Session #3: How to devour the carbon pricing elephant

Michael Pahle (PIK)

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P I K

Germany seems to move away from *first best*

- Economics 101: equal marginal abatement costs in all sectors ($c'_i = c'_j$) minimizes total costs

→ Economy wide climate target, uniform carbon price (*first best*)

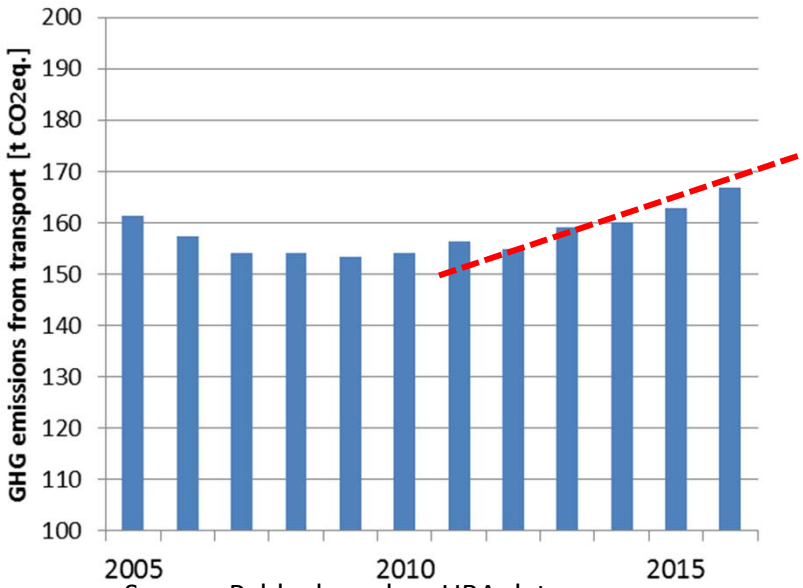
- Germany has only partial carbon pricing (ETS sectors), and recently even formulated **sector-specific climate targets**

Area of action	1990 (in million tonnes of CO_2 equivalent)	2014 (in million tonnes of CO_2 equivalent)	2030 (in million tonnes of CO_2 equivalent)	2030 (reduction in % compared to 1990)
Energy sector	466	358	175 – 183	62 – 61 %
Buildings	209	119	70 – 72	67 – 66 %
Transport	163	160	95 – 98	42 – 40 %
Industry	283	181	140 – 143	51 – 49 %
Agriculture	88	72	58 – 61	34 – 31 %
Subtotal	**1,209**	**890**	**538 – 557**	**56 – 54 %**

Source: Climate Action Plan (2016)

The story behind the sectoral targets

- In the past **substantial progress in power** sector, very **little progress in transportation** sector
- Policy makers were keen to establish **sectoral burden sharing**
- Why not implement **uniform carbon price** in the first place?



Source: Pahle, based on UBA data

Insert figure to illustrate high policy stringency in power sector, low stringency in transportation

Non-normative (positive) view on carbon pricing

- Policy choice is endogenous and determined by “contributions” from interest groups (Grossman & Helpman 1994, Aidt 1998)

$$G(\tau) = \Theta W(\tau) + C_i(\tau); C'_i(\tau) < 0$$

G	Government obj. function
W	Welfare function (weigthed)
C	Interest groups i contribution
τ	Carbon tax

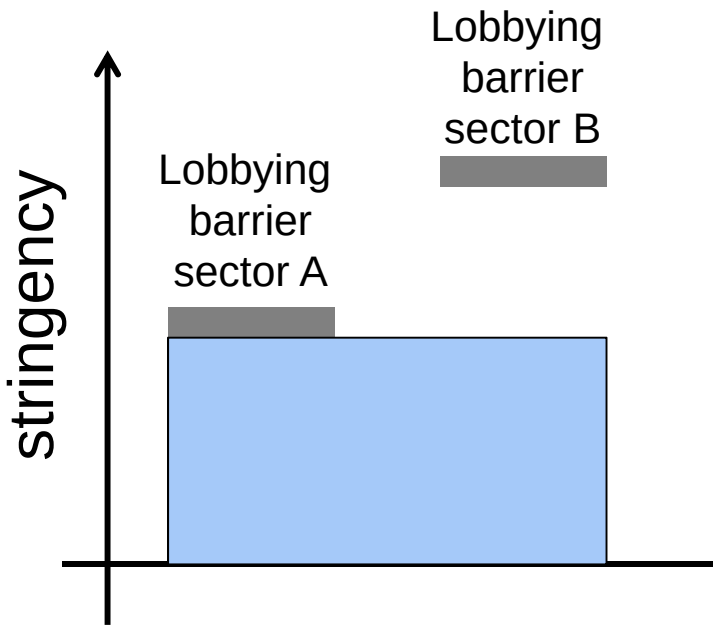
- Choosing level of uniform carbon tax influenced by **sector contributions** (and reduction thereof)
- In case of **lobby groups organization failure** (cf. Olson 1965), inefficient bias of high-contributing sectors → choice externality

→ Potential way out:

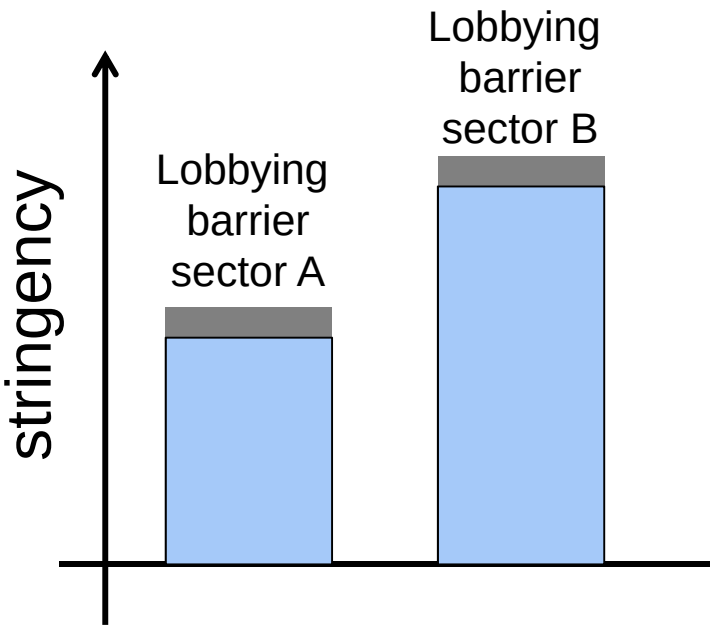
- **Differentiated** carbon prices (τ_i), i.e. sectoral policies and targets
- **Explicitly addressing** the organization failure (→ *Peter’s talk*)

Differentiated (sectoral) policies to address lobbying failures

Cross-sectoral policy



Sectoral policies



Higher efficacy, but also higher costs!

<explain that it is similar in the ETS>

- Reason: free allocations needed to “please” industry
- This may put a limit on price increases, which also effects power sector
- Use material from Dallas’ paper on *“Distribution of Emissions Allowances and the Use of Auction Revenues in the European Union Emissions Trading System”*

<sequencing perspective on ETS>

- Would it have been better if the industry sector had not been included?
  - Fragmenting political opposition, buying time to remedy loobying failure
- Or is it dangerous because this would fragment policies too much blocking the pathway to a uniform carbon price?

Contact

Dr. Michael Pahle
Head of working group "Energy Strategies Europe & Germany"
Potsdam Institute for Climate Impact Research (PIK)
Research Domain III (Sustainable Solutions)
PO Box 60 12 03
14412 Potsdam
Germany
Tel: +49 331 288 2465
Fax: +49 331 288 2570
michael.pahle@pik-potsdam.de

BACKUP

Sequencing to weigh the alternatives

- ***Policy sequencing*** *is an approach in which the barriers to future, more stringent climate policy guide current policy choices to the end of overcoming these barriers over time.*

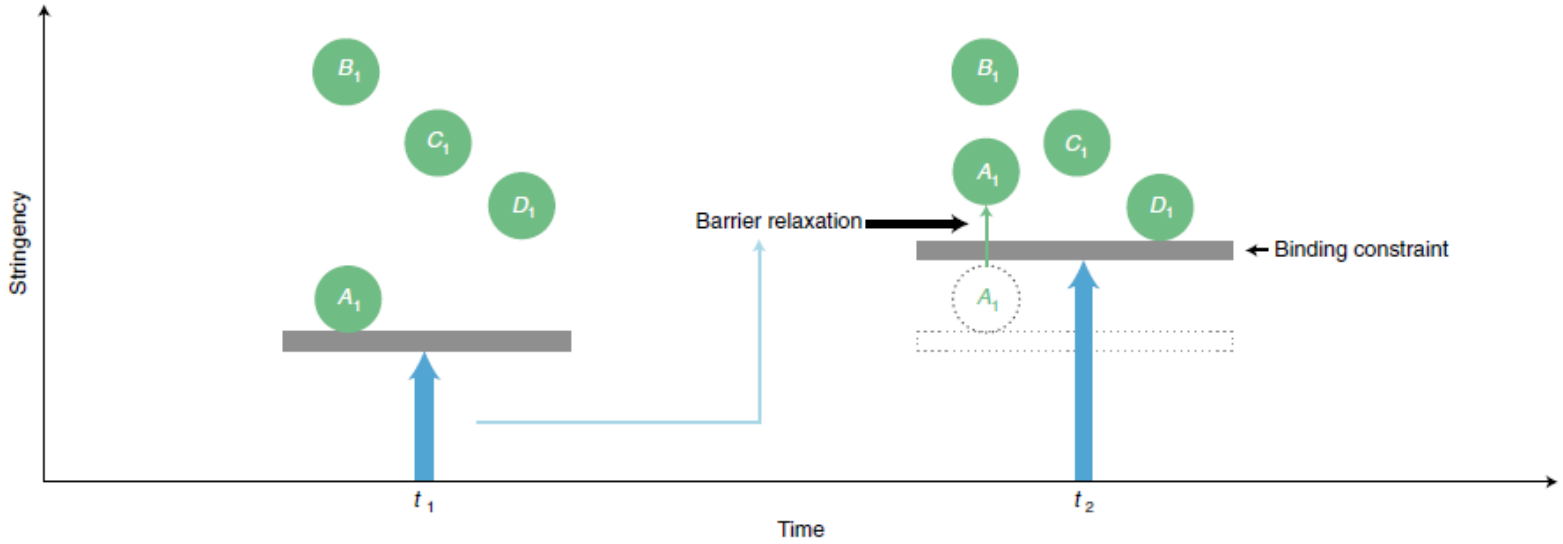


Fig. 2 | Sequencing to overcome barriers to stringency. Barriers (circles) and dynamic climate policy stringency (blue arrows) are shown for two subsequent periods (t_1, t_2). Relaxation of the most constraining barrier (here, A_1) in the first period enables increased policy stringency over time, to the level of the new most constraining barrier (D_2).

Source: Pahle et al.(2018), available here