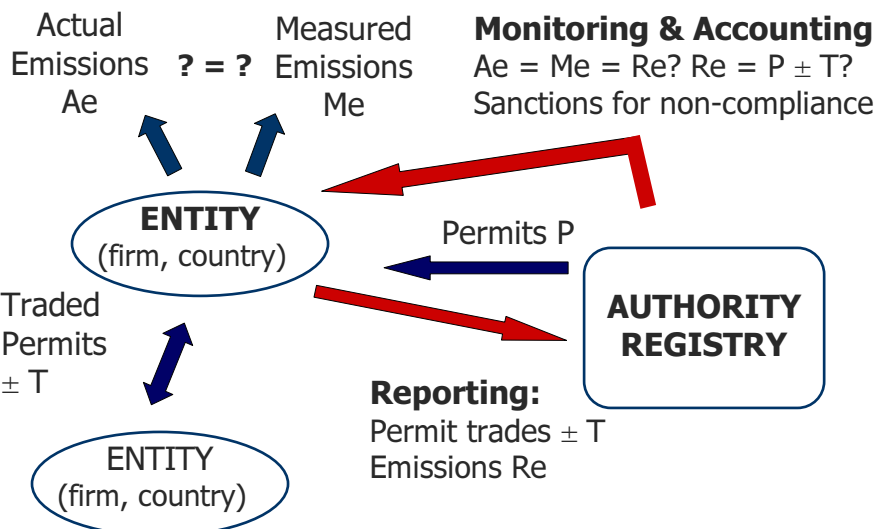




CATEP Synthesis Paper

Monitoring, Accounting and Enforcement in Emissions Trading Regimes

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What have we learned from CATEP?

- **Monitoring, accounting & enforcement in existing and planned ET regimes**
 - U.S. SO₂ and RECLAIM Programs
 - **Lessons learned from experience**
 - **Advantages & disadvantages of certain design features**
- Monitoring, accounting & enforcement in international ET regimes
 - International standardization
 - The commitment period reserve



Lessons learned Monitoring & Accounting

- Avoid mistakes & minimize opportunities for cheating
 - by stringent technological & process requirements for facilities, automated systems
 - by guidelines for inventories
- Registration of permit trades necessary
- Integrated computer systems create open public process for allowance recording



Lessons learned Sanctions

- A successful ET program requires a carefully constructed set of sanctions for non-compliance
 - A financial penalty per ton of excess emissions
 - A future deduction of allowances
 - Exclusion from trading



Lessons learned Penalties

- Optimal penalty design?
- Permit price is the opportunity cost of cheating
- Expected penalty has to be higher than permit price. Thus the penalty should be
 - the higher the lower the probability of control
 - tied to prevailing permit price
 - not excessively high to cause bankruptcies or non-participation
- Penalty should be automatic and certain



Other relevant design elements Liability rules

- Seller versus buyer liability
- Buyer liability makes sense if e.g. in international trading some nations do not enforce national schemes properly
- Buyer liability complicates the systems, creates transactions costs for participants and thus impedes trade
- With an effective enforcement system in place, seller liability is preferable



Other relevant design elements Upstream vs. Downstream

- Far less and much bigger firms participate in an upstream system: thus lower administration costs
- But upstream regime not politically feasible, so in practice downstream regimes dominate



Other relevant design elements Absolute vs. Relative Caps

- With relative cap, metric like GDP or output has also to be monitored
- Problems of tracking emissions reductions across companies with different output or within a company that changes its product mix or has varying degrees of vertical integration.
- Absolute and relative caps: gateway necessary to restrict overall emissions
- Absolute caps preferable in this context !



Other relevant design elements Linking of trading regimes

- Problems when linking ET regimes with different monitoring, accounting & enforcement systems
- Environmental Integrity
- But pressure towards harmonization
- Standardization simplifies linking => different attempts



Summary - Conclusions

Strong, comprehensive monitoring, accounting & enforcement system is pre-requisite for efficient ET regime !

- (1) Monitoring of emissions: CEMS, inventories
- (2) Reporting of emissions & trades: Importance of registries, automated systems,
- (3) Enforcement regime: well-designed penalties

Seller liability, (upstream), absolute cap,
standardized M&A&E system



Future Tasks

- Improve monitoring techniques
- Develop standardized methods
- Better understanding of dynamics of compliance and enforcement problems



**Thank you
for your attention!**

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