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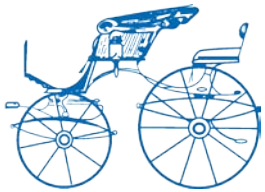

Strategies to include transport in CO_2 emissions abatement policy: Potential for emission trading

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Introduction

- GHG emissions in the EU, reduction objective -20% or -30% by 2020, but more by 2050…
- transport *must* takes its share
  - technology will not "save us" within 20-30 year timeframe
- aviation to be included in the ETS from 2011
- maritime transport under scrutiny by the EC
- what about land transport?
  - road accounts for ~93% of EU national transport emissions
  - currently left to the responsibility of Member States (MS)
  - trading scheme or fuel CO2 taxation?

Outline

- Limits of fuel taxation
- Cap-and-trade schemes, pros and cons
- Proposals for downstream cap-and-trade schemes
- How to involve other stakeholders
- Conclusion

Fuel tax harmonisation: a dead-end

- unanimity is required among MS on all decisions regarding taxation
- there is no mechanism to deal with potential "free rider" behaviour of a MS within the “EU bubble”
- acceptability issue regarding basic need for mobility, fiscal revolt
- moreover:
  - aviation to be shortly included in the ETS, maritime...
  - rail (electricity-based) transport already included through energy providers

Transport and cap-and-trade schemes?

- what is a cap-and-trade scheme?
  - fixation of quantified constraints (quotas)
  - rights (or permits or allowances) *allocated* or *auctioned* to agents
  - agents authorised to transfer them ("*tradable* permits")
  - penalties to ensure conformity of actual emissions to the rights hold by the agent
- trading guarantees the minimisation of *global* abatement cost (i.e. efficiency)
- but separation of efficiency and equity issues

Pros and cons of cap-and-trade vs taxation

- potential to circumvent the need for unanimity from MS
- potential to increase the acceptability of fuel "rationing" through free allocation

but…

- in case of transport, fear of huge administrative costs
- so, proposals for "upstream" approach, limited to either fuel importers or refiners, or depots owners

Limits of an upstream approach

- risk of added complexity:
  - existence of the ETS,
  - downstream approach in already on tracks for air transport,
  - possibly maritime in the near future
- the opportunity cost of allowances would be passed on the end-user as a conventional tax
- incompatible with free allocation:
  - windfall profits for the recipients which would not be those submitted to abatement costs

⇨ Is there a potential for downstream approaches?

Tradable fuel rights for freight transport

- rights to be returned when fuelling at the pump (use of smart cards) or on delivery in company tank
- rights transfer or payment negotiated between shippers and for-hire carriers, incentives on both
- possible free allocation to carriers (fixed per truck, on historical emissions for rail and air)
- no free allocation for shippers (auctioning)
- scope: EU, all modes (road, rail, river, air and maritime) *(Raux & Alligier, 2007)*

Tradable fuel rights for personal travel

- possible allocation of free "fuel rights" per capita
- rights to be returned in proportion of carbon content of fuel purchased
- monitoring when fuelling at the pump with ATM / smart cards
- example: France, 2006, 30 billion litres of fuel, ~500 rights per capita ~ 6,000 km *solo* driving
- selling of unused rights = incentive to "do better"
- "necessary" travel not affected in general (e.g. commuting between 24% and 40% of car mileage according to the income)

(Raux & Marlot, 2005)

Implementation issues

- no obligation to participate in the market
  - but for fair treatment of those not taking part in the market: "CO2 tax" on fuel
- advantage: no need for overnight implementation
  - need to progressively modify ATMs at petrol stations
- the "CO2 tax" is also a "safety valve":
  - maximum price of allowances on the market
  - addresses price volatility
- fixed allocations for households and hauliers
- monitoring directly “at the pump”, avoid complex declaration of emissions

Other stakeholders?

- apart from transport end users (see above)…
- the road vehicle industry which influences specific emissions of *new* cars and trucks
  - emissions standards in EU and other countries
  - address only new cars, 15-20 years to fully develop
- local governments which control the supply of transport infrastructure and services, and land use planning

How to involve local governments?

- how to measure their "CO_2 transport" performance?
- basic difficulty: *mobile* sources, and…
- administrative "vanilla-slice" in a given area
- need to reflect specifically the impact of *local* transport policy on distances travelled by autos
  - which depends basically on time / speed and pricing… and on alternatives (e.g. public transport)
- proposal for a "city carbon index"
  - index of overall volume of auto traffic, with distances measured "as the crow flies"

(Raux, 2009)

How a “city carbon index” would work?

- combined with standard emission factor per km, would give an index of emissions development from year to year: a transport “carbon index”

= indicator of the achievement of local government transport policy regarding CO2 emissions

- but also could be used for quotas debits / credits…
- according to a baseline negotiated with the central government
  - burden sharing between end-users, road vehicle industry and central / local governments

Conclusion and perspectives

- TFRs easier to implement than tax harmonisation
- smoother connection with other emission markets in the world
- potential for allocation of free fuel rights: pragmatic response to equity issues + additional incentive to further abatements
- opportunity of *actually* include transport in the abatement effort… at the "price" of implementation costs
- current research project (CarbonAuto): explore attitudes and behavioural reactions of French households

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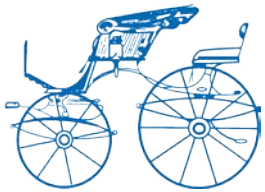

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