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Emission trading in road transport – a viable solution?

Dealing with emissions

1 May 2007, Bettina Kampman



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- Background
- Emission trading in road transport
 - design parameters
 - assessment criteria
- Assessment of various systems
- Conclusions



Background

of the presentation,
and of the topic of emission
trading in transport



CE Delft

- Independent research and consultancy organisation
- Specialised in developing innovative solutions to environmental problems
- \pm 40 staff, based in Delft (NL)
- Key themes:
 - Transportation
 - Energy
 - Economics
 - Government policy
 - Industry policy
 - Strategic consultancy





Background of this presentation

- A study for the Swedish Environmental Protection Agency
 - Identify different CO₂ emission trading scheme designs
 - All transport as well as sub sectors (road, rail, maritime shipping, air)
 - Appraise schemes based on a set of criteria
 - Scan like character



Why is this discussion relevant?

- Continuing growth of CO₂ emissions in road transport
- EU ETS is operational in industry
- EU debate and progress on
 - Aviation in EU ETS
 - Shipping in EU ETS
 - Various CO₂ mitigation policies in road transport (biofuels, cars)
- Emission trading can be a cost effective and market oriented policy instrument



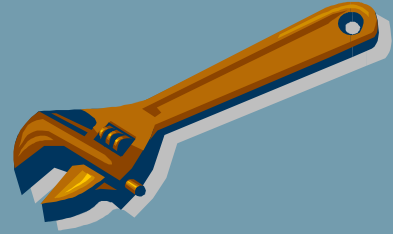
Emission trading in road transport

Design parameters and assessment
criteria





Main design parameters



- Cap&Trade ↔ Baseline&Credit
- Closed ↔ open
 - i.e. stand-alone, or linked to the EU ETS
- Road transport ↔ more modes
- National ↔ EU
- Downstream ↔ upstream
 - Trading entity: end consumers, oil companies, ...
- Emission credit allocation
 - auctioning ↔ free distribution
- Flanking policies



Assessment criteria

- Emission reduction possibilities of trading entity
- Transaction costs
 - costs of system development, monitoring, verification, transactions, ...
- Scope of emissions
- Technical feasibility
- Environmental effectiveness
- Cost effectiveness
- Innovation and emission reduction in the sector
- Effects on competitiveness
 - transport sector
 - EU industry



Other important issues to address

- Flanking instruments
 - to improve efficiency or prevent undesired side effects
- Interaction or duplication with other policy measures
 - e.g., excise duty, road charging, ...
- Alternative policy options



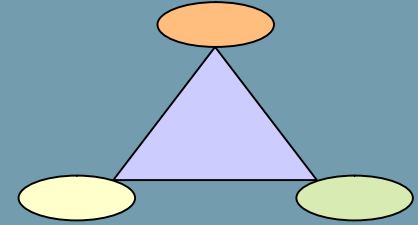
Assessment of options

Which design option scores best?





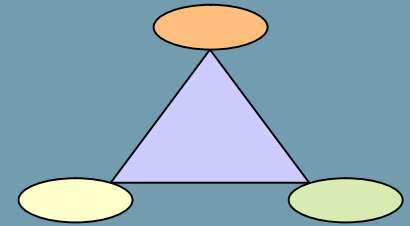
Appraisal (1)



- Emission reduction possibilities of trading entity
 - End consumers would be best
 - Oil companies can only increase share of biofuels, or increase fuel prices
- Transaction costs
 - Much higher when end consumers are trading entity
- Technical feasibility
 - End user systems technically complex



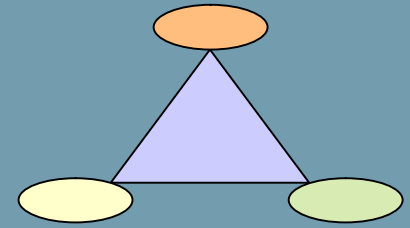
Appraisal (2)



- Environmental effectiveness
 - Cap&Trade ensures meeting the target
 - Closed scheme guarantees reduction in transport sector
 - Open scheme may lead to cost increases in industry (competitiveness, risk of leakage)
 - Effectiveness may be highest in closed scheme
 - Higher CO₂ price acceptable in transport
- Cost and cost effectiveness
 - All parties affected will look for most cost effective CO₂ reduction option
 - Open scheme: cost effectiveness mitigation options outside transport may be used
 - Downstream trading entity: high transaction costs



Appraisal (3)



- Transport sector innovation
 - Closed scheme more favourable
- Effects on competitiveness
 - In transport: limited in case of EU scale
 - Probably significant impact on industry in case of inclusion in EU ETS
- Flanking instruments
 - Can facilitate meeting the cap, prevent undesired side effects
 - e.g., biofuel obligation, CO₂ regulation of new cars, infrastructure and spatial planning policy, ...



Alternative policy options

- Increased excise duty on fossil fuels or CO₂ tax
 - may have same effect
 - if the increase = CO₂ emission credit price
 - less transaction costs
 - no guarantee that CO₂ goal will be achieved
 - provides cost certainty to industry (if stable)
- Biofuel obligation + regulation CO₂ emissions new cars
 - no guarantee that CO₂ goal will be achieved
 - does not promote efficient logistics, mileage reduction, etc.



Conclusions

Emission trading – a viable solution?



Emission trading – a viable solution?

- Yes, because
 - it provides a means for government to directly control CO₂ emissions in transport
 - it promotes cost effective CO₂ emission reduction
 - it rewards all possible abatement options
 - it guarantees that CO₂ emission goals are met
 - costs to government can be limited
 - public acceptance may be higher than with a CO₂ tax on fuels
 - it is transparent, directly linked to climate goals
- But...



Emission trading – a viable solution?

- But...
 - a downstream system will lead to high transaction costs
 - with an upstream system, supporting policies are essential
 - oil companies have limited control over fuel consumption
 - increasing excise duties may have the same effect
 - however, CO₂ goals may not be met
 - various design 'details' need to be worked out further
 - these will have significant impact!



What option is best ?

(my current personal opinion)

- Trading entity: oil companies
- No link with EU ETS
 - EU industry would be affected (competitiveness, carbon leakage)
 - This will allow higher CO₂ prices in road transport
 - Promotes innovation and action in the transport sector
- EU wide
 - UK might start on its own
- Auctioning of credits

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Thank you!

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