ecofys - Study

Range of costs (€/t CO ₂ -reduction)	Reduction potential in mill. t CO ₂ /a
< - 10	23
- 10 bis 0	16
0 - + 10	16
+10 - + 20	15
+ 20 - + 50	19

**Opportunities of CO₂- emission reduction in
Germany (Lower Saxony – „co2ncept – study“ by the
association of enterprises Lower Saxony)**

Installations	Total CO ₂ -emissions	CO ₂ -emission reduction
59	780.000 t	
41		225.000 t = 28 % technically feasible
29		210.000 t < 10 €/t CO ₂ Compared with the actual price of european allowances (EAU) companies could benefit by reducing CO ₂ -emissions 2,9 mio €/y

The Flex Mechs as means to reduce costs?

The German Government's Position

- Priority is given to 'domestic action'
- Use of 'Kyoto mechanisms' supplementary
- Great interest among German industry in the use of JI and CDM
- Projects should be focussed on 'energy efficiency' and 'use of renewable energy'
- Wait and see attitude due to the ongoing work in Bruxelles – reports on „sinks“ and „National Projects“ until 30. June 2006
- Wait and see attitude due to lack of emissions thresholds for installations listed in Annex I of the EU Emissions Trading Directive - task of the NAP II development

Level of implementation of the “Linking Directive”

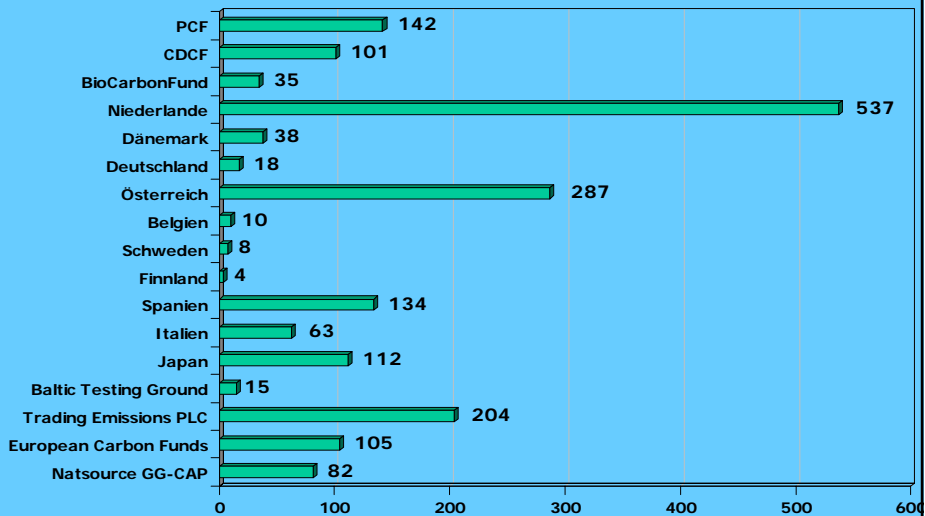
- German government is participating financially in the BASREC testing ground
- KfW Fund exists (volume of €75 million – German government providing €8 million)
- Approximately 120 projects under preparation (JI and CDM)
- In future DEHSt will serve as DNA (§ 10 ProMechG)

Planned purchase of ERUs and CERs with public funds in the second trading period (planned figures in submitted NAPs)

MS	Purchase of allowances with public funds p.a. 2008 - 2012	Relationship CERs/ERUs to respective burden sharing target	Relationship CERs/ERUs to current distance to target (end of 2002)
Netherlands	17 – 20	133 – 156 %	121 – 142 %
Spain	20	-	29 %
Austria	7	69 %	42 %
Ireland	3.7	-	43 %
Denmark	3.7	26 %	26 %
Portugal	3.7	-	46 %
Luxembourg	3	86 %	176 %
Belgium	2.5	23 %	18 %
Italy	32.5 – 60	98 – 182 %	41 – 76 %
Total	99.1 – 126.6		

Demand on the CDM/JI Market

(Volume of Funds in Mio. €)



Quelle: „Environmental Finance“/Factor AG

Current Information and Assistance

Information on current developments, documents for download, findings of the Working Group Emissions Trading As A Means To Combating Climate Change:

<http://www.bmu.de>

<http://www.umweltbundesamt.de/emissionshandel>

**Thank you very much for your
attention**