# Green Fiscal Reform, Energy Reform & Competitiveness

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'Recovery, Jobs and Sustainable Prosperity: a New Agenda..'
Brussels, 5 November 2014

# Some prefatory remarks

- On Multiple Objectives
- 20 years on from Krugman (Foreign Affairs, 1994):
  - ".. concerns about **[national]** competitiveness are, as an empirical matter, almost completely unfounded … the obsession with competitiveness is not only wrong but dangerous, skewing domestic policies and threatening the international economic system…."
- Competitiveness is primarily a *sectoral* concern though obviously influenced by wider economic and cross-cutting policy factors
- The 2030 Package, 2025 Bridge, and Energy Union: an unparalleled opportunity?

# On Jobs & Macro-competiveness (1)

- A reasonable hypothesis could be that taxing resources / environmental damage instead of labour or capital could be expected to lead to net increase in jobs
- There are also counter arguments, surrounding the impact of "economic distortions" earlier in the value chain propagating through the system and depressing GDP growth, assuming the current system is approximately optimal (a rather 'herioc assumption'; and ignoring unpriced environmental impacts)
- There are of course counter-counter arguments, and growing numbers of modelling studies (see most recently eg. FTI consulting, and Barker et al., (CUP 2015)

- Actually, these issues may be eclipsed by bigger factors affecting Europe's long run employment & growth prospects ….

# On Jobs & Macro-competiveness (2)

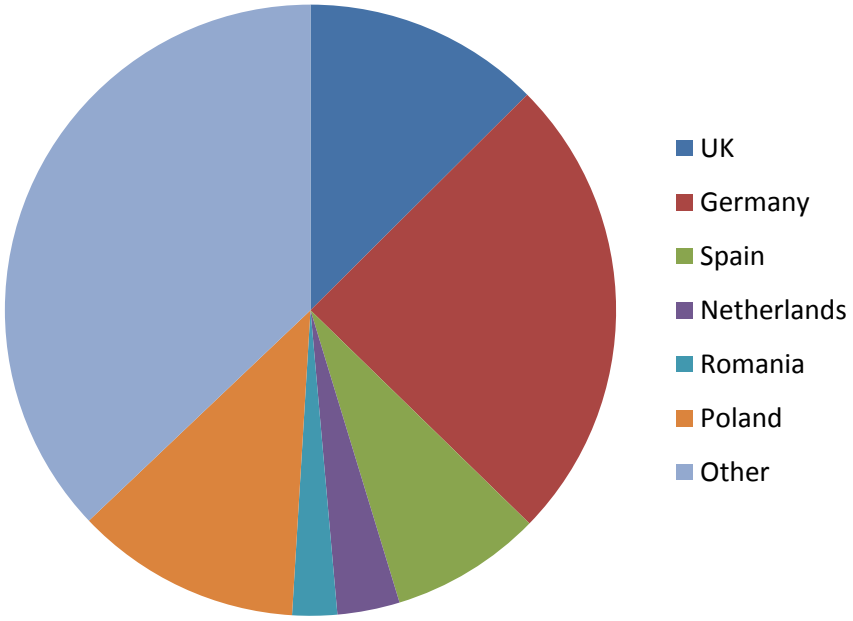
- Long run economic prospects more likely to hinge on, *i.a.*:
  - Wider structural factors (eg. Labour market rules, etc)
  - Containing the debt problem
  - Resources efficiency
  - Attracting investment
  - Innovation & infrastructure

- To an important degree, influenced by
  - stability in factor prices and political risk
  - **revenues, expenditure, and leverage effects**
  - **Sectoral strategies and *integrated policy packages***

# Carbon revenues may be substantial (but are not free)

- Financial crisis persists and expected ETS revenues *were* €20-30bn/yr
- EU needs investment – including heavy investment in energy sector (many hundreds of €bns total over this decade)
- Crucial issue is the distributive effects between consumers & sectors, and ways of utilitising revenues between general, energy & international

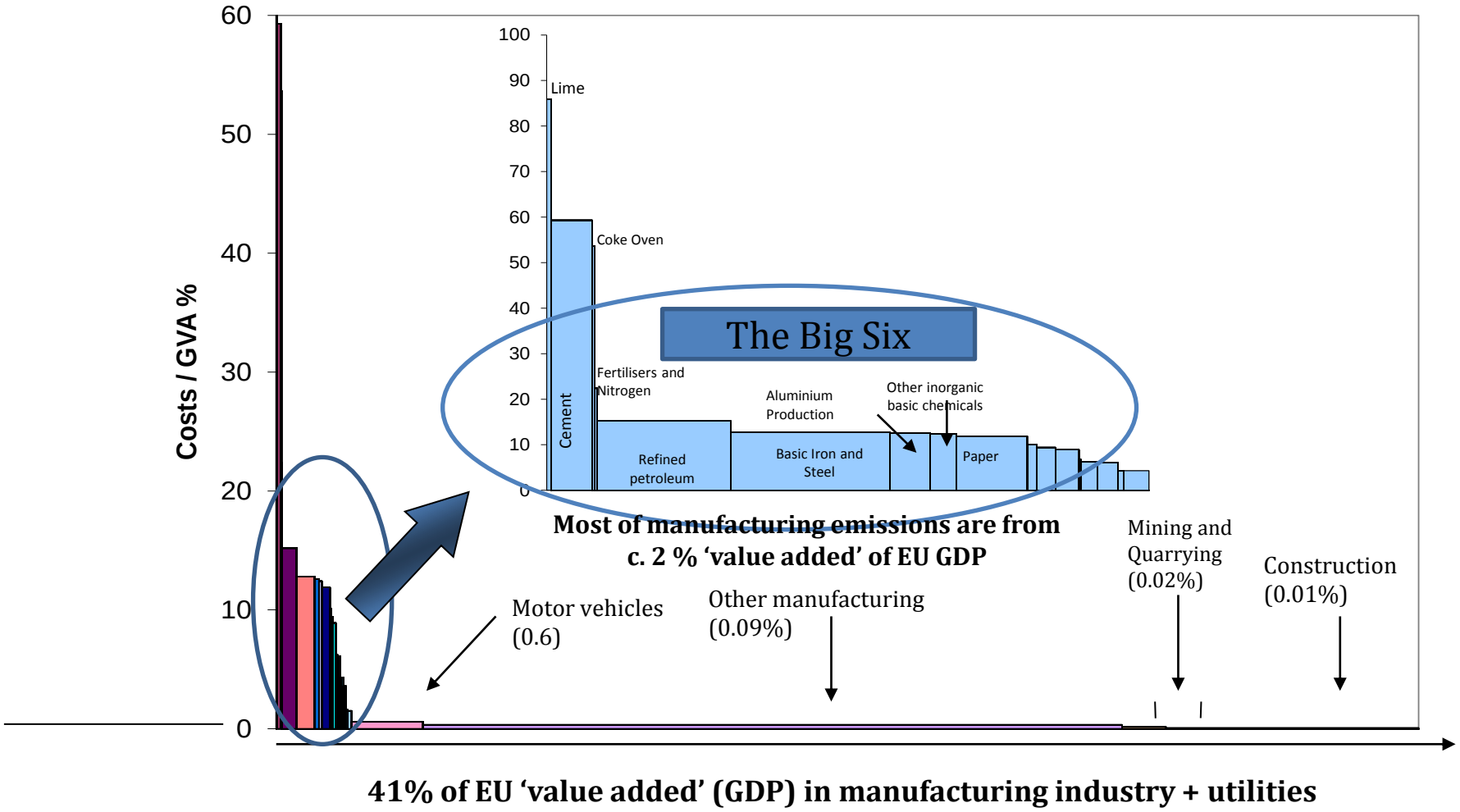
| | In 2013 (@ €15/$tCO_2$) | In 2020 (@ €22/$tCO_2$) |
|---|---|---|
| **EU-27** | **€ 19 billion** | **€ 27 billion** |
| **Germany** | € 5.1 billion | € 6.8 billion |
| **UK** | € 2.6 billion | € 3.4 billion |
| **Poland** | € 1.6 billion | € 3.3 billion |
| **Spain** | € 1.6 billion | € 2.2 billion |
| **Italy** | € 1.7 billion | € 2.4 billion |
| **Greece** | € 0.8 billion | €1 billion |
| **Netherlands** | € 0.7 million | € 0.9 billion |
| **Romania** | € 150 million | € 650 million |




Distribution of cumulative revenues between countries (EU total (2013-20) = €182bn)

Source: Grubb et al. (2014), Strengthening the EU ETS, Climate Strategies www.climatestrategies.org

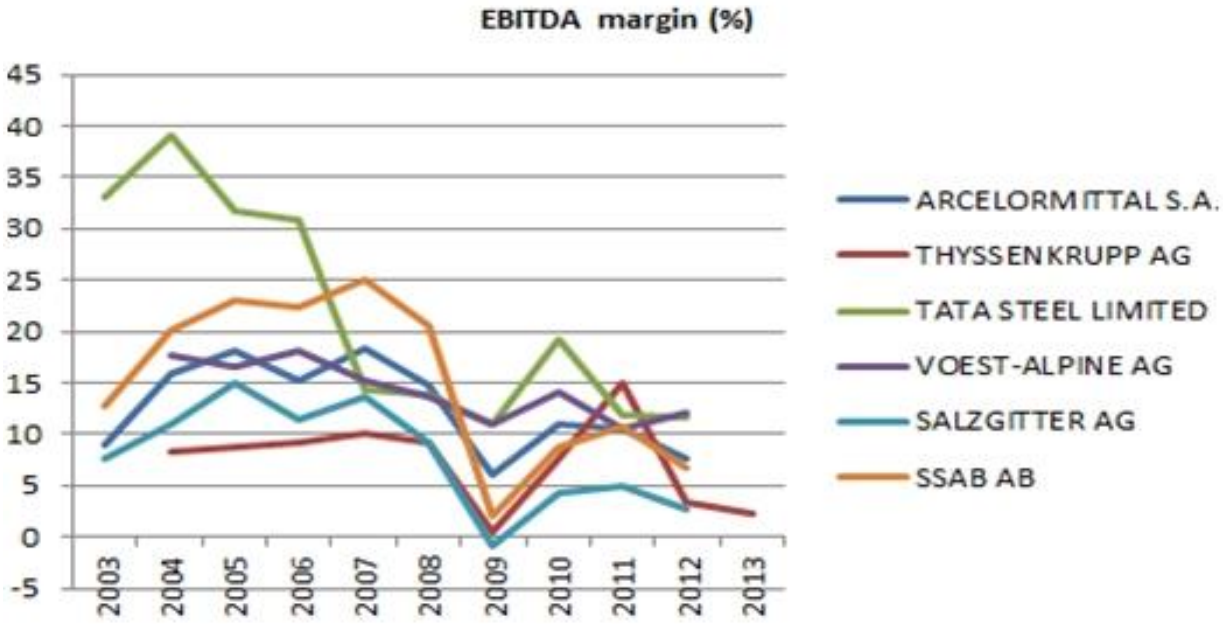
# Understanding sectoral structure *is fundamental*
## "Who's hit?" In industry – c. half a dozen primary commodity sectors




**Source: Planetary Economics Ch.8 Figure 8-4 Impact of carbon pricing on EU industry sectors and their share of the EU economy**

# A brief look at Steel

# 1 Competitiveness:
## EU steel industry has major problems of overcapacity & low profit margins

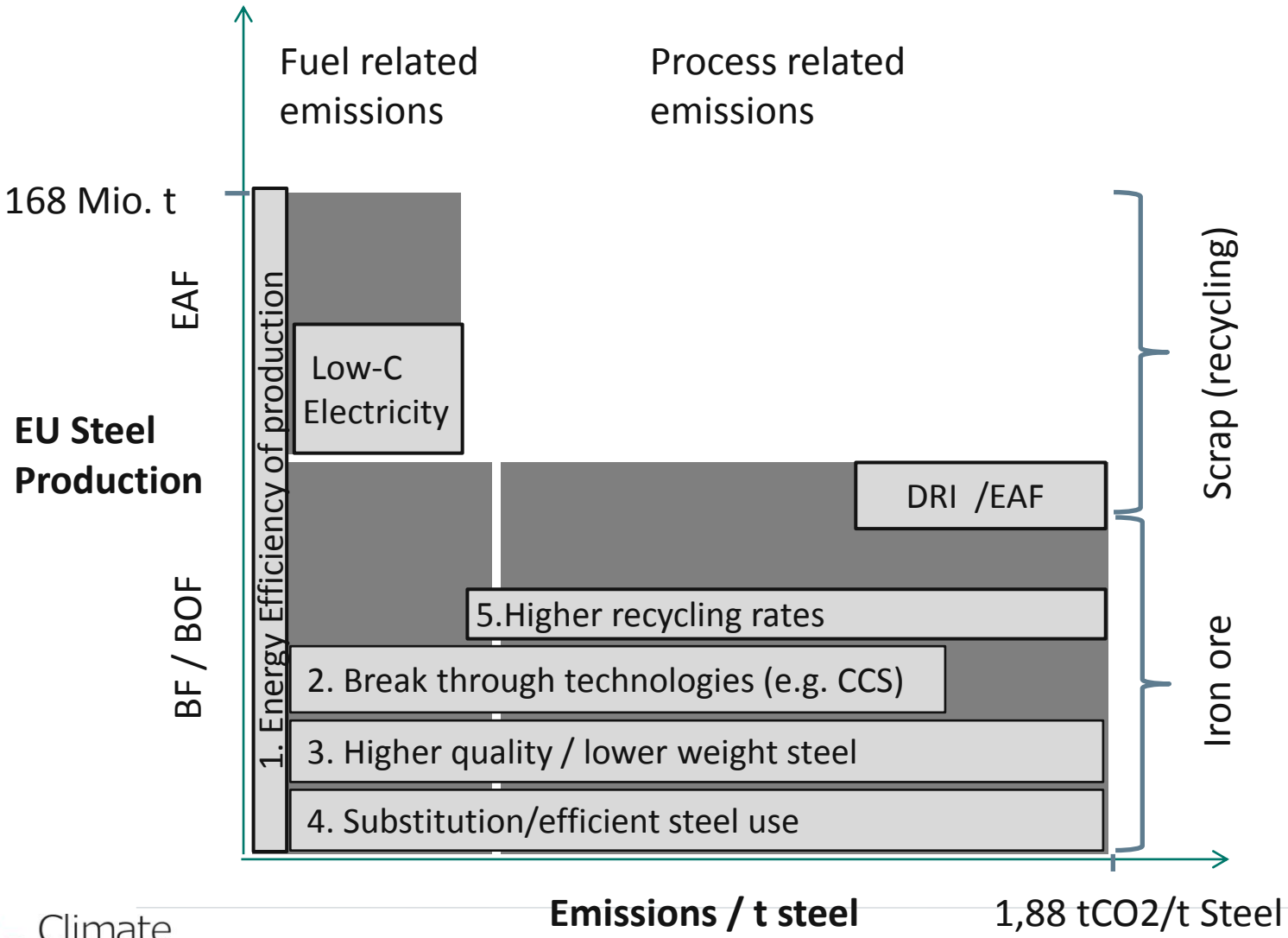



Data: Orbis

Source: Neuhoff K. et al.(2014), *Climate Strategies* Steel Report

# 2 Carbon:
## No magic bullet, but diversity of options in manufacturing, recycling and use

*Illustration*




Climate Strategies

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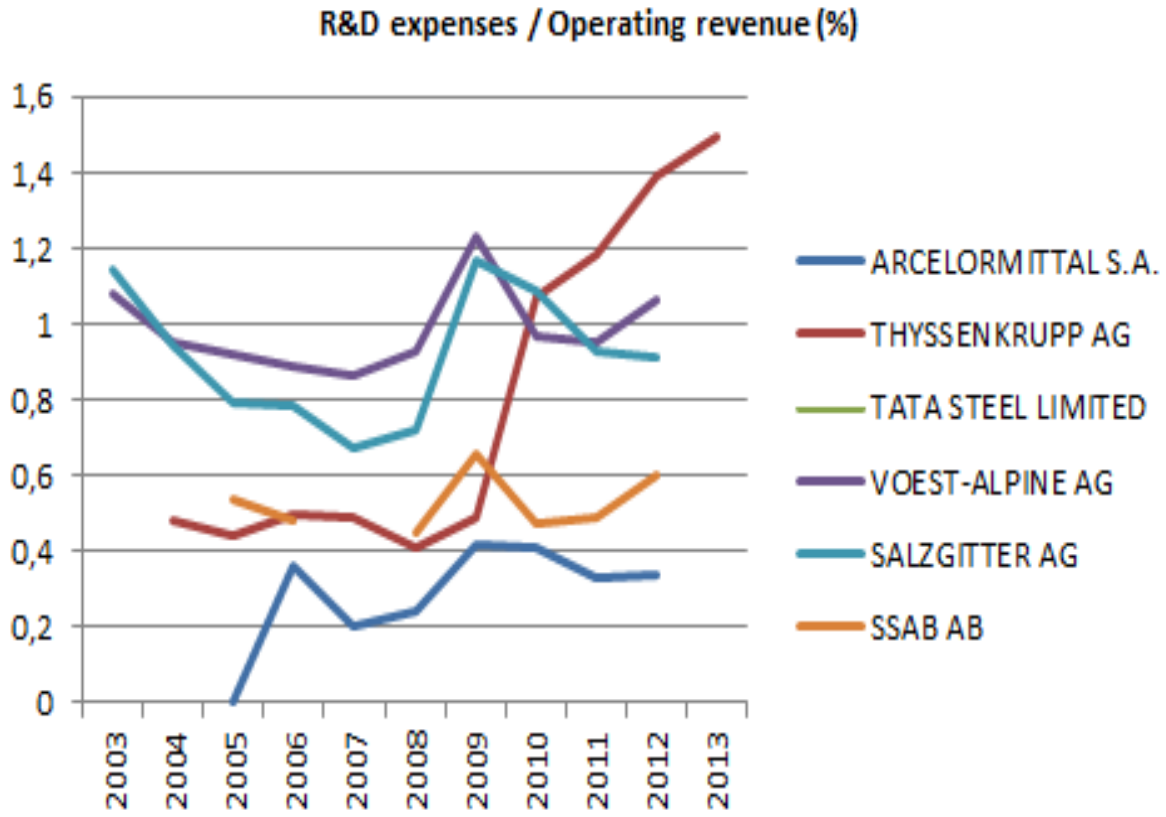
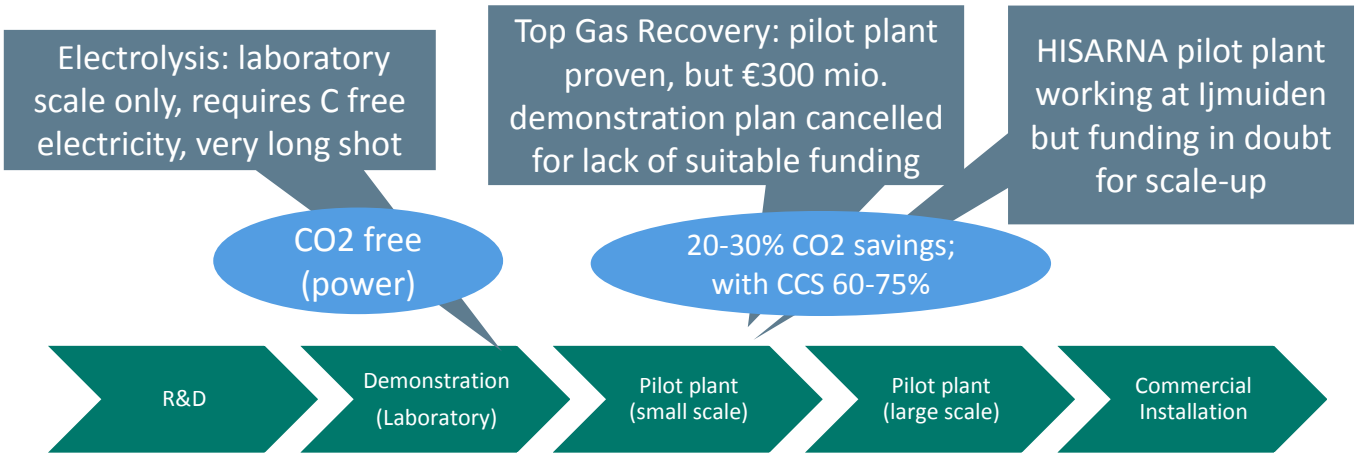
# 2 R&D *intensity* maintained

## – but low in comparison with many other sectors




Source: Neuhoff K. et al.(2014), *Climate Strategies* Steel Report

# 2 Breakthrough technologies pursued with ULCOS – but stalled at pilot stage



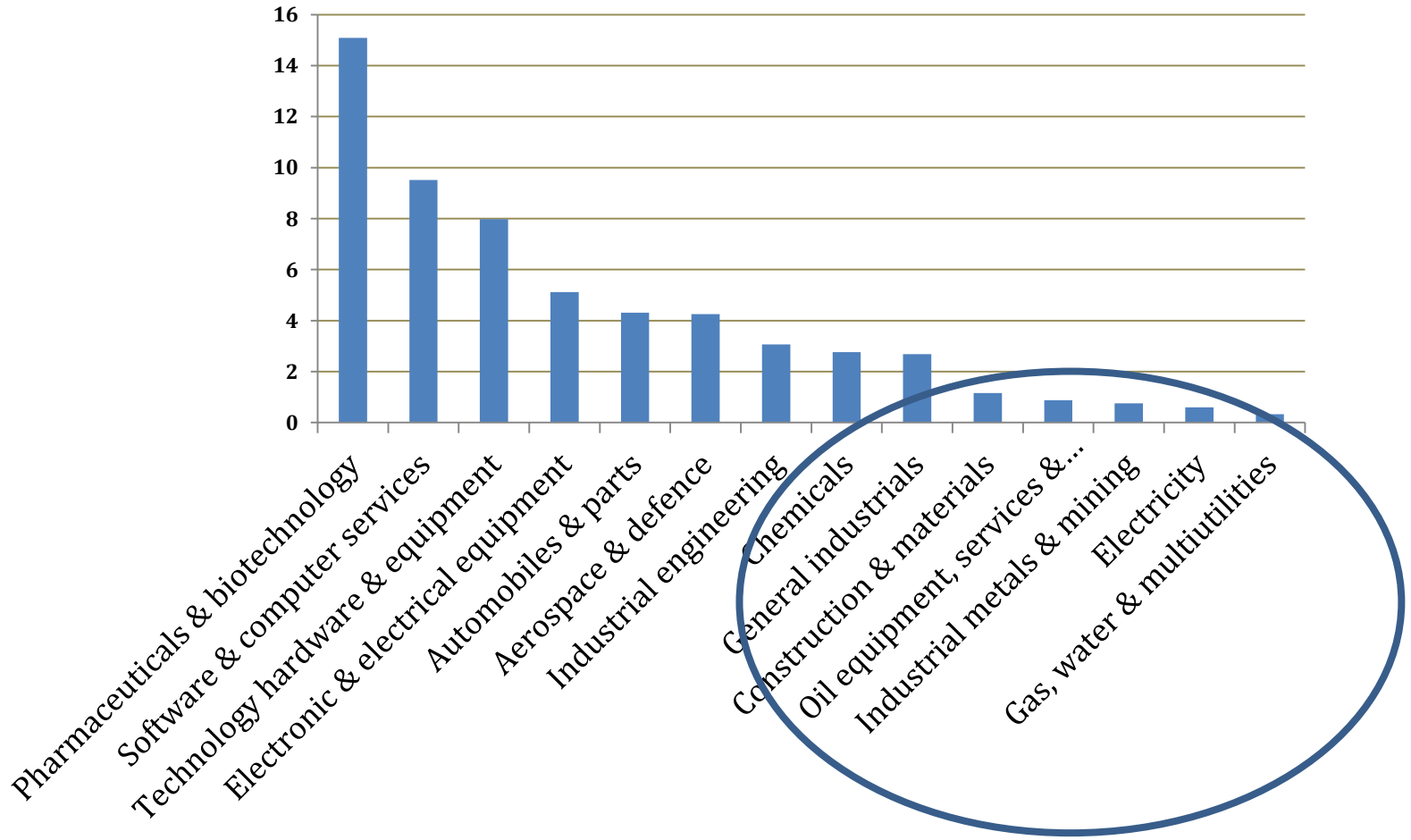

- Expectation of climate policy initiated ULCOS project

**Why have ULCOS projects stalled?**

- CCS-based technologies only viable with permanent carbon pricing regime
- Steel firms not prepared to finance and take whole risk (EC was not prepared to take risk share under NER 300 facility)
- (Political challenges of CCS in Europe)

Source: Neuhoff K. et al.(2014), *Climate Strategies* Steel Report

# More generally, we are seeking radical innovation in sectors that spend exceptionally low share of revenue on R&D

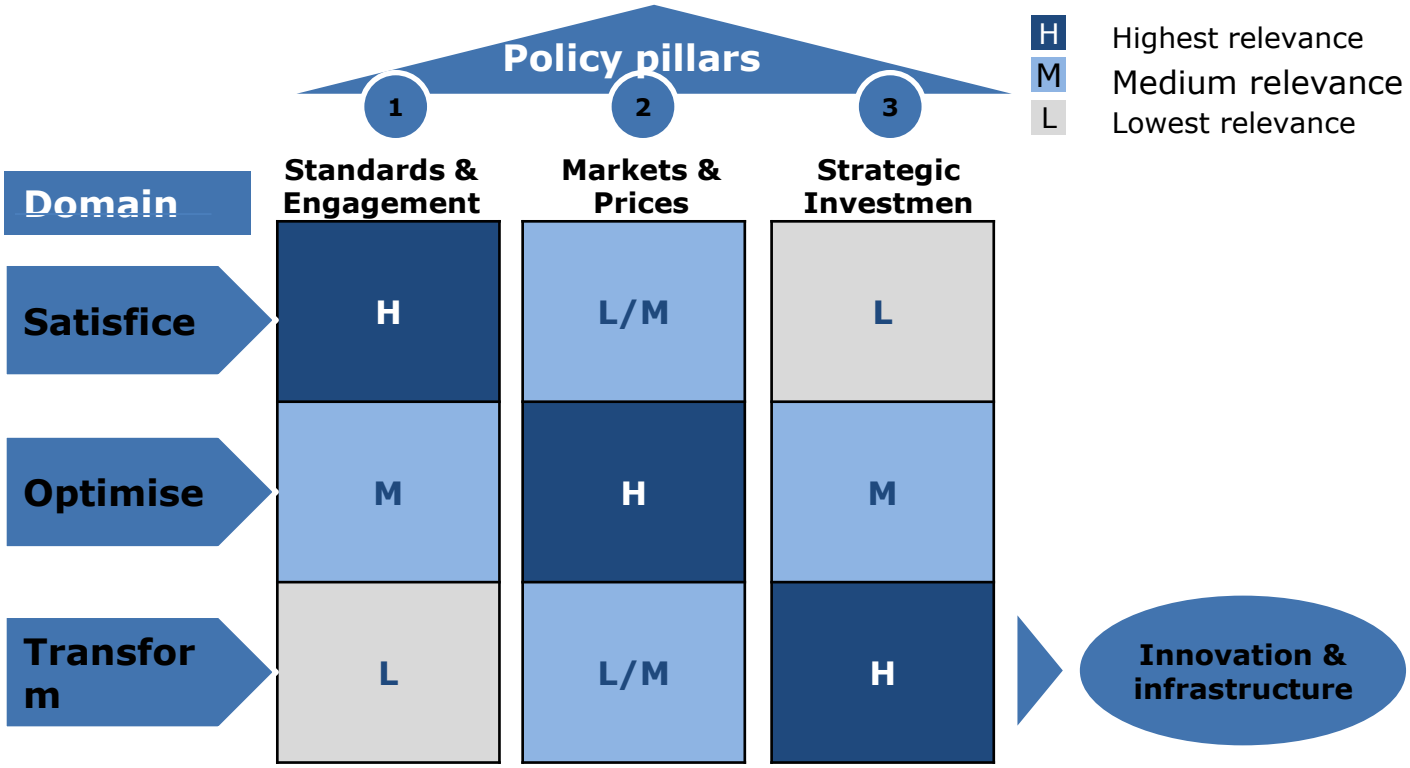



***Planetary Economics,* Chapter 9 'Pushing further, pulling deeper'**
**Fig.9.3 R&D expenditure by top companies in different sectors as % of sales, 2011**

*Data source: EU Joint Research Centre on Industrial Investment and Innovation, R&D Scoreboard 2012, http://iri.jrc.europa.eu/scoreboard12.html*

# Back to some Theory

# Effective policy needs to harness three pillars ….



# Having established competitive European markets, the structural gap is mostly in the mid-stages of the innovation process

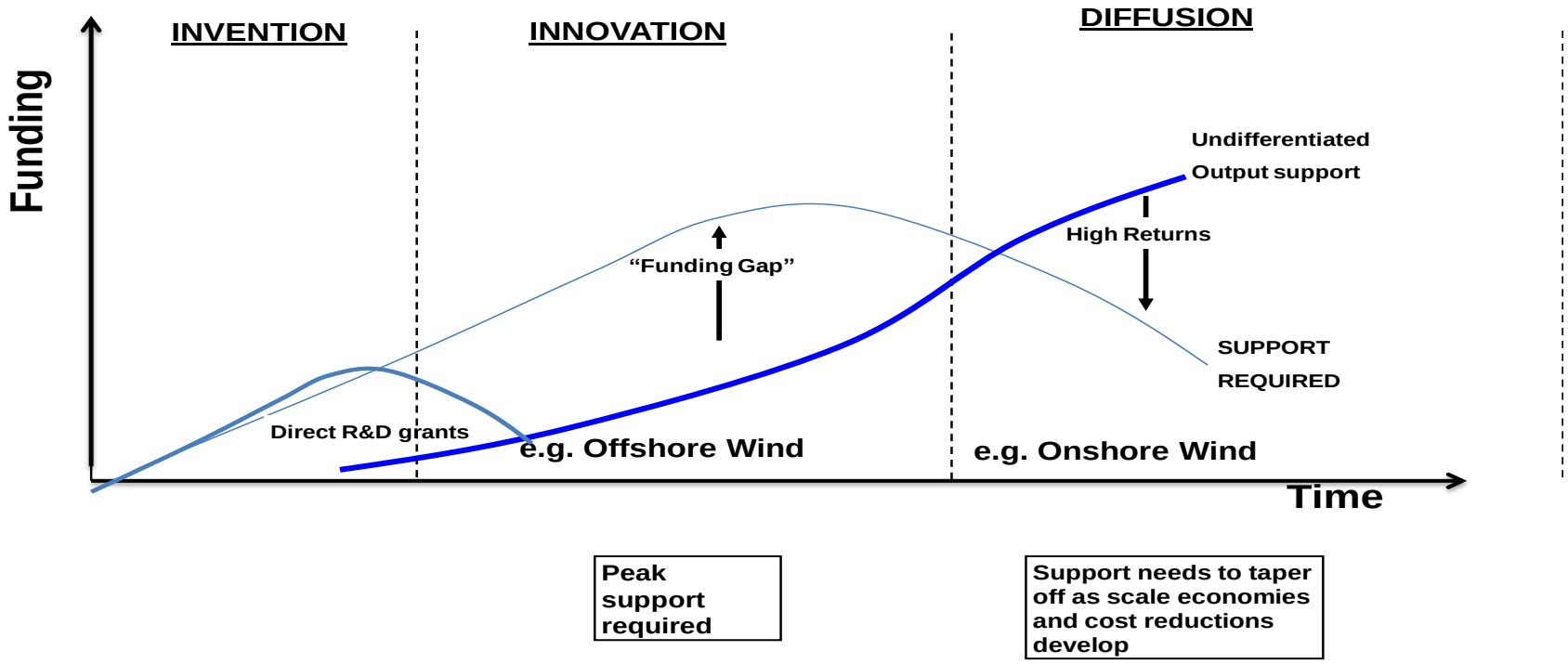
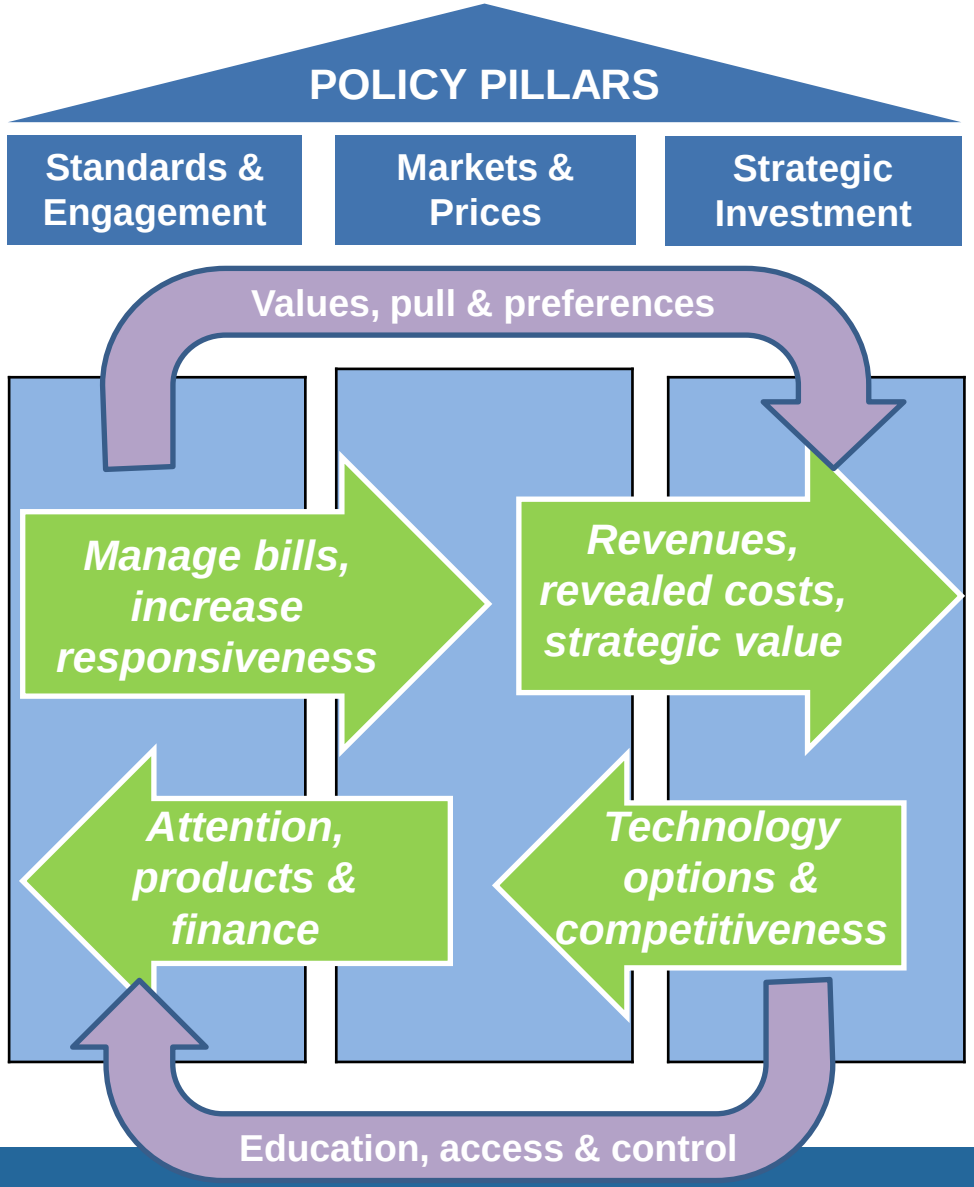



**Fig.9.8 (b) The funding gap under R&D + undifferentiated demand-pull subsidies**
*Graph adapted from : Carbon Trust (Haj Hassan et al, 2008)*

## .. *Designing positive interactions between the Pillars*

means being willing to look at earmarking at least some revenues



# 4 Returning to steel: is there a bargain to be struck around a vision for the sector ?

- Climate policy can neither resolve nor ignore surplus capacity & low profitability

- Low-carbon roadmap could become a starting point for industry vision
  - Develop joint strategy to unlock portfolio of mitigation options

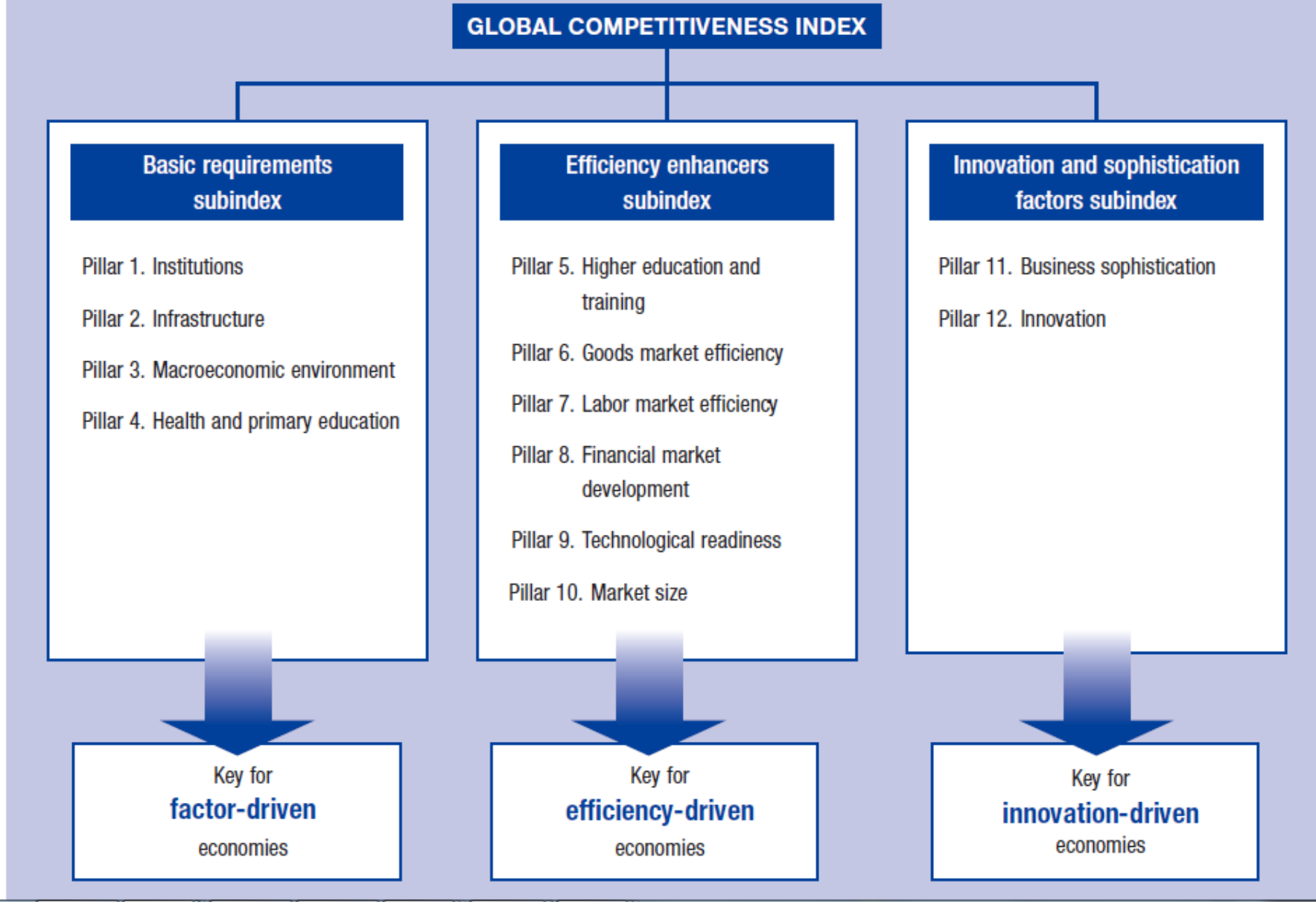
- Translate roadmap into tangible investment and innovation framework
  - Long-term credible leakage protection – border levelling or consumption-based approaches
  - carbon price & carbon price pass through
  - Flexibilty under ETS cap avoids controversy about sector target
  - Explore complementary regulatory / engagement policies
  - Provide public funding  and support for innovation

- Innovation & engaging customers strengthens position of EU steel

# Returning fully to the macroeconomic level …

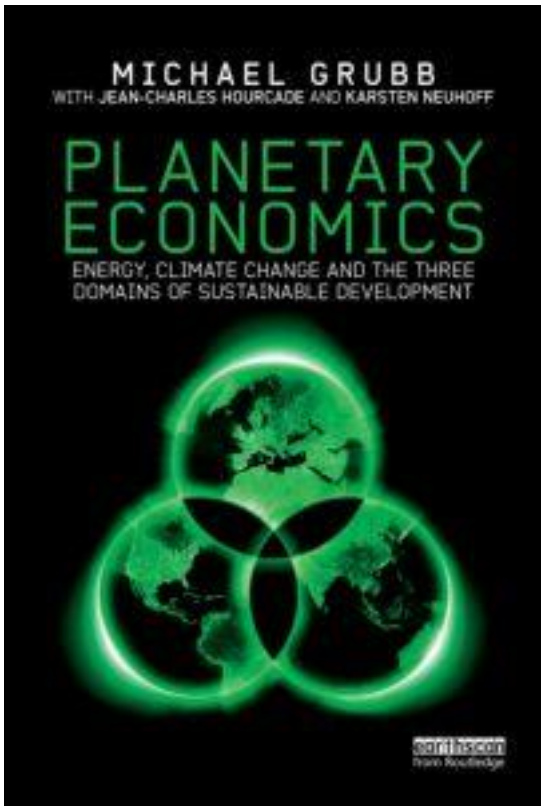
- The 'residual' accounting for typically half of observed economic growth that cannot be explained by resource and capital accumulation
  - (*Planetary Economics* Ch.11 the "Dark Matter" of growth)
- Economic research points two broad areas for attention:
  - Persistent suboptimal performance of many economic actors and structures
  - Inadequate education, infrastructure and suboptimal rates of innovation
- ie. First and Third domain processes recognised as important for macroeconomic growth. Yet these remain
  - largely absent in global (or national) modelling
  - poorly charted in policy
- Energy & heavy manufacturing particularly strong candidates because
  - Pervasive 'incidental' consumer cost & input to production sectors
  - Fossil fuel markets (hence cost base) intrinsically unstable
  - Exceptionally low rates of innovation particularly elec. & construction

# Some suggestive alignment of Three Pillars with structure of the WEF Global Competitiveness Index …



# 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 choices**
- 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**

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

12. **Conclusions: Changing Course**

***Book lecture: London School of Economics, 6 November 2014, 6.00pm***

www.climatestrategies.org/events/2014-events/book.html
for information and register of related events.

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