

Policy Mapping and Interactions. General Considerations and the EU ETS Approach

SENER – SEMERNAT – PMR Technical Workshop

**» Emissions Trading Schemes (ETS): Sharing International Experiences
and Lessons to Inform the Development of Mexico's ETS «**

**Dr. Felix Chr. Matthes
Mexico City, 8 May 2014**

- **Need for and suitability of an ETS**
 - Is there a policy gap?
 - Does the flexibility of an ETS offer efficiency gains (heterogenous abatement costs, inter-sectoral & inter-temporal flexibility)?
 - Does a cap & trade instrument fit into the political and regulatory environment/traditions?
 - With a view on the cap dimension (target-driven policies)
 - With a view on the flexibility (trading) dimension
 - With a view on the governance dimension
- **Sectors fundamentals relevant for the (planned) scope**
 - Sectors in a competitive environment (with/without ability to pass-through carbon costs – relevant for the carbon leakage)
 - Sectors in a regulated environment (with/with limited/without ability to recover carbon costs – relevant for effectiveness & efficiency)
 - Relevant for scope, point of regulation, allocation & other compensation

- **Policy interactions**

- Effects of other/complementary policies
 - Reinforcing effects, emission abatement from other policies (e.g. energy efficiency, renewables etc.) – to be reflected for cap setting, prices
 - Countervailing effects for emission abatement (subsidies, regulatory barriers)
- Effects on other policies or policy goals
 - Distributional effects (e.g. free allocation, windfall profits, spending of auctioning revenues)
 - Reinforcing effects (e.g. spending of auctioning revenues for innovation, industrial policy)
 - Ancillary benefits (e.g. other environmental benefits, energy security)
 - Fiscal policy implications
 - Competition policy & sector regulations

- **Starting point at the turn of the century: a policy gap**
 - Anticipation: additional policies needed to meet the Kyoto targets
 - Failure of the attempt to establish an (EU-wide) energy-/carbon tax
 - Increasing interest in markets and market-based instruments
 - Overlapping interests of the “cap camp” and the “trading camp”
- **Strong efforts to expand and strengthen the internal market**
 - Large and increasingly integrated market (even beyond the EU: EEA)
 - Electricity and gas market liberalisation (1996/1998) – no more (GHG emission-relevant) regulated sector left
- **Distributional effects**
 - Minor issue in the beginning
 - Major driver after significant windfall profits occurred
 - Allocation as a highly flexible mechanism to deal with distributional issues

- **Complementary policies and the policy mix**
 - 2005-2020: an integrated set of targets for GHG emission reduction (mandatory), renewable energy (mandatory), energy efficiency (indicative), consistently reflected in the EU ETS design (ex ante)
 - 2020-2030: (probably) an integrated set of GHG emission reduction and renewable energies (both mandatory at EU level), (hopefully) consistently reflected in the EU ETS design (ex ante analysis as well as with the proposed Market Stability Reserve)
 - Significant spending of revenues from allowance auctions for innovation at EU level (NER300)
- **Lessons from the (ongoing) financial and economic crisis**
 - Certain degree of flexibility is needed to reflect a changing macroeconomic environment – and in future the effects of complementary policies?
 - Tensions between certainty on (long-term) targets (policy makers, investors in durable assets) and some price certainty (operators, investors) must be reflected (also in the design of the scheme)

Cap-setting and Allocation General Considerations and the EU ETS Approach

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- **Cap-setting is the material core of an ETS**
 - Essentially a political decision
 - However, some implementation issues go beyond politics
 - Organization of the cap: duration and number of periods (memo item: banking and borrowing in an uncertain world)
 - Effects of complementary policies need to be reflected
- **Cap-setting approaches**
 - Fixed caps (textbook-style, single-period, multi-period)
 - Vintage caps (allowances will be discounted in case of banking)
 - Corridor caps (a part of allowances is only made available depending on certain triggers)
 - Index caps (caps depend on certain fundamentals, e.g. GDP)
 - Hybrid caps (allowances from new entrants reserves do not enter the market if not issued)
 - Key issue: What kind of uncertainty (target, price) is more acceptable?

- **Allowance allocation is the political core of an ETS**
 - Free allocation vs. auctioning vs. hybrid approaches
 - Motivations/legitimations for free allocation (will change over time)
 - Compensation for devaluation of (existing) assets
 - Remuneration of early action
 - Combatting carbon leakage (one of the options)
 - Solving distributional issues (or buy-in certain stakeholders)
- **Free allocation – has efficiency impacts and is not only on distribution**
 - Grandfathering vs. benchmarking
 - Updating elements (ex-post adjustments, new entrants, plant closure)
 - Exclusively to regulated entities or also to third parties?
- **Auctioning – not only a revenue generating allocation mechanism**
 - A non-distorted price signal & most comprehensive incentives
 - A price discovery mechanism (may be crucial for market initialization)

- **Changing approaches to cap-setting**
 - Pilot phase (2005-2007): 3 years cap, borrowing within the period, no banking, essentially left to the Member States: huge over-allocation
 - 1st phase (2008-2012): 5 years cap, borrowing within the period, full banking to subsequent periods, left to the Member States but strong Commission intervention, structural scarcity but huge surplus as a result of economic and crisis and offset inflow (fully bankable!)
 - 2nd phase (2013-2020): borrowing within the period, full banking to subsequent periods, three major innovations
 - Continuous contraction of the cap (linear reduction factor) – also beyond the period: a transparent long-term trajectory
 - A cap for free allocation (based on the initial share of free allocation in total cap and the linear reduction factor)
 - A single EU-wide cap
- **Emission reductions from complementary policies sufficiently reflected, effects of offsets underestimated (prices & quantities)**

- **Changing approaches to allocation**
 - Pilot phase (2005-2007): mainly free allocation (grandfathering), remuneration of early action as an major issue
 - 1st phase (2008-2012): mainly free allocation (grandfathering)
 - 2nd phase (2013-2020): two major innovations
 - Auctioning (sealed bid, uniform price) as the standard approach (>50% of allocation, no more free allocation for the power sector)
 - Free allocation: benchmarking
 - based on relatively few product-based benchmarks (a huge success – it can be done!) and historical production data
 - adjusted for exposure to carbon leakage and steadily declining (phase-out pathway for non-leakage sectors, a steadily contracting cap for total free allocation – reflected by system-wide adjustment factor for free allocation)
- **Continued approaches: free allocation strictly ex-ante, allocation to the point of regulation only (large point sources)**

Auctions and the Use of Revenues. General Considerations and the EU ETS Approach

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- **Different perspectives on auctions**
 - Auctions provide the least distorted carbon price signal (at least in an ETS with direct or indirect updating elements)
 - Auctions provide revenues which can be used for different purposes
- **Auction designs**
 - (Robust) standard approach for ETS: Sealed-bid, uniform price, using standard platforms for auctions
 - Other auction designs might be considered for specific ETS designs (especially if based on vintages)
- **Use of revenues**
 - The “Double Dividend Approach”: using revenues to lower labor costs
 - The “Transformation Approach”: using revenues to support energy efficiency, renewable energy and/or other mitigation measures
 - The “No-Earmarking Approach”: using revenues as additional income to the public budget

- **Transition to large-scale auction from 2013 onwards**
 - Approx. 50% of allowances are auctioned
 - After some government-run auctions the auctions are now run by energy exchanges
 - Given the liquid secondary market, the price discovery by auctions is of less importance – simple auction designs
 - Now major problems by now
- **Use of revenues**
 - Left to the Member States in general (given the strictly limited mandate of the EU on fiscal issues)
 - Exemption: auctioning of 300 mln allowances from the New Entrants Reserve (NER300) to support CCS and other innovative technologies
 - Beyond this different approaches in different Member States: Germany e.g. uses all revenues from auctions for the Energy and Climate Fund (technology and innovation support, compensation of energy-intensive industry for indirect CO₂ costs, etc.)

Cost Containment Measures and the Use of Offsets. General Considerations and the EU ETS Approach

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- **Different perspectives on cost containment measures**
 - The conventional perspective: capping the (potential) costs of the scheme
 - The other (complementary) perspective: safeguarding a certain minimum price level and/or a certain robustness of prices
- **Different approaches**
 - Standard approaches
 - Price corridors (price floors & price caps)
 - (Flexible/dynamic) entitlements for the use of offsets
 - (More) flexible supply of allowances
 - (More) flexible levels of supply
 - (More) flexible profile of supply
 - Avoiding the pass-through of carbon costs
 - Updated allocation of (free) allowances

- **Different perspectives on offsets**
 - Primarily as linking mechanisms (domestic & international)
 - Primarily as specific cost containment mechanisms
- **Fungibility of offsets for compliance purposes**
 - Quantitative restrictions
 - Qualitative restrictions
 - Project types
 - Origin
 - Other qualifications
 - (Potential/conditional) exchange rates (e.g. in the framework of cost containment mechanisms)

- **Specific cost containment measures have rarely been used**
 - EU stuck consequently with the ex-ante allocation approach: output-based updating distorts the carbon price signal (and the efficiency of the scheme) significantly
 - An (implicit) carbon price floor was introduced unilaterally by the UK (planned escalation of the price floor was cancelled in 2014)
- **However, new approaches are on the agenda**
 - Commission proposal on a Market Stability Reserve (MSR)
 - Introduction of a new indicator: “Allowances in circulation” (AiC)
 - If AiC exceeds a pre-defined threshold, a certain share of the AiC is shifted to the MSR (deducted from the auctioning budget)
 - A pre-defined number of allowances from the MSR will be released for auctioning
 - if AiC is below a pre-defined threshold
 - if a pre-defined price trigger (trifold average price of the two preceding years) is met

- **EU ETS represented the largest demand for (international) offsets**
 - Approx. 1 bn units surrendered, additional entitlements of approx. 500 mln units still in force
 - Main part from CDM, JI credits (part of it “domestic”) represent a small share
 - UNFCCC credits only
- **Use of offsets has been subject to restrictions**
 - Quantitative restriction: max. 50% of the (absolute) emission reduction efforts, entitlements to Member States and installations
 - Qualitative restrictions
 - Some project types excluded, more restrictive over time (e.g. nuclear, F-gases)
 - In future: credits from LDCs only
 - No exchange rates
- **Future approaches on the use of offsets within the EU ETS are unclear/controversial**

Key Technical Components: Monitoring, Reporting & Verification, Data, Registry. General Considerations and the EU ETS Approach

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- **Data are the technical core of the ETS – for different dimensions**
 - Cap-setting (there are always differences between top-down and bottom-up data), (free) allocation, compliance
 - Memo item: data represent economic values in an ETS-framework – this changes completely the approaches to monitor/use data
- **The MRV framework (procedures, guidelines, accreditation etc.)**
 - Must ensure completeness, accuracy and (time) consistency – and needs to deal with the respective conflicts (consistency over time)
 - High quality third party verification is key
 - Sufficient lead-times needed – can avoid many take-off problems
- **Registries as the gear of the scheme**
 - Data reporting, allocation, compliance [,trading]
 - (Speed) requirements from trading & crime must be reflected

- **Lacking lead-time created major problems for the take-off**
 - Over-allocation in the pilot phase was also a data problem
 - Time-consistency of data (allocation, compliance) is crucial
- **Comprehensive guidelines were developed**
 - Robust definition of installation as a major challenge for take-off
 - Real-world problems occur over time and must be reflected in dynamic processes (accountability vs. dynamic improvement needs)
- **Concept of monitoring plans worked well**
- **High quality data reports require high quality data verification which strongly depends on high quality verifiers**
 - Training and accreditation of verifiers is crucial
 - Strong ties to existing infrastructures are extremely valuable
- **Registries (software & operations)**
 - Interactions with trading to be reflected (pragmatic solutions available)
 - Cyber crime as an unexpected challenge

Institutional Arrangements for ETS. General Considerations and the EU ETS Approach

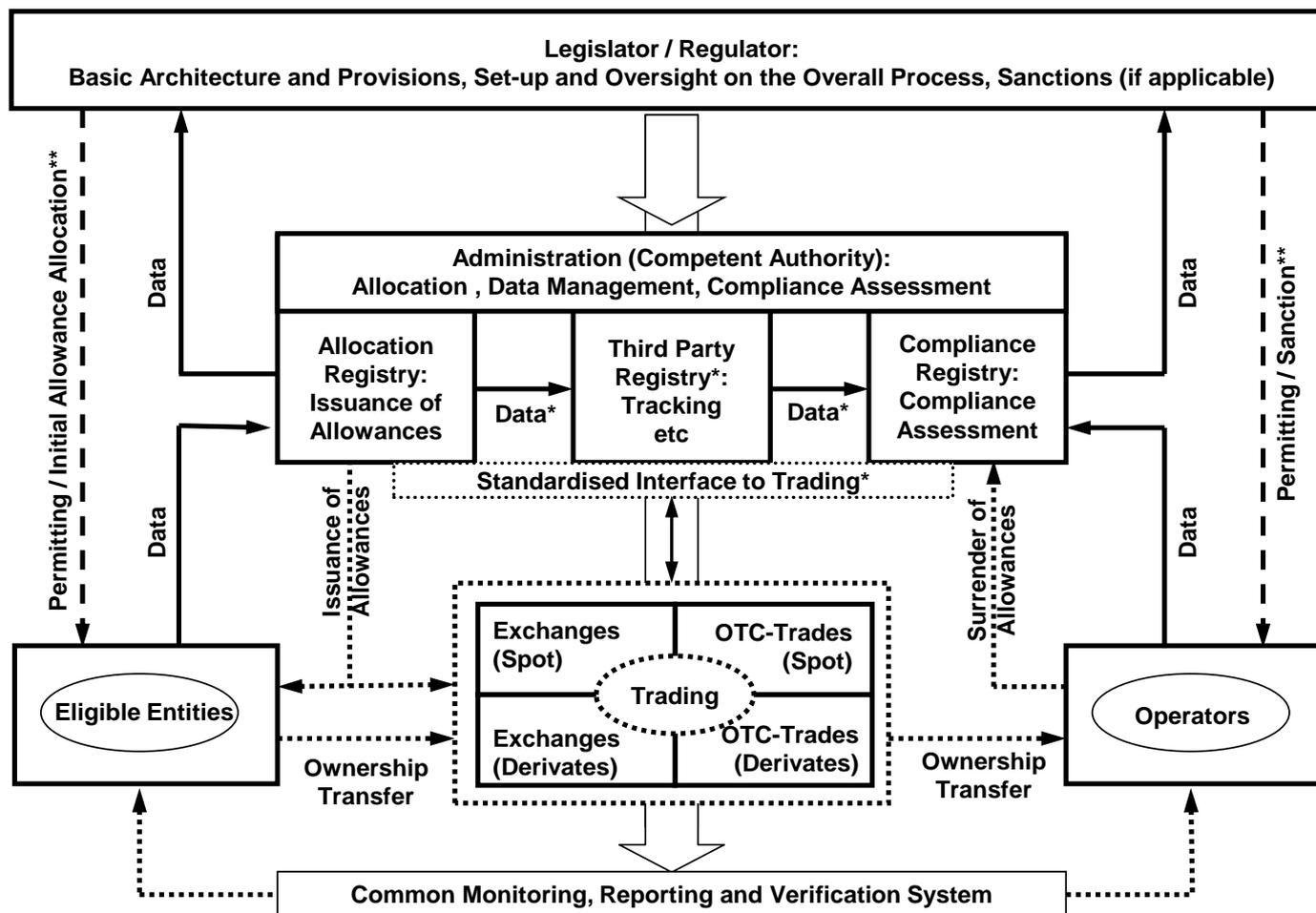
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Institutional Arrangements

Different issues to be reflected



* optional, in case of third party involvement or tracking of trades only
 ** could also be subject to the Competent Authority

- **Clear separation of tasks, processes and definition of transparent interfaces is essential**
- **Making use of existing (institutional and legal) infrastructures is often (but not always ...) valuable**
- **Third-party involvement for technical issues of the EU ETS (training, accreditation, verification, auctioning, trading, clearing, etc.) has been efficient**
- **However, a strong agency at the center is crucial for the broad range of implementation issues**
- **Markets are sensitive to (leaked) information, this has been a fairly new experience for environmental regulators**
- **Market oversight needs to be addressed from the beginning, large-scale ETS has attracted some crime (as for all easily tradable goods and commodities), from allowance thefts to VAT fraud**
- **Financial and tax regulators should be brought in early**
- **The institutional set-up requires (mainly upfront) efforts but is manageable, the transactional costs are relatively low**

Enable Trading and Business Preparation. General Considerations and the EU ETS Approach

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Enable trading

Different issues to be reflected (1)

- **Trading is an essential element of an ETS, market initialisation is an important issue for the take-off phase**
- **Who can own allowances (in other words: hold an account)**
 - Regulated entities
 - Entities eligible for (free) allocation
 - Other entities
- **What is the arrangement for the trading platform**
 - Mandatory trading platforms
 - No mandatory trading platforms: exchanges & OTC (over the counter)
 - Memo item 1: pre-qualification for participation in auctions
 - Memo item 2: pre-qualification for trading at exchanges
 - Memo item 3: market oversight

- **Eligibility for trading is an important and sensitive issue**
 - Abuse of market power is a standard concern (especially in the initial phase)
 - What is the appropriate reaction
 - More market participants (and more liquidity) or
 - Less market participants (and less liquidity)
 - The demand for financial (hedging) products related to emission allowances is a crucial determinant for the eligibility for trading
 - If the market requires hedging products, intermediaries must be part of trading or
 - Should the regulator provide hedging products (early auctions)

- **No restrictions on ownership: each person or legal entity can open an account and own allowances**
- **No restrictions on trading: trading via exchanges and OTC is possible**
 - The majority of OTC trades is cleared via exchanges (without any mandatory provisions on that)
- **Outsourcing of auctions to existing exchanges: participation in auctions requires the same pre-qualification than any other trading at these exchanges, the standard procedures for market oversight apply (the ETS regulator reserved the right to set up tighter regulations)**
- **The broad range of eligible participants for trading has stabilised the market significantly, a liquid secondary market emerged relatively quickly (mainly but not exclusively driven by the hedging needs of the electricity sector)**
- **The concerns (from many sides) on abuse of market power have not been confirmed**
- **Allowance trading has been settled quickly at the structures and platforms of energy trading**

- **The need for preparation has four dimensions**
 - Energy and environmental regulators have often limited experiences to deal with commodities and the respective environment
 - Regulated entities have often a lot of experience to deal with such commodities but need to integrate the processes of an ETS value chain in their management and controlling processes
 - Respective service providers are of crucial importance but also need to learn (a lot)
 - Political constituencies need to learn about the fundamental mechanisms of an ETS and its implications
 - All four groups need lead-times, information, guidance and practical experiences

- **Targeted preparatory activities for regulators, regulated firms and third party service providers is of outstanding importance**
 - Piloting is an extremely valuable approach
 - Early participation of the relevant parties leads to a win-win-situation (training vs. exploration of real world challenges/early warning)
 - All (!) parties need significant lead-times