
ROLE OF THE POLICY MIX FOR LOW-CARBON POWER GENERATION TECHNOLOGIES FOR INNOVATION

2012 Eu-SPRI Conference:

**Towards transformative governance?
Responses to mission-oriented innovation policy paradigms**

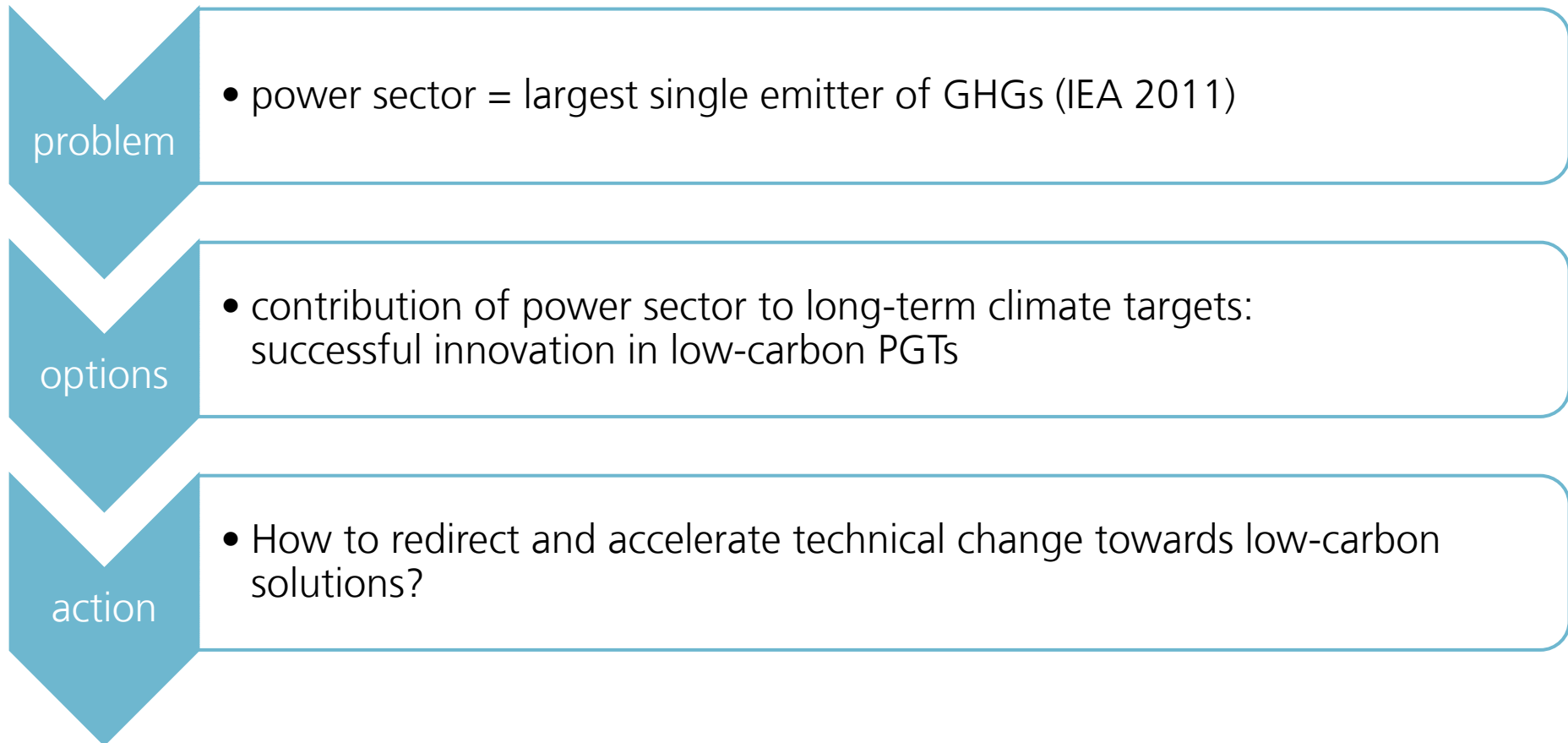
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Outline of the presentation

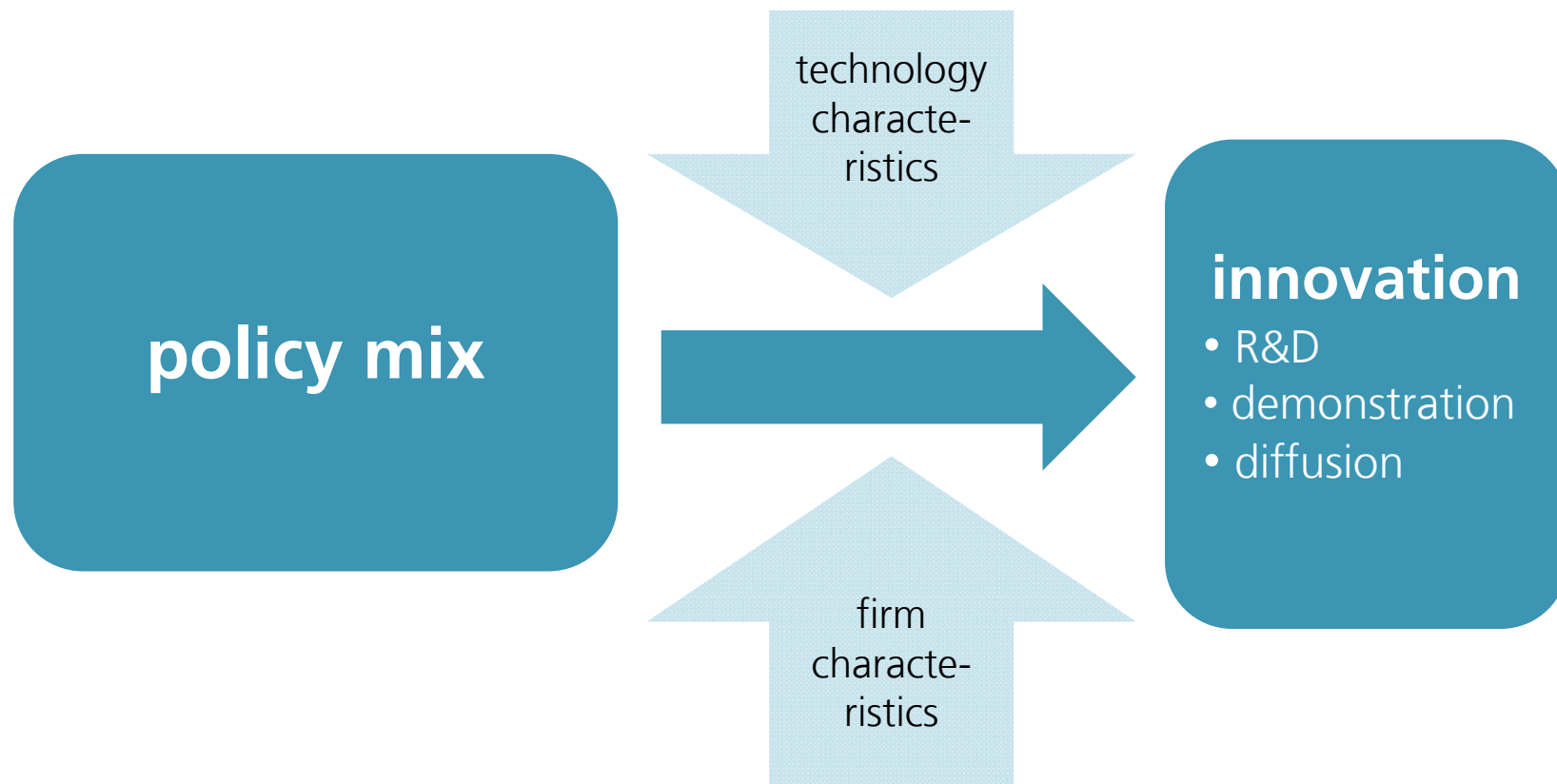
1. Background
2. Research question & research framework
3. Motivation for policy mix conceptualization
4. Policy mix concept
5. Methodology
6. Results
7. Conclusion

Background: Climate change mitigation in the power sector



Research question & research framework

RQ: How does the policy mix for low-carbon PGTs affect innovation?



Motivation for policy mix conceptualization

"...consistent and effective policy mix which is congruent to long-term targets..."

Schmidt et al. 2012

"...need for coherence, coordination, and effectiveness of policy mixes."

Nauwelaers et al. 2009

"policy mix" characteristics in the literature

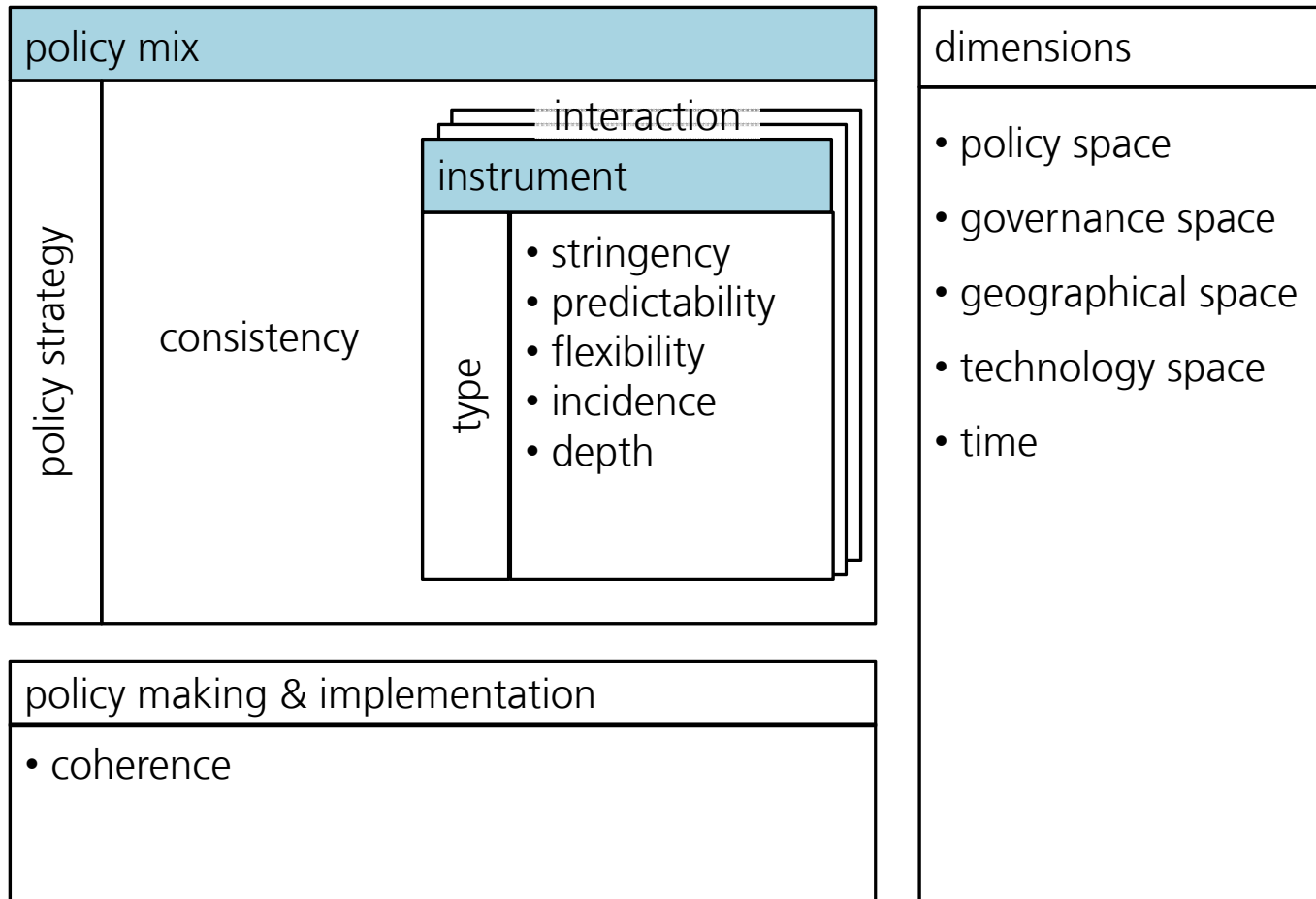
"...comprehensive, effective, economically efficient, robust, politically achievable, and inclusive climate policy mix."

Matthes 2010

"To increase the coherence of the instrument mix..."

OECD 2007

The policy mix concept



Methodology

approach: qualitative case study approach with interviews

case setting

- 2 cases/ technologies: wind offshore & CCS in DE
→ contrasting
- actors interviewed: TPs, PGs
- number of firms (interviews): 12 (19)
- timing of interviews: from August to October 2011

procedure

- preliminary research: identify cases, PMs, firms
- conduct interviews with firm representatives
- analyze interview records

Results for wind offshore: Instrument level



technology space: early diffusion phase

	EEG	KfW Program wind offshore	NER 300
instrument type	demand pull	demand pull	technology push
design features	predictability & economic incentives – <i>inno drivers</i>	enables capital access – <i>diffusion driver</i>	reduces risks – <i>demonstration driver</i>
policy implementation			long admin processes & eligibility – <i>demonstration barrier</i>

Results for wind offshore: Policy mix level



policy strategy

- 2030 wind offshore goal (DE) – **inno driver**

policy implemen- tation

- lack of coherence (HR underequipment & actions not in line with policy goals) – **diffusion barrier**

- result:
 - consistency: +
 - coherence: -



consistency & coherence needed

Conclusions

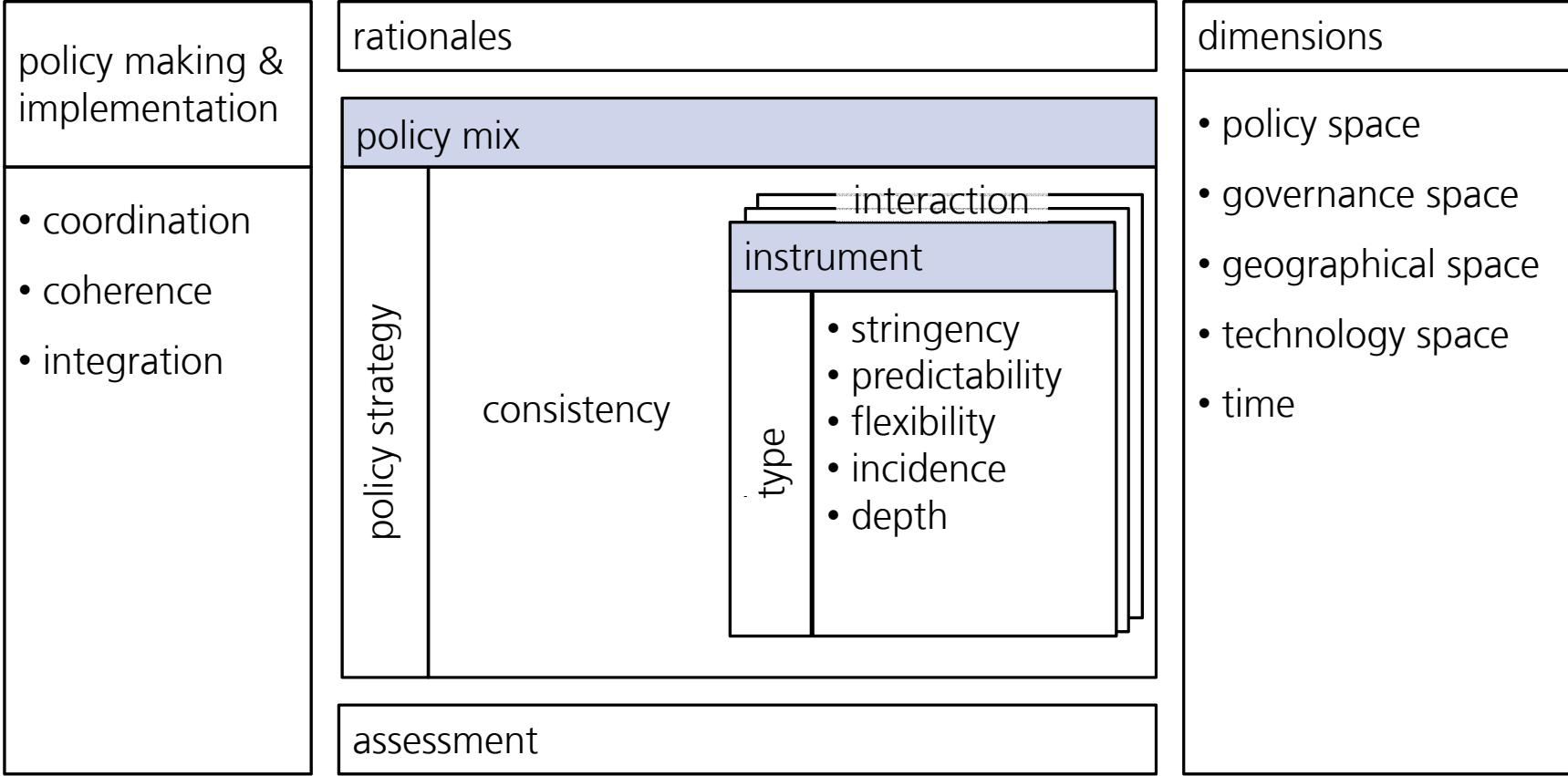
- transferability of the PM concept to other technologies: CCS, result: inconsistent & incoherent PM
- after empirical analysis: further refinement of the PM concept: characteristics, features etc.
- limitation: time (static analysis)
- future research: empirical application of the PM concept with other methodology

THANK YOU FOR YOUR
ATTENTION!

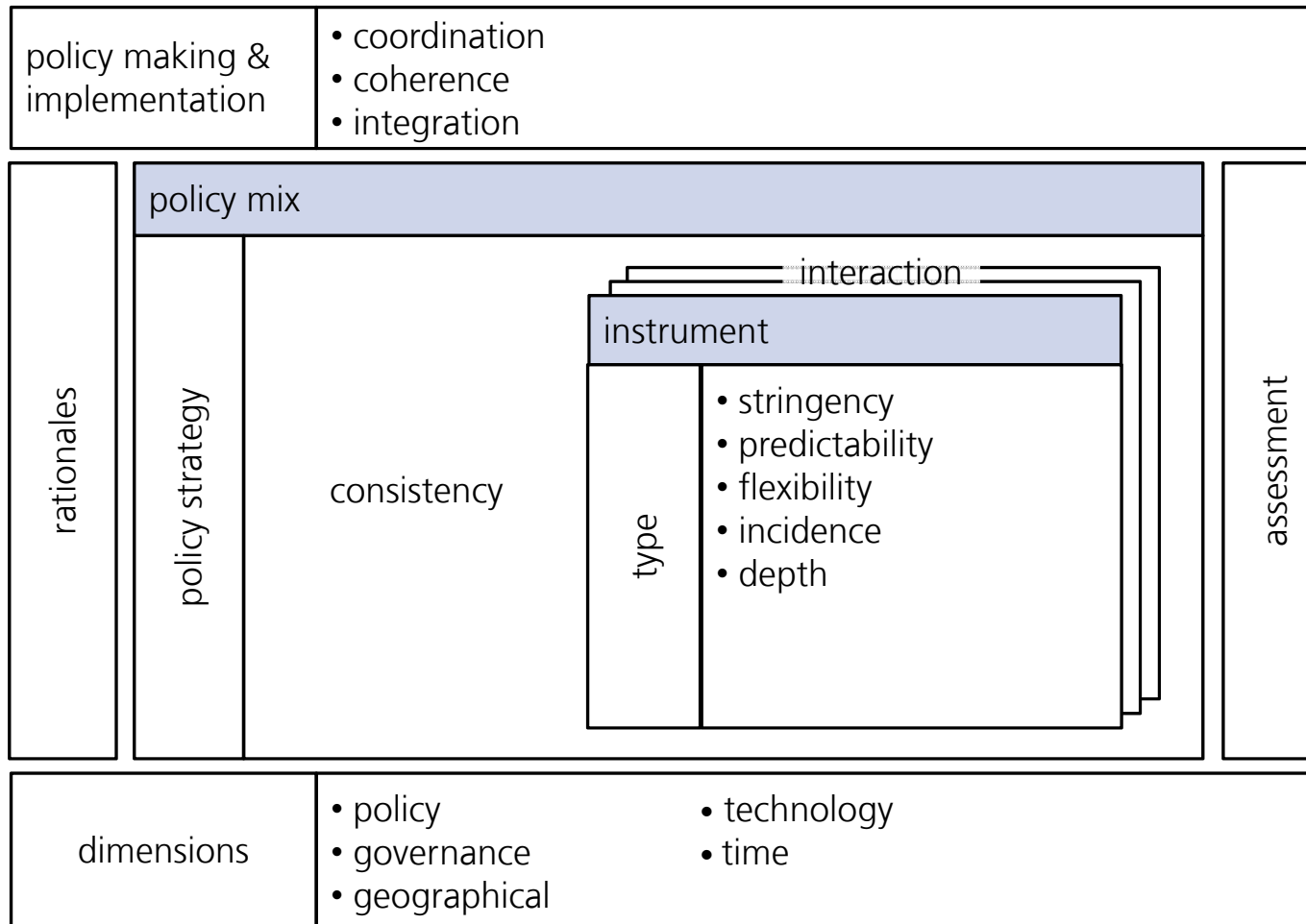
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Backup:

Alternative visualization of the PM concept (I)



Backup: Alternative visualization of the PM concept (II)



Results for CCS: Instrument level

technology space: demonstration phase

	EU ETS	COORETEC, EEPR, NER 300	EU CCS DIR
instrument type	demand pull	technology push	framework condition
design features	1) externality – inno driver 2) lack of predictability & stringency – inno barriers	address knowledge spillovers & risks – R&D and demonstration driver	legal basis for CO2 storage
coherence			DIR not implemented into German law – inno barrier

Results for CCS: Policy mix level

policy strategy:

- 2°C target, 20/20/20 targets – **inno drivers**
- negative general political atmosphere (in DE)– **inno barrier**

policy implemen- tation:

- general lack of coherence – DE level actions not in line with EU level actions and goals – **inno barrier**

- result:
 - consistency: -
 - coherence: -



CCS innovation activities greatly reduced

Backup: Methodology

	wind offshore		CCS		sum	
	firms	interviews	firms	interviews	firms	interviews
TPs	3	5	3	4	6	9
PGs	3	4	3	6	6	10
sum	6	9	6	10	12	19

Table: number of firms interviewed and number of interviews per technology and firm type