REBOOTING CARBON PRICING
- A NEW NARRATIVE AND POLITICAL STRATEGY

Michael Grubb

Professor International Energy and Climate Change Policy, UCL

Editor-in-Chief, *Climate Policy* journal

With **Karsten Neuhoff** and **Jean-Charles Hourcade**

- Some political economy observations
- The old debate – price vs quantity (and why it can't be purely either)
- A multi-pillar approach
- 'Positive carbon pricing'

If 'price carbon' is the best policy, then consider ..

"There appears to be a nearly inverse relationship between those policies that policy analysts tend to endorse as holding the greatest promise .. and political feasibility .."

- Rabe 2008, 106, As cited in Grubb et al., Planetary Economics, Ch 6: 'Pricing pollution: of Truth and Taxes'

'Carbon pricing is political suicide' - Stephan Dion, former Canadian Environment Minister and (briefly) leader of the Liberal Party: Comment after losing the General Election to Stephen Harper

Key argument: unavoidable political challenges are hugely magnified by incomplete theory and insufficient clarity about the multiple conceptions and potential roles of carbon pricing

Central challenges include:

divergence between theory and reality of 'representative economic agent(s)'

- Well informed rational economic agent in a well functioning market trusting government
  - Price is the most efficient
  - Revenues / double dividend helps offset costs
- For most voters
  - Emission reduction may be a recognisable public good, but
  - Taxation / payment is a much more pressing, visible and immediate private bad
- Divergence between national and international when 'All Politics are Local'
- 'Vikings and virtues' – the social and political conditions for 'classical' carbon pricing

What is carbon pricing For?

Price vs Quantity and the need for clarity on Objectives

- To 'internalize an externality'
- To ensure delivery of a near/medium term emissions target 'at least cost'?
- To foster low carbon investment?
- To facilitate internationally efficient responses through trade?
- To influence strategic corporate choices?
- To raise revenues 'from bads not goods'?
- … to help shape and contribute to wider policy strategy, maybe including funding efficiency or innovation programmes?

These are not the same, cannot expect acceptance or policy stability without a clear view on the objectives

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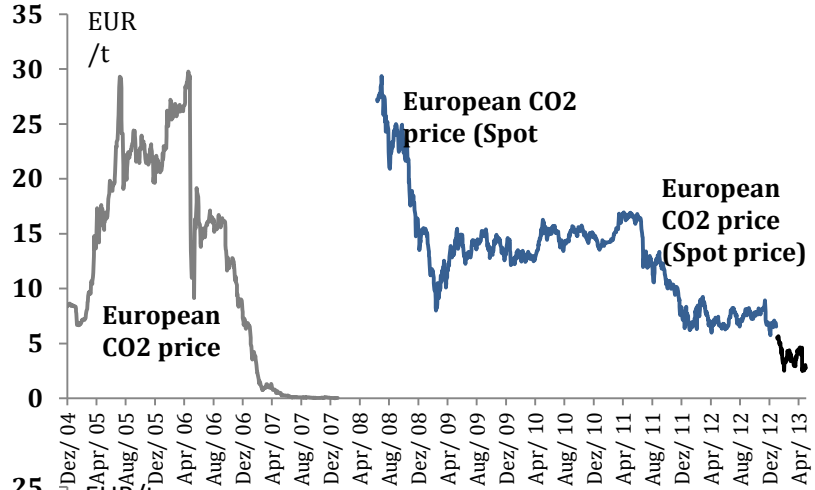
EU ETS has contributed only to one of these multiple objectives - carbon price in the EU ETS to date has been too unstable

(a)



(b)

- Either to support low carbon investment in Europe

- Or to drive international investment through the Clean Development Mechanism

Fig.7.2 Evolution of European carbon and international offset prices
Data Source: European Climate Exchange

Price instability – an intrinsic risk to current EU ETS design

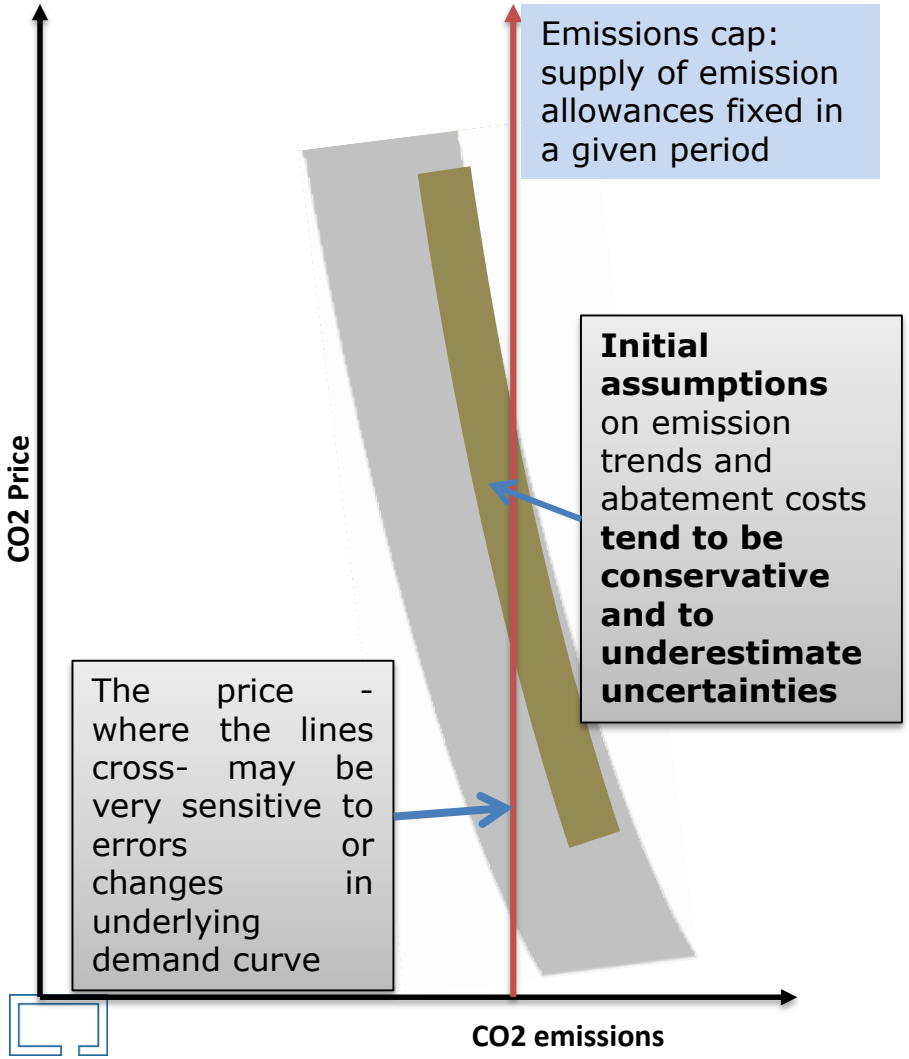


Figure 7-5 Source of price instability in an emissions trading system

… even with 'emissions banking'

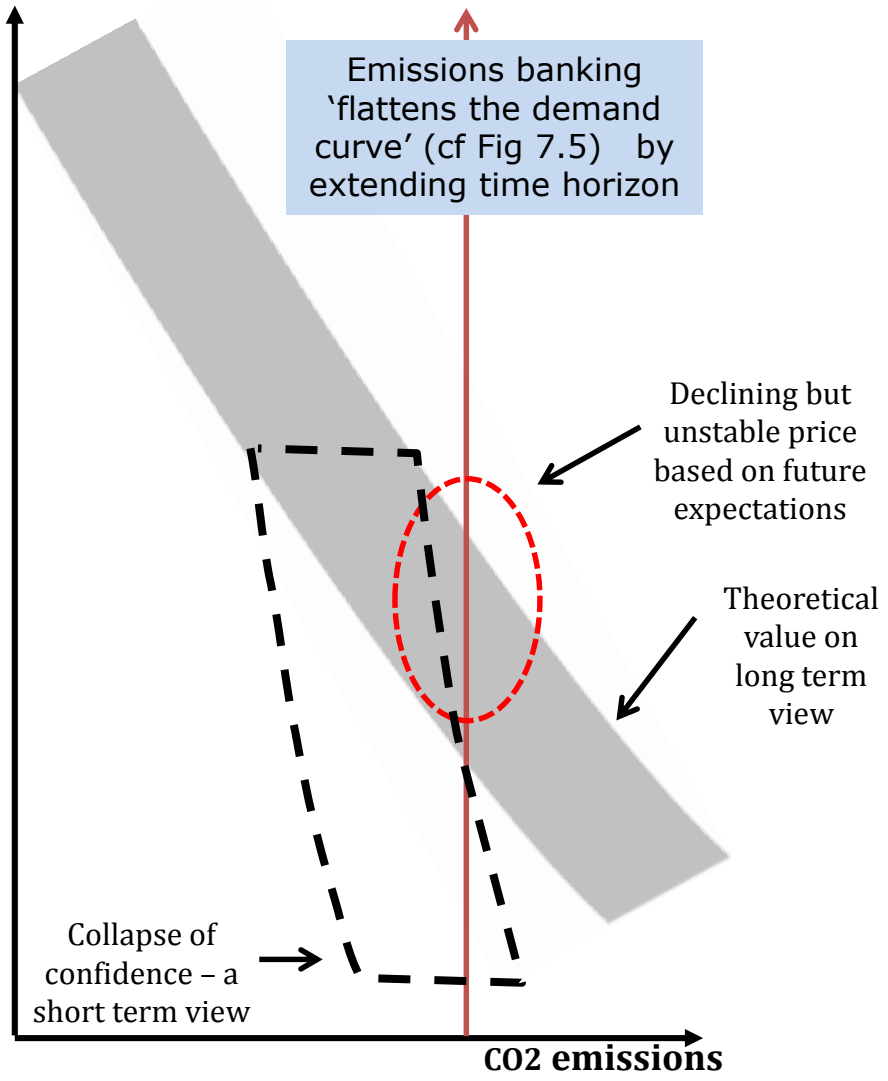


Figure 7-7 a. Impact of emissions banking on carbon price in ETS

Carbon taxation does not solve the problems

- Far more fierce industrial opposition due to unavoidable scale of transfers (and/or, similar levels of complexity)
- Also more fiercely domestic (notably, in EU)
- Still potential instability
  - Usually subject to annual budget cycles
- *And a fixed carbon price may or may not deliver better investment / strategic signals in a world of volatile fuel prices*
  - Clear illustration in power sector economics

Price stabilisation mechanisms therefore essential for credibility (*and also for linkages to other domains)*

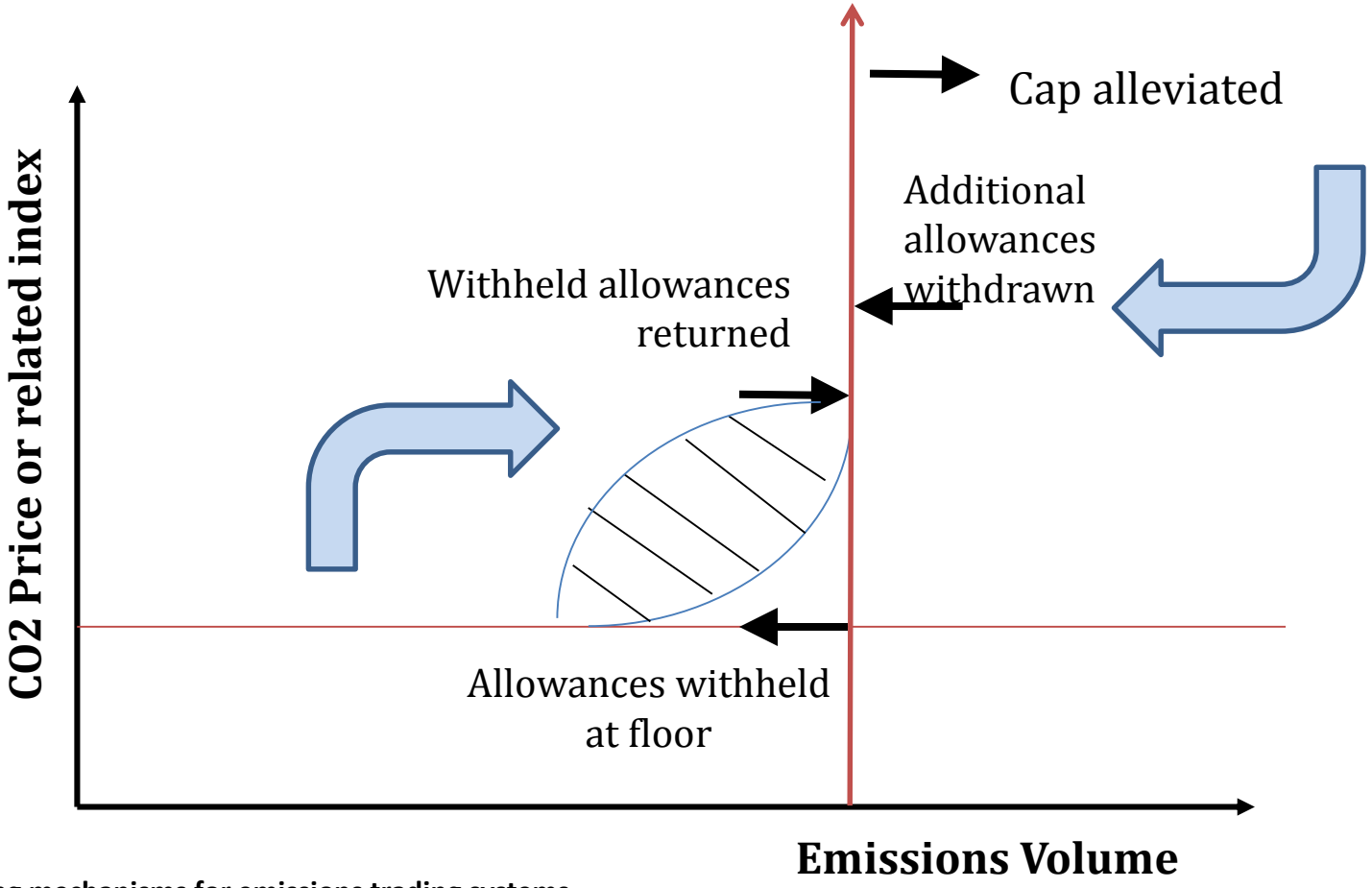


Figure 7-8 Steadying mechanisms for emissions trading systems

Note: The Figure illustrates mechanisms to help emissions cap-and-trade systems deal with deep uncertainties , so as to maintain a reasonable balance of price and quantity objectives. The mechanisms are most simply illustrated with respect to price floors and ceilings, in which case the shaded area indicates the likely region of price and quantity for a system with substantial surplus allowances. However the same principle could apply to other 'threshold' triggers, for example based on the level of cumulative surplus.

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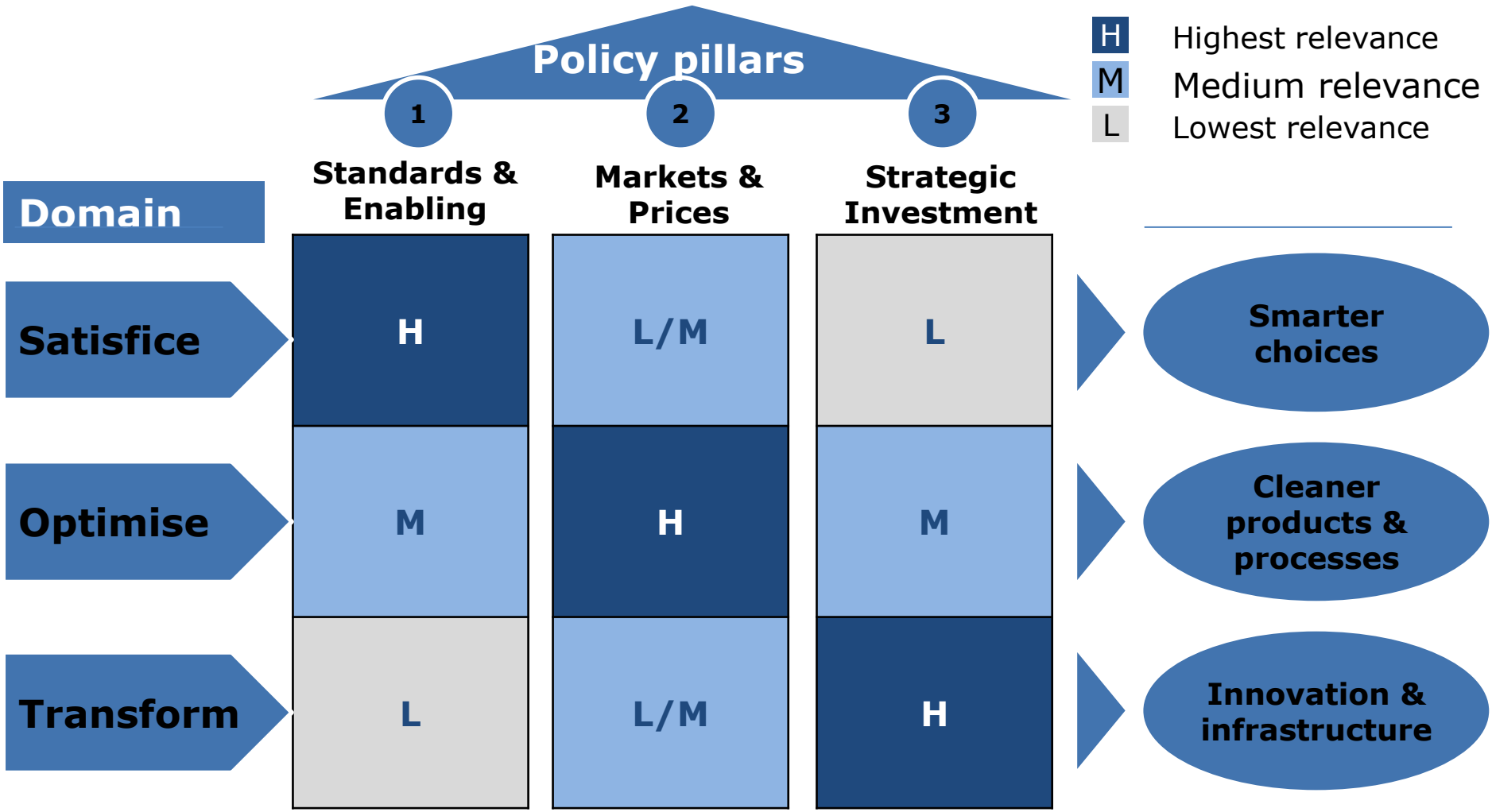
Effective policy must target relevant processes



Ie. match the best instrument to the respective domain of decision-making`

No pillar on its own can credibly solve the problem
– nor offers a politically stable basis for policy

- Energy efficiency / enabling / capacity-building on its own limited by:
  - Scale of intervention required
  - Growing scale of 'satisficing' (wasteful) behaviour
  - …. Leading to weak implementation and large Rebound effects

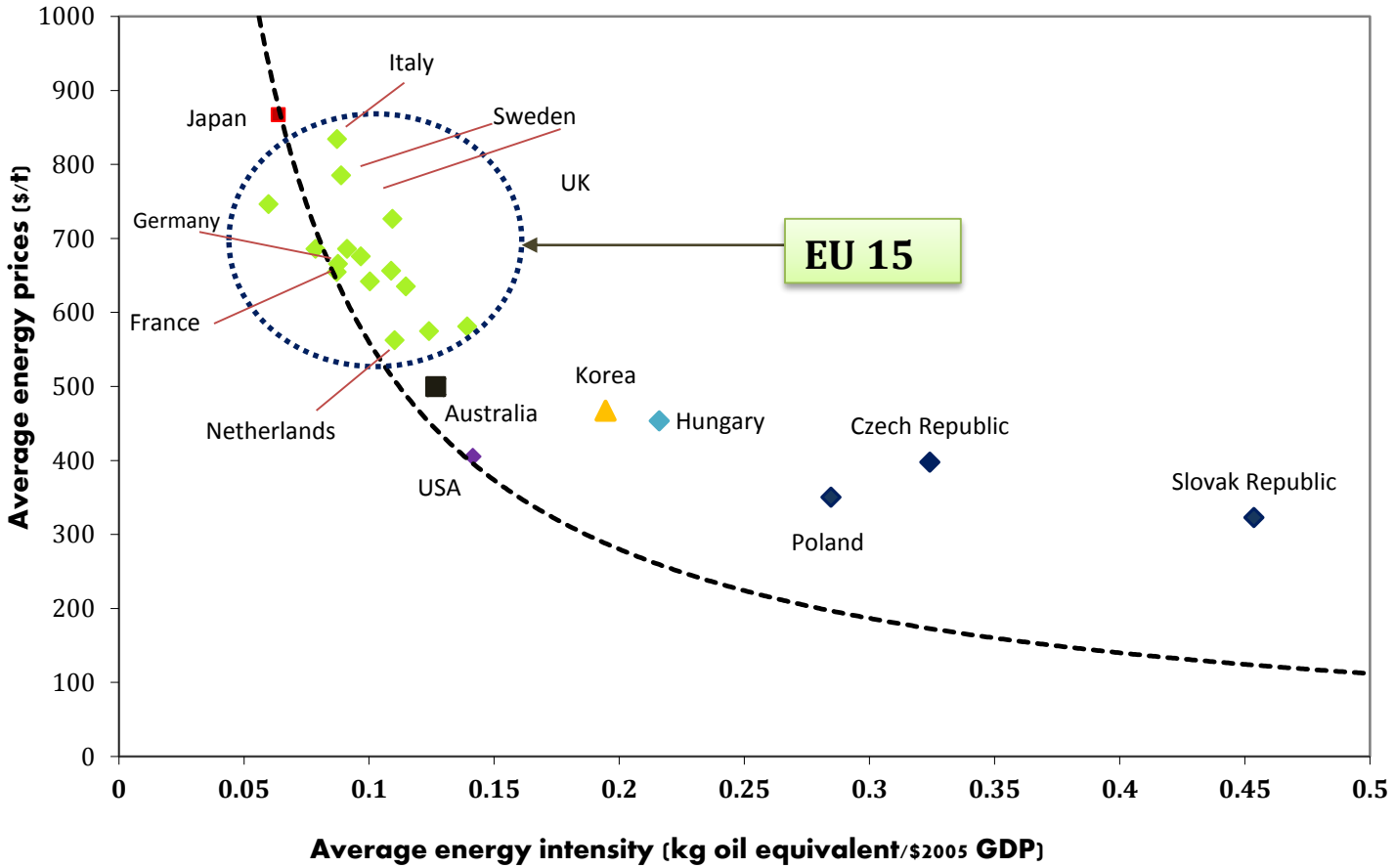
- Pricing on its own limited by:
  - Blunt nature of impacts First and Third Domain impacts
  - Rising political resistance to rising fuel bills
  - .. and competiveness concerns

- Innovation on its own limited by:
  - Lack of demand pull incentives
  - Scale & risks of investment costs
  - Political failures in absence of rising market feedbacks

Prices Matter! – but effects more subtle than they seem

National energy intensity approx inversely proportional to long-run prices

- **across countries the %GDP spent on energy remarkably constant**



***Planetary Economics*, Figure 6-1 The most important diagram in energy economics**

Note: The graph plots average energy intensity against average energy prices (1990-2005) for a range of prices. The dotted line shows the line of constant energy expenditure (intensity x price) per unit GDP over the period

Source: After Newbery (2003), with updated data from International Energy Agency and EU KLEMS

The Bill (not the price)

The "Bashmakov-Newbery Constant" of energy expenditure

- The proportion of national income spent on energy has remained surprisingly constant, *given sufficient time to adjust*
  - for more than a century
  - for most countries

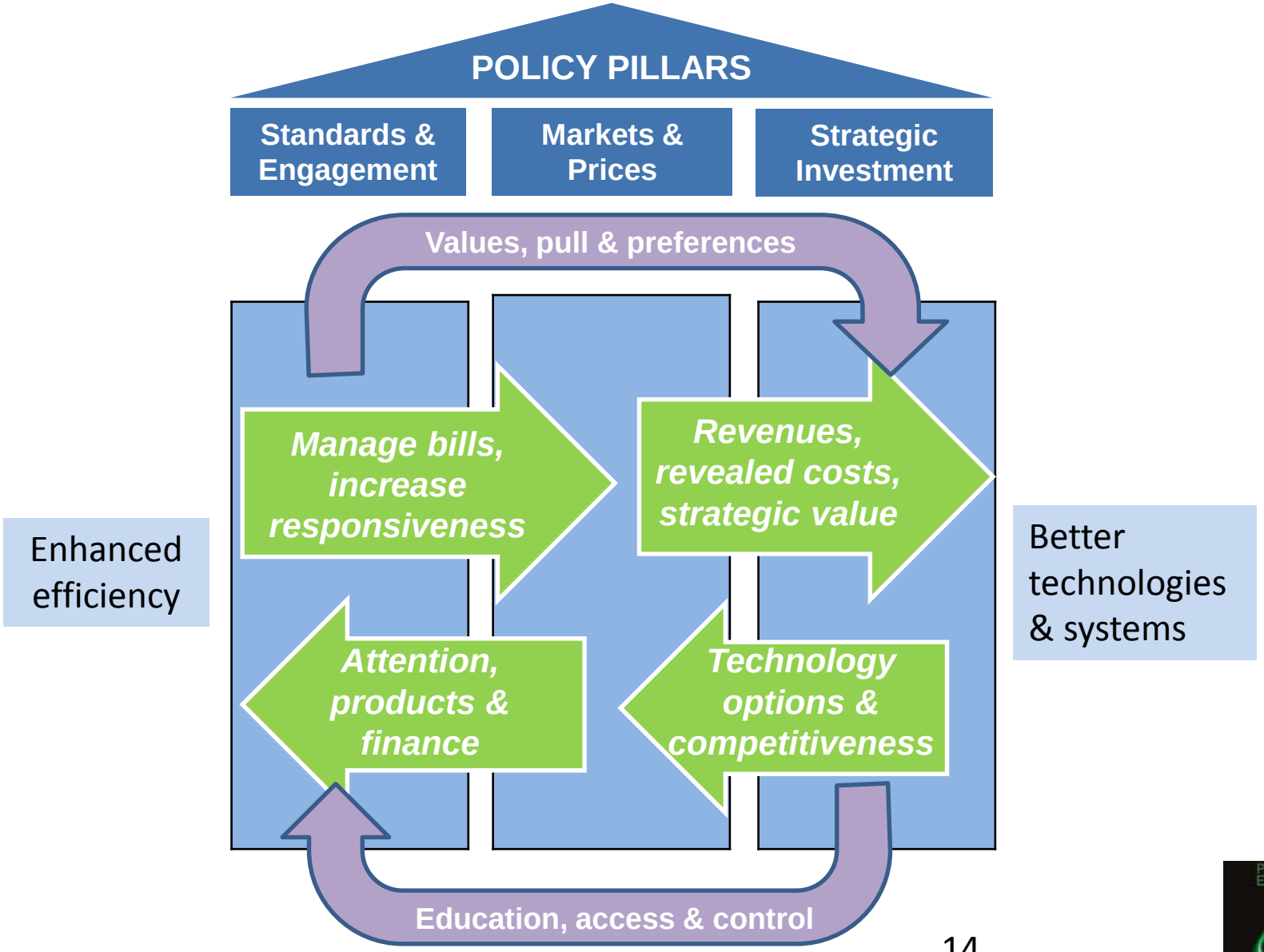
Despite huge variations in energy prices (Bashmakov)

- This cannot be explained through the classical measures of in-country consumer price response (elasticities) but needs also to invoke:
  - **Energy efficiency** regulation and related policy responses
  - **Innovation** throughout energy supply and product chains

Challenge is to accelerate efficiency & low carbon-innovation for several decades *without politically untenable policy-driven price shocks*

Opportunity is a narrative which explains how impact on *prices* can go alongside *constant bills* and *economic opportunities* of transformation

Key to integrate and synergise across pillars



Source: Planetary Economics, Chapter 12 *Changing Course,* Figure 12-1

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Key features in 'rebooting carbon pricing'

Internal design principles

(see also Principles document of Carbon Pricing Leadership Coalition)

1. Carbon pricing as necessary but not sufficient
2. Acknowledge the central challenge is political, not economic
3. Focus on jurisdictions that have relevant legislative powers, and related actors – not just nation-states
4. Combine price and quantity, eg. ETS with pricing corridor
5. Be willing to talk about revenues, eg. domestically for*
    - enhancing energy efficiency and addressing distributional concerns
    - accelerating innovation particularly in energy-intensive sectors
6. … and the multiple forms of carbon pricing

*See CPLC Executive Brief on the Use of Carbon Revenues, World Bank, published 21 September 2016

Carbon pricing is not '**the** tool', but

- properly designed combinations could become a 'First among Equals?'

A **rising base** carbon reduction value *could* contribute *across* domains:

1. Attention effects and funding	• rising steadily enables efficiency to keep pace and stop much rise in total bills • efficiency programmes may counter regressive concerns, domestically and internationally
2. Rising price differential	• steadily reduce use of coal in power generation without huge asset stranding (reducing 'lock-in') • help to move renewables over time from transitional subsidies into mainstream market
3. Long term visibility and leverage	• increased investment stability • earmarked funding for innovation & infrastructure • Technology cooperation and tariff reduction agreements enlarge club and amplify benefits

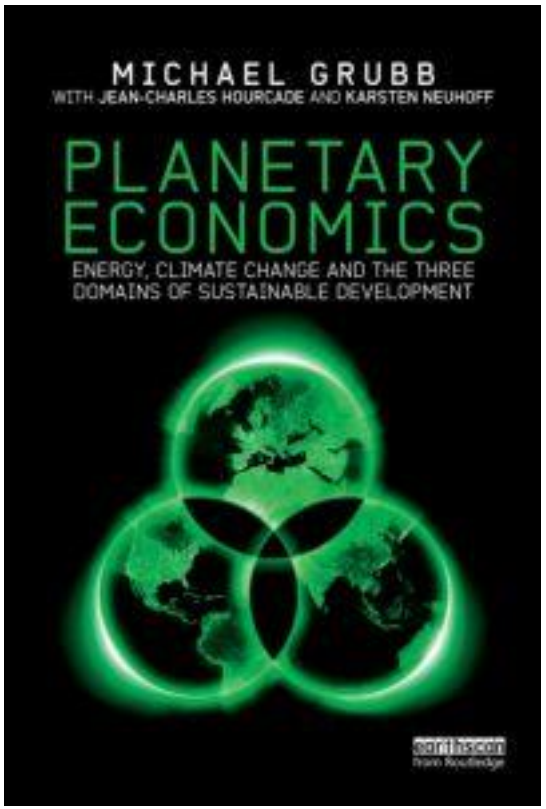
Embedding in international agreement and linking with technology could create a 'club good' and enhance stability and credibility

Multiple tools in the toolbox …
forms of 'Positive Carbon Pricing'

- **Operational market pricing:** establishes current price for emitting CO_2, borne by (usually private) actors in a given market; Taxes or emissions trading the normal instruments. Can be applied either to *production* or *consumption* (latter more complex but avoids leakage concerns)
- **Floor (or corridor) market pricing**: ETS in which the future trajectory is guided by floor price rising over time, usually accompanied by a price ceiling. Creates corridor for future price trajectory & expectations (note link to values specified for institutional carbon pricing)
- **Institutional carbon valuation ('internal / shadow carbon pricing'):** assumed values used by entities to apply to emitting carbon in evaluating investment or other decisions. Adopted by several governments for public policy appraisals, and by the European Investment Bank and the World Bank; companies also use it to guide investment / risk appraisal
- **Carbon value underwriting:** the use of carbon pricing as an investment instrument, specifying a redeemable value for carbon emission reductions operated through public contracts or financial institutions (such as central banks), again with obvious potential links to institutional pricing values
- **Equivalent carbon pricing:** a measure of the *effort* being made to control CO2 emissions in a given jurisdiction, using 'carbon price' as an index which may aggregate the impact of numerous different policy instruments – for example, the implicit value expressed through strong efficiency standards.
- **Packaged carbon pricing** reflects principle that carbon pricing is one instrument in a wider package of policies, structure explicitly designed to support the other elements of evolving sectoral transformations

Planetary Economics:

Energy, Climate Change and the Three Domains of Sustainable Development



1. **Introduction: Trapped?**
2. **The Three Domains**

Pillar 1

- **Standards and engagement *for* smarter choice**
- 3: Energy and Emissions – Technologies and Systems
- 4: Why so wasteful?
- 5: Tried and Tested – Four Decades of Energy Efficiency Policy

Pillar II

- **Markets and pricing *for* cleaner products and processes**
- 6: Pricing Pollution – of Truth and Taxes
- 7: Cap-and-trade & offsets: from idea to practice
- 8: Who's hit? Handling the distributional impacts of carbon pricing

Pillar III

- **Investment and incentives for innovation and infrastructure**
- 9: Pushing further, pulling deeper
- 10: Transforming systems
- 11: The dark matter of economic growth

12. **Conclusions: Changing Course**

Published Routledge 2014: 6-page 'Highlights' paper available