



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

Carbon Pricing

Putting a Price on GHG Emissions

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Carbon Pricing in EU / Germany

- **CO₂-Taxes** in some countries from the 1990s especially in Scandinavia, but also Poland and others
 - **Germany:** „**Ecotax**“ from 1999 on petrol, electricity – revenues recycled partly to pension fund
- ***Kyoto Protocol with Market Mechanisms decided in 1997 for the years 2008-2012***
- **Emission Trading** in EU started in 2005 – piloting the Kyoto idea



... Trade between countries: **Kyoto Protocol**

- Some EU countries traded units under the Kyoto Protocol (AAU trade)
- Countries selling their surplus, such as Poland, Bulgaria, etc. usually **established Environment Funds** to **spend the money on environment protection and climate** policy



Trading between EU Countries

EU has **Economy wide target** since 2008.

Target under Paris (NDC): -40% versus 1990 in 2030

- Emission Trading Scheme (ETS) covers around 40% of EU Emission.
- Other 60% (heating, cooling, transport, small industry) – CO₂-budget for each Member State, for every year
- Countries can trade Emission Rights (AEAs)
- Until 2020 overallocation, very little trade (so far 0.1 Mio. from Bulgaria to Malta) will change from 2021



EU Emission trading

- **Phases:** 2005-2007; 2008-2012; 2013-2020
next: 2021-2030
 - **EU wide cap**, trade between installations
 - **Scope:** Energy intensive industries, electricity covered
- **Start with mostly free allocation** of emission rights (EUAs)
- Moved to **auctioning** of EUAs for **power sector** (price passed through to consumers)
 - But **compensation** for industries using electricity
- **Free allocation** based on benchmarks for most of industry to prevent **carbon leakage** (international competition)
- Use of **Kyoto Zertifikates** from CDM and JI as offsets (until 2020)



ETS versus Tax

ETS

- Fixed target/cap – **total emissions known!**
- **Efficiency:** cheap mitigation happens first
- Strong incentive to innovate and find cheap mitigation
- Acceptance
- Added complexity through trade

TAX

- Price fixed – **planning security** (for industry and government), defined incentive
- Offsets can add market element
- **Less complexity**
- Less accepted, less flexible

... also depends on compatibility with current system



EU: Why ETS and not tax?

- Piloting the Kyoto idea of Carbon Markets
- Carbon Market idea was discussed a lot – needed to be tested on the ground
- Tax had also been discussed, was introduced in some countries
- Trade had better acceptance: efficiency, flexibility, meeting targets
- Also: in EU unanimity is needed for decisions on tax (i.e. more difficult to agree)



Does Industry like it?

- Not at first!
- Now they do (mostly)
- Important:
 - planning security
 - Protection against carbon leakage



German Industry Association Study

German Industry Association (BDI) released study this year.

- Scenarios: -80% and -95% GHG emissions versus 1990 in 2050 (in Germany)
- Result: it can be done and economy does not suffer.
- BUT: it has to be done right!
- Important for industry: carbon leakage – if not yet same measures / prices every where globally
- -95% - difficult unilaterally – need world acting
- -80% can be done unilaterally
- (Note: -95% means 75% less emissions than -80%!)



Competitiveness? Vulnerable Consumers?

When introducing Carbon Pricing - Strategy is needed to deal with

- Economic stakeholders' competitiveness
- Vulnerable consumers

Possibilities:

- Rebates, free allocation → weakens incentive, though
- Revenue spending:
 - Social issues, education – and/or transfer payments to consumers
 - Recycling money to industry
 - Spending on relevant infrastructure
 - (Spending on climate / environment / adaptation)



Look around

... many different detailed approaches to deal with
avoiding negativ impacts ...



Carbon Pricing is gaining momentum

The number of jurisdictions with carbon pricing policies has doubled over the past decade:

- 51 national and regional governments put a price on carbon through emissions trading systems (25) and taxation (26)
- Out of the 162 NDC (representing 190) more than 50% of all NDCs (92) indicate intention to use international mechanisms.



CO₂-Price developments

The **price range of CO₂ prices varies between jurisdictions:**

- Eg. SWE 139€ **carbon tax** and in ARG the carbon tax will start with 1\$ and increases in 10 years to 10\$.
- Canada: System start with 10 CAD and will increase to 50 CAD in 2022
- In half of the mandatory ETS systems the market prices are below 15\$ (2016: 10\$)
- **Growing number of mandatory systems and increasing CO₂-prices**
- **Note: highest prices in tax systems!**
 - ETS (with floor price) up to 25 US\$
 - Tax up to 139 € (Sweden)



Recommended:

World Bank Report:

State and Trends of Carbon Pricing 2018

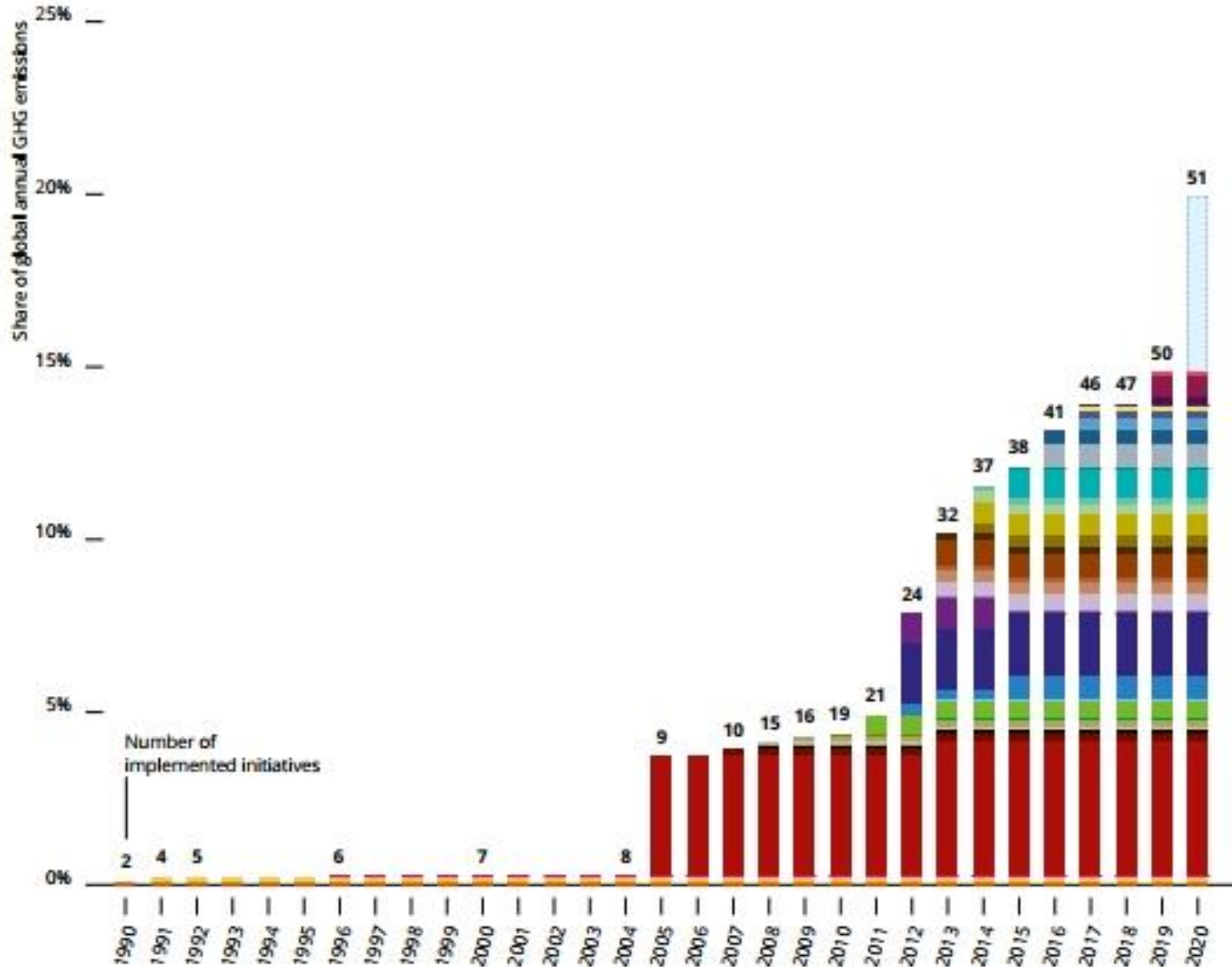
*.... Lots of facts and figures on carbon pricing
world wide*

<https://openknowledge.worldbank.org/handle/10986/29687>





Pricing over time





Internal CO₂-Price

- Today, **1,389+ companies** are disclosing to CDP their plans or current practice of putting a price on carbon emissions
- This represents an 11% increase from 2016
- Reason:
 - Understand that **carbon risk management** is a business imperative
 - Consider potential future policy development
 - Giving guidance on investment decisions
 - Identify potential opportunities to reduce emission cost-effectively



Internal CO₂-Price used by Multilateral Development Banks

- World Bank: newly introduced shadow price to evaluate investment projects
- „High-Level Commission on Carbon Prices“ (Stiglitz & Stern, 2017) recommend price range: US\$40-80 CO₂eq t in 2020, rising to US\$50-100 CO₂eq t by 2030
- Other MDBs like ADB, EBRD, EIB use a shadow price with a similar approach like WB.
- ... MDBs stop investing in coal



Paris Agreement

➤ *A new quality*

- The long-term goal – Essential emission reductions until 2050
Pathway well below 2°C – emissions peak as soon as possible
- Inclusiveness: all Parties contribute (NDC)
- Cooperation is underlying principle of the Paris Agreement

➤ *The transition of responsibilities*

- A bottom-up process
- Progression over time
- Common but differentiated responsibilities will change Parties role and contributions
- IPCC report on 1,5 ° C



Paris Agreement: Private Sector Involvement

- **Art. 6.4 is anchor for private sector and markets**
- **The overall aim of the PA can be achieved only, when the private sector is on board**

- ***What do we need from private sector?***
 - Investment (from models to business cases)
 - Innovation (pioneering, technology and strategies)

- ***Reasons for the engagement of the private sector***
 - Sustainable solutions enabling longterm competitiveness and market relevance
 - Requirements set in policy instruments, such as emissions trading, carbon taxes, programs, etc.



INTERNATIONAL CARBON PRICING INITIATIVES

88 NDCS
plan or consider using carbon pricing
and/or market mechanisms

56%
of global GHG emissions
are covered by these NDCs

REGIONAL, NATIONAL AND SUBNATIONAL CARBON PRICING INITIATIVES

45
NATIONAL
jurisdictions with carbon pricing initiatives

25
SUBNATIONAL
jurisdictions with carbon pricing initiatives

51
CARBON PRICING INITIATIVES
implemented or scheduled for implementation

WOULD COVER ANNUAL GLOBAL GHG EMISSIONS OF

11 GtCO₂e = 20%

PRICES IN THE IMPLEMENTED INITIATIVES

US\$1-139/tCO₂e

46% of the emissions covered are prices <US\$10/tCO₂e

Carbon pricing revenues raised
by governments in 2017 were

US\$33 billion

Higher compared to US\$22 billion in 2016

Annual value of carbon
pricing initiatives in 2018 is

US\$82 billion

Higher than the value of US\$52 billion for 2017

INTERNAL CARBON PRICING INITIATIVES

OVER **1,300** COMPANIES
are using or planning
to use internal carbon pricing
in 2018-2019

84%
of these companies are located in
jurisdictions with (scheduled) mandatory carbon
pricing initiatives

INTERNAL CORPORATE CARBON PRICES ARE IN THE RANGE OF

US\$0.01-909/tCO₂e



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Thank You



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Back up



Steps to be taken next – NDCs in focus

➤ *Setting the scene*

2018

Paris Rule Book and the Talanoa Dialogue

2019/20

Chance of an up-dated in 2020

➤ *NDC iteration progression over time*

2023

Global Stock Take and the first NDC iteration

2025/2030

Expectations on the 2nd/3rd NDC



NDC and Cooperation

➤ *Cooperative character of the Agreement*

- Several articles offering areas of cooperation
REDDplus (Art. 5), Mechanisms (Art. 6), Adaptation (Art.),
Climate Finance (Art. 9), Technology Mechanism (Art. 10)
- Countries are not left alone, but have to move forward

➤ *PA provide for transition*

- NDC >
Economy wide targets (BRA/GER)
- New mechanisms >
building on the experience of the Kyoto Mechanisms



Reasons for Mechanisms

Underlying principles: bottom-up process, voluntary use and inclusiveness

NDCs are the reference point

- Mechanisms should not undermine the unconditional target of a host country: delivering the domestic contribution
- Mechanisms allow for the implementation of conditional NDC: the domestic part has to be determined („attribution“)

As consequence: **No issuance of credits against „BAU“-scenarios**

Two special cases:

The unconditional NDC is ambitious enough

Advanced baseline concepts (abc)

There is no coverage by NDC

abc plus activity related NDC involvement (alternatively: higher contribution to overall mitigation)



Mechanisms – PA key requirements

Art. 6.1

Ambition raising beyond the existing NDC

Art. 6.2/6.3

Guidance

Art. 6.4

Rule, Modalities and Procedures (MRP)
Private Sector Involvement

Art. 6.5

Avoidance of double counting in seller and buyer countries

Art. 6.8/6.9

Established in the PA, Workprogram



GER Early activities - examples

➤ **Concrete emissions reduction
(investments and preparation of
mitigation activities)**

NACAG

RE carbon related feed-in

Energy efficiency the electricity grid

➤ **International cooperation**

UNFCCC

CIACA – support for countries)

WB

Real emissions reductions: PAF, TCAF

Dialogues and capacity building: PMR,
CPLC

➤ **Dialogues**

to facilitate UNFCCC
negotiations

on controversial issues

TCTSD

open for Art. 6 negotiators

Ministerial Declaration

Country

on Environmental Integrity

SD Dialogue by UNEP/DTU
and others

CDM - transitioning



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Carbon Pricing

Gateways between domestic and international
cooperation opportunities