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The Policy Path to Low Carbon Societies

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Carbon Pricing

Lessons and Limits

A normative value of carbon as a pillar to policy action

- Textbook rationale well established
 - Uniform pricing to equate marginal costs at any point in time
+ Hotelling rule for pricing dynamics
- Policy implication : **not pricing** but a normative assessment of the least-cost option
 - As a yardstick to explicit mitigation policies
 - As a signal to policymakers on any other action
 - To shape the anticipations of private agents

French and British reports on carbon valuation by CAS and DECC, 2009

- Comparable carbon values (2008 € per ton CO₂)
 - €36 vs €30 *and* €70 in 2010
 - A consensus on €100 in 2030
 - €200 vs €277 in 2050
- ...mask widely diverging assumptions
 - 2010-2020: accounting for vs notwithstanding EU-ETS (double pricing!)
 - 2030: Europe alone (-60%) vs Global action
- ...on oversimplified trajectory assumptions: Hotelling, linear (!)

Carbon pricing in a second best world

- EU: separate commitments for the ETS and non-ETS emissions + drastically limited trade = **differentiated prices**
- But **efficiency loss not systematic in a second best world with**
 - Pre-existing tax distortions
 - Exposure to international trade
- Possible trade-off between differentiated pricing and **carefully crafted recycling policy**

Limits to carbon pricing

- In the models... but what does it mean?
- Impact on R&D hampered by
 - knowledge spillovers
 - lack of infrastructure
 - fragmented technological markets
- Impact on demand and tech. adoption limited by
 - information on technologies sparse and fragmented
 - investment constraints
 - misaligned incentive (owner/tenant, driver/firm...)

Addressing market failures

The case for policies and measures

Grey literature: one hundred unassessed policy measures... on energy supply

- Levelling the playing field (with conventional energies and between renewable options)
- Lifting institutional barriers to power production and access to the grid
- Adding feed-in tariffs
- ...and legally binding targets ?
- Ambitious targets conditional to improvements on E storage, transport and distribution

Grey literature: one hundred unassessed policy measures... on energy demand

- Buildings
 - construction and renovation standards, R&D on passive houses, mandatory requirements at letting/selling, EPCs
- Transportation and particularly passenger cars
 - systemic approach, emission standards, bonus/malus to decrease size, equipment standards, tighter speed limits...
- End-use equipments
 - environmental labelling (clearly visible!), technical standards

Grey literature: one hundred unassessed policy measures... beyond E markets

- R&D support
 - energy producing and end-use equipments alike, directed or not?
 - support technologies: heat and power storage, transport and distribution; carbon sequestration?
- Public awareness campaigns
- Training programmes to adapt the labour force

All these policies and measures
are blatantly lacking
micro & macro assessment !

A blueprint for
further research

A blueprint for further research

- On a carbon value trajectory
 - Accounting for the core dynamics of demographics, fossil fuel markets, technical change, energy K stocks
- On the *terra incognita* beyond first best policy design
- On a microeconomic elicitation of incentive overlaps
- On an integrated framework of analysis