Alternatives to wooden headedness: (much) less costly ways of regulating carbon emissions

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Outline

- Wooden-headedness and ‘protective stupidity’.
- The significance of achieving low costs of de-carbonisation.
- Policy incontinence and its upward effects on de-carbonisation costs.
- Some basic economics.
- Addressing the central issue of uncertainty.
- Alternatives I: stop restricting competition.
- Alternatives II: create new property rights and markets.
- Alternatives III: fill the institutional gaps in policy development.
- Alternatives IV: copy the incentive effects of IPRs on innovation.
- Alternatives V: limit Leviathan more explicitly (reinforce Alternative I).

Since my subject touches on heresies, I start with Keynes.

- *Words ought to be a little wild, for they are the assault of thoughts on the unthinking.*
- *All these pretty, polite techniques, made for a well-panelled boardroom and a nicely regulated market are liable to collapse ….* [they try] *to deal with the present by abstracting from the fact that we know very little of the future.*
- *The future life of Europe was not their concern; its means of livelihood was not their anxiety. Their preoccupations, good and bad alike, related to frontiers and nationalities, to the balance of power, to imperial aggrandizements, to the future enfeeblement of a strong and dangerous enemy, to revenge, and to the shifting by the victors of their unbearable financial burdens on to the shoulders of the defeated.* (On the gulf between the concerns of politicians and of the concerns of peoples at the time of the Treaty of Versailles, in *Economic Consequences of the Peace.)*

The main arguments

- Current climate change policy can be characterised as a strategy of foreclosure (of new ideas, new technologies and new businesses). Its principal problem – (excess) cost – is associated with these tendencies to foreclose and exclude.
- We prevent such tendencies in the private sector (when they are feasible for companies with substantial market power) by making them illegal. But that which is illegal in the private sector is quotidian in the public sector.
- Current policies are neither 'pretty' nor 'polite' but they do fail to address the fundamental issues arising from uncertainty.
- A re-orientation toward more effective strategies would involve:
  - Ending foreclosure/exclusion.
  - Developing new institutions: markets (which are social institutions – and EU ETS is a decent start) and *delegated* regulation of the relevant technical tasks.
  - A technology policy that addresses uncertainties head on, and is based on experience of what works and what doesn't work.

Simplified approach

- I will take a demand for de-carbonisation expressed through political processes as a given (whilst recognising that a fuller analysis requires more detailed analysis of the sources of that demand and its likely evolution over time).
- Rely more on Economics 101 material than usual, because it is sufficient for many purposes and this is an area where there is a broad consensus among economists.
- Sketch out alternatives in outline form only: broad strokes.
- Link points to suppression of competition (monopolisation) in relevant economic activities, and hence to Stephen Littlechild's earlier Beesley lecture on retail energy markets; to highlight common, underlying causes.

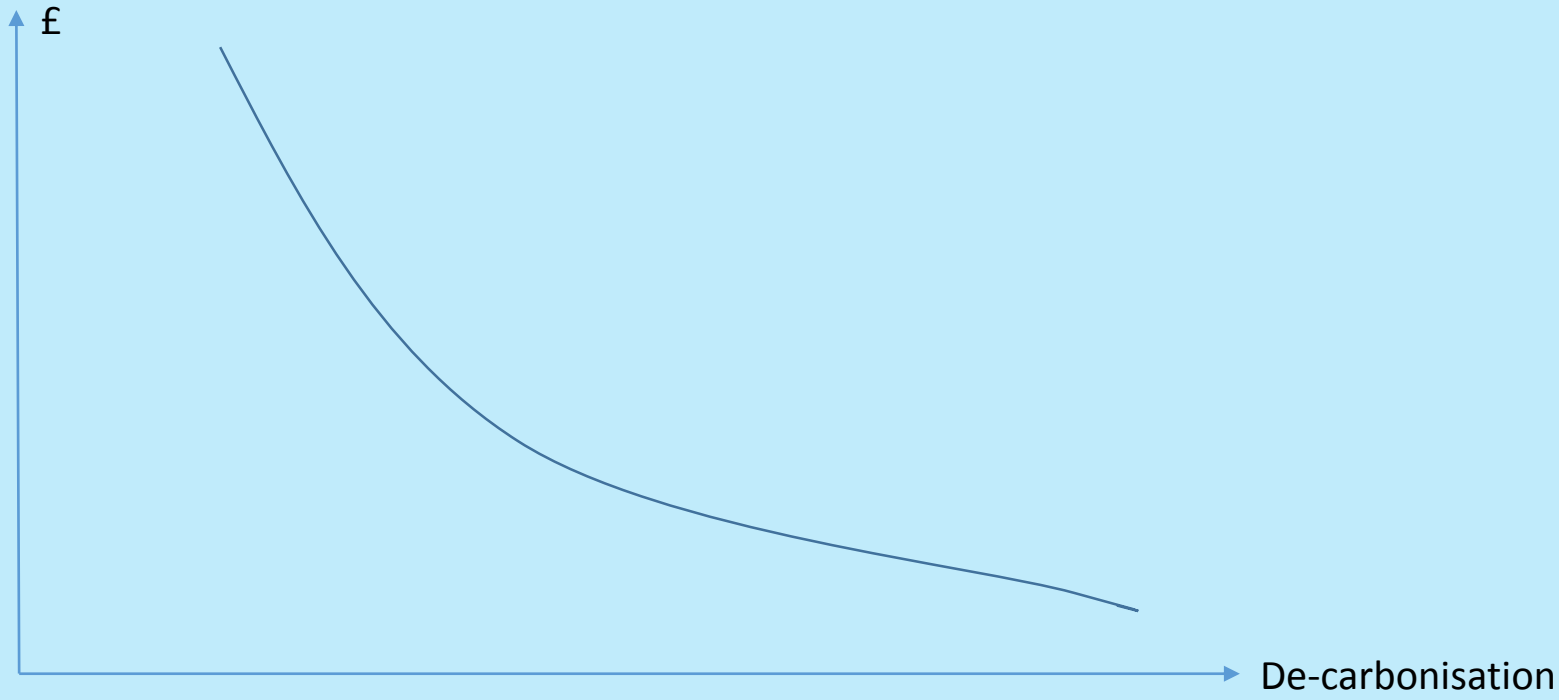
Wooden headedness from Barbara Tuchman, *The March of Folly: From Troy to Vietnam*, 1984.

- *Wooden headedness … is a factor that plays a remarkably large role in government. It consists in assessing a situation in terms of preconceived fixed notions while ignoring or rejecting any contrary signs. It is acting according to wish while not allowing oneself to be deflected by the facts. It is epitomized in a historian's statement about Philip II of Spain, the surpassing wooden head of all sovereigns: "no experience of the failure of his policy could shake his belief in its essential excellence."*
  - *Wooden headedness is also the refusal to benefit from experience …*
  - *[Misgovernment] may actually strengthen a regime temporarily. It qualifies as folly when it is a perverse persistence in a policy demonstrably unworkable or counter-productive. It seems almost superfluous to say that the present study stems from the ubiquity of this problem in our time.*
- *Once a policy has been adopted and implemented, all subsequent activity becomes an effort to justify it.*

Wooden headedness (cont.)

- Tuchman links it to cognitive dissonance, but she is largely content to document the historical experience and doesn't explore causes in detail.
- An alternative line of attack is via Orwell (in *1984*, referenced in the March of Folly).
- *The first and simplest stage in the discipline, which can be taught even to young children, is called, in Newspeak, CRIMESTOP. CRIMESTOP means the faculty of stopping short, as though by instinct, at the threshold of any dangerous thought. It includes the power of not grasping analogies, of failing to perceive logical errors, of misunderstanding the simplest arguments if they are inimical to Ingsoc, and of being bored or repelled by any train of thought which is capable of leading in a heretical direction. CRIMESTOP, in short, means protective stupidity...*
- Immediate linkage to monopolisation/exclusion (of thinking in this case).

Demand curves slope downwards



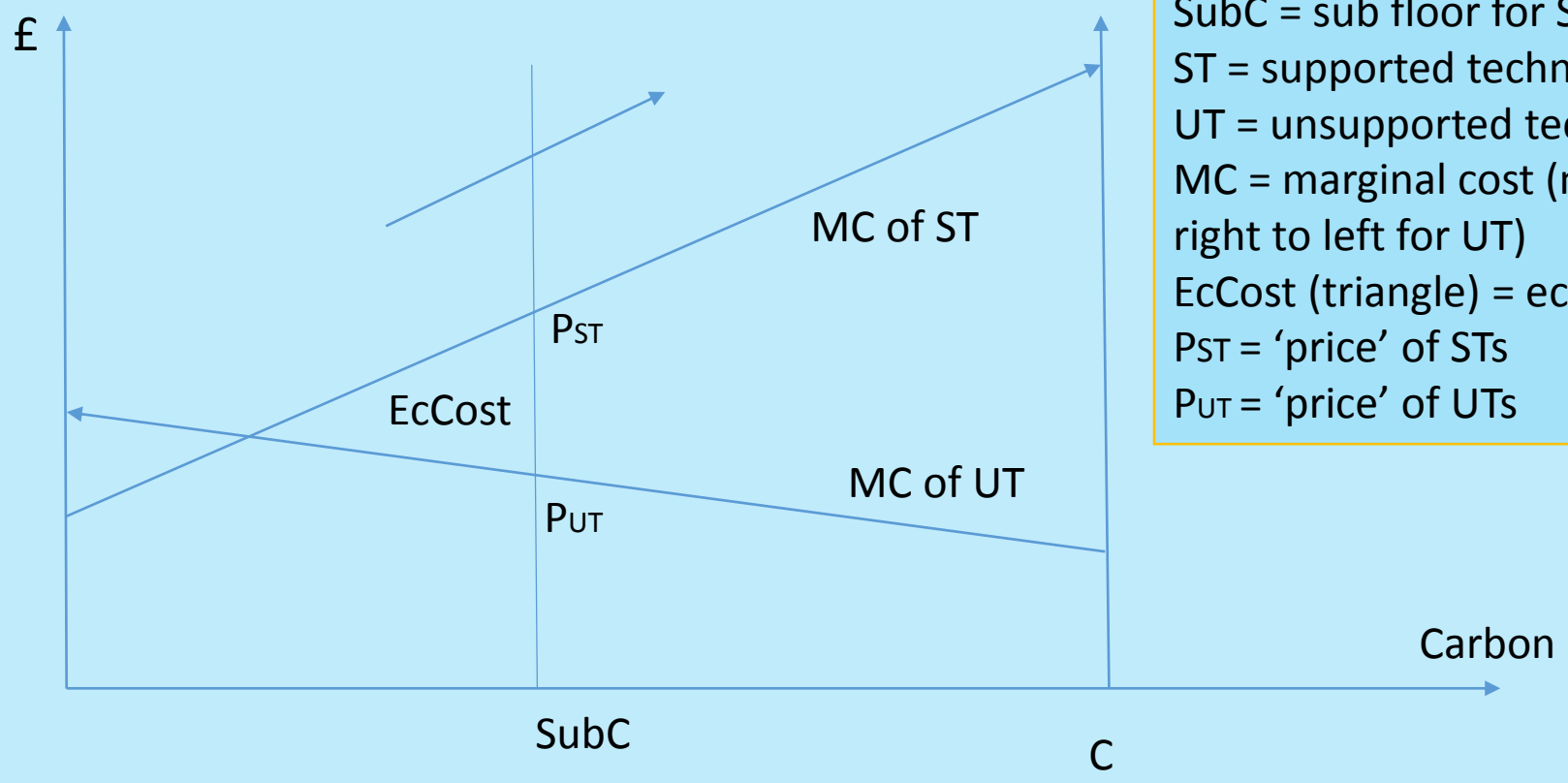
The significance of the cost of de-carbonising

- For any given demand for de-carbonisation, we might expect to see more of it the lower are the costs of doing it.
- Demand curves tend to slope downwards, even when that demand is expressed through political mechanisms. That which is desired has to compete with other 'desirables', whether the decisions are being made by households, businesses or politicians.
- If the aim is reduced carbon emissions, it is folly to persist with policies that incur excessive costs.
- Discovery of new ways of doing things that reduce carbon emissions at lower cost is often transferable, hence potentially contributing to emissions reduction at multiple locations across the globe, not just at local level (as occurs when windmills displace thermal generation).
- Many aspects of current policies were not designed with least-cost objectives at or near the top of the priority list, and subsequent claims that they are cost effective are (transparently) *ex post* justifications based on *corrupted economic reasoning.* See again Tuchman: *Once a policy has been adopted and implemented, all subsequent activity becomes an effort to justify it.*

Policy incontinence

- Why do we have a problem, given that standard arguments for cap-and-trade and carbon tax approaches are based heavily on least-cost arguments?
- Policy incontinence: the propensity to add bells and whistles in an attempt to restrict/constrain activities and outcomes to those which have *specific* features, usually at the cost of making policy less effective for achieving *general* economic objectives.
- This is ubiquitous: climate change policy is just one manifestation of a general tendency.
- The sources of demand for such interventions are well understood in the research literature on regulation.
- What is less well known is how *practically and effectively* to prevent or mitigate the political incontinence. We currently lack effective remedies.

Economics 101: effects of sub-constraints



C = decarbonisation floor level
SubC = sub floor for ST
ST = supported technologies
UT = unsupported technologies
MC = marginal cost (measured right to left for UT)
EcCost (triangle) = economic cost
P_{ST} = 'price' of STs
P_{UT} = 'price' of UTs

Economics 101 (cont.)

- Sub constraints (e.g. renewables targets) raise the cost of meeting carbon targets (straight from the maths).
- Economic cost is measured by the designated triangle. The budgetary cost (that paid as subsidy or as surcharge on prices) is much higher than the economic cost.
  - Equal to (PST – PUT) * SubC without 'banding' of technologies.
  - Lowered by 'banding'.
- Costs are small for small adjustments from cost-minimisation but increase non-linearly (a general economics result connected to the 'envelope theorem').
- *The economic return to unsupported technologies falls as SubC increases (see PUT).*
- The marginal cost of decarbonisation via imposition of sub constraints is not PST – PUT, the cost of replacing a lower cost with a higher cost method of decarbonisation: <u>it is infinite</u> – because carbon emissions are unchanged, at C.

Buzz Lightyear economics

- This implication – a policy imposing an infinite incremental cost – might be regarded as remarkable were it not for the fact that it is a reasonably common finding in regulatory studies. It is not unusual to find costly policies that do not advance the relevant objectives, and which not infrequently impair achievement of those objectives.
- In the current case the situation is worse than the introductory diagram suggests. The carbon target C is endogenous in the longer term, and will likely be influenced by costs. The higher the cost, the less stringent is likely to be the target.
- Carbon emissions can also be shifted offshore (regulatory arbitrage). Excessive costs in any jurisdiction promote shifting of some major sources of emissions.
- We are therefore looking at what might be called a "Buzz Lightyear policy": in relation to incremental cost, it is a matter of *to infinity and beyond.*

Justifications?

- Sub-constraints are really about technology policy. It is argued that costs of renewables will fall over time.
- It is also argued that it is an existential issue, like war. Central planning approaches are warranted because the priority is so high. Even market economies centralise when things get really tough (see 1940).

However:

- The costs of other technologies can also fall over time; and lower cost technologies yet to be discovered can emerge. Discriminatory support has *exclusionary* or *foreclosing effects* on these alternatives.
- There is a highly competitive position in war, stimulating innovation and productive effort. There is no equivalent for climate change: countries are partners rather than adversaries. Even in the face of existential threats, populations tire. The war metaphor is closer to *1984* than to reality (an invented enemy, to motivate and control the masses). Peace is not war.

What does this add up to?

- A policy of exclusion via the application of market power – see again the declining economic valuation attached to alternatives as renewables targets increase.
- Exclusion of:
  - Alternative narratives / heresies -- defensive stupidity.
  - Alternative technologies – lower returns for competing options, and lower payoffs for the discovery and development of such options. Economic dynamism is chilled.
- How does it end?
  - On past form: 'events', not arguments, will end it. Eg. shale gas discoveries.
  - Events occur and gaps open between narratives and realities. Abundant gas turns out not to be located only in politically risky places that raise security of supply issues (one of the pillars of the case for Electricity Market Reform). The North of England is really quite friendly.
  - Contracts move increasingly 'out of the money'.
  - But there is a material risk of the policy process ending in disorder (cf the Euro). The 'Tragedy of the Stranded Narrative'.

And here's the difficult bit

(from Scotsman conference on renewables, December 2011)

- Politicians tell simple stories (political narratives).
- They tell the stories because there is a public demand for them – see TV, the media, etc.
- Some of the simple stories are stories of the past (histories), but some are stories about the future.
- Politics has a tendency to turn 'favoured/privileged' stories about the future into 'plans'.
- But we just don't know how the future will turn out – there are myriad potential stories. *"About these matters ... [we] simply do not know!"* (Keynes, *The General Theory*)
- We therefore tend to 'over-constrain' future options.
- Result: less flexible, less adaptive economic systems.
- And worse: favoured stories lose credibility, creating disorder.

Uncertainty, plans and strategies

- The potential impact of carbon has only relatively recently been recognised. There is not, therefore, a long history of relevant research and discovery.
- Since the discovery process is likely only at a beginning, there is much to learn.
- This implies that uncertainty lies at the core of the economic problem to be addressed. *We expect to know more in the future, but we do not know what that 'more' will be (if we did we would know it now).*
- We can assign probabilities about future developments now, on the basis of current information, but can be near certain that those probabilities will change significantly over the coming years in ways that are, definitionally, unpredictable – and this is the guts of what we mean by uncertainty.
- Major implication: high uncertainty means high option values – it is costly to foreclose options, as current policies tend to do (by privileging a sub-set of technologies over all other possibilities/options). Ignoring this effect is like ignoring the effect of increased uncertainly on the demand for liquidity in financial markets.
- **High uncertainty makes exclusion/foreclosure of options particularly costly.**

Background factors for successful policy

- Let the set of economically valuable information / knowledge at time t be I(t). Over time, this set expands: $I(t+n) \supset I(t)$. This expansion is what the classical writers called 'economic progress.'
- The expansion of knowledge via 'discovery' is the main driver of economic welfare, and, in the context of interest here, it is key to low-cost decarbonisation. In the current context we are particularly interested in expanding the sub-set of I(t) to do with knowledge of potential climate change and its mitigation.
- *Competition is the most effective discovery process known to man.* (Mill, Hayek).
- The detail of the information/knowledge expansion is unknowable *ex ante*, but, from experience, the rate and structure of the expansion is influenced by prices and incentives and is amenable to assessment.
- Competition should therefore be central to climate change policy, but …
- Current policy tries instead to 'plan progress' on the basis of *current* information / knowledge rather than to promote competitive discovery of new information.

Signs of change; physical science
(from Beesley Lecture 2007, Energy Policy: A time to stop pretending?)

- Complexity in nature, Cambridge conference, August 2007, reported in New Scientist, 18 August 2007:
  - *… the discovery of tipping points has also unmasked growing uncertainty about the reliability of conventional climate models.*
  - *Our models are being over-interpreted and misinterpreted. They are getting better, I don't want to trash them per se. But as we change our predictions, how do we maintain the credibility of the science? Over-interpretation is already leading to poor financial decision-making. We need to drop the pretence that they are nearly perfect.* (cf Hayek)
  - *There are too many unknown unknowns for probabilistic predictions.* (cf Keynes *"About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know."*)
  - *Policy-makers think we know much more than we actually know. We need to be more open about our uncertainties.*

But progress is slow

- Consider reactions to discoveries of new information about shale gas deposits: strong tendency to downplay its significance for Electricity Market Reform, even though the discoveries knock away one of the justifications for the EMR ('gas fields tend to be located in unfriendly places, hence renewables will contribute to increased security of supply and lower price volatility').
- Ditto reactions to the 'pause' in warming. This should lead to an upward revision in perceived levels of uncertainty, but there is little sign of appropriate re-evaluations. It is as if uncertainty is thought not to matter very much: a temporary nuisance masking a relatively certain underlying trend. Even if this last view eventually turns out to be right, increased uncertainty *should*, rationally, still affect policies: anything else is wooden-headedness.

Alternatives I: when in a hole, stop digging.

- Call time on exclusionary policies that privilege some technologies and foreclose the adoption and longer term development of others.
- In other words, end the restrictions of competition inherent in existing policies.
- That, by and of itself, will increase the rate of expansion of the relevant part of the information set.

Alternatives II: develop new property rights, markets / market rules, and competition

- Protective stupidity involves “not grasping analogies”. May be expressed as “We have seen nothing like this before.”
- Whilst history never repeats exactly, the question ‘have we seen a problem like this before’ is frequently a key starting point in thinking about new problems in political economy just as much as it is in mathematics.
- The *Tragedy of the Commons* provides an obvious analogy: a common resource, land, threatened with over-use.
- Solution paths:
  - Private property, enclosures, incentives to conserve, markets and market rules, competition, etc.
  - Collectivization of agriculture.
- Compare and contrast the performances of the two approaches!
- These considerations lead to a political economy preference for cap and trade over carbon tax approaches, even though the two are quite highly substitutable on the textbook page (or, in what Ronald Coase, making reference to a now nearly defunct technology, called *blackboard economics*).

Alternatives III: fill the institutional gap

- A strategy based on establishing tradable property rights, developing market rule-books and market governance, and promoting competition will require a good deal of detailed technical work. This is the proper domain of delegated, independent regulation. See the sectoral experience of liberalisation in communications, energy, transport, water, etc.
- In the climate change area, and in environmental regulation more generally, there is an institutional gap. There is no analogue of Ofgem, Ofcom, Ofwat, …
- There should be.
- If the institutional void starts to be filled, there will be an increased requirement for Ofgem to resume its original role (in the performance of which it was highly successful, up to around end 2007). Abolishing or replacing Ofgem now would simply exacerbate institutional problems.

Alternatives IV: reframed technology policies

- Given the goal of increasing the rate of expansion of the relevant information set, have we seen a problem like this before?
- Yes: general promotion of research, development and innovation via, for example:
  - Support for university research
  - IPRs
- Note that:
  - The former is *ex ante*, and most effective when outcomes and methods are not closely specified (we have been moving away from this and towards neo-Stalinism in university administration, but could easily shift to reverse gear).
  - University research is a highly competitive, international activity (even though ownership and control are currently monopolised at the national level).
  - IPRs operate *ex post*: the return to the innovator is determined later, by how economically valuable the contribution turns out to be, as tested in markets.
  - Winners are declared after the race is run, not guessed at beforehand. The former is a far superior way of distinguishing winners and losers.

Alternatives IV (cont.): Create tradable rights to ex post prizes / awards

- Carbon pricing by and of itself opens the door to competition for the acquisition of valuable IPRs. We have already seen a large increase in innovative effort as a result, though biased by the foreclosure policies described above.
- If not sufficient, incentives can be augmented by *ex post* prizes/awards.
- Have we seen solutions like this before? Yes: the longitude prize; Louis XVI's prize *in response to alkali scarcity* for *'a simple and economical method of producing alkali from sea salt'* (which accelerated the development of the inorganic chemical industry). There is currently quite active use of prizes at smaller scale.
- No need to worry about free rider problems: in this case copying of innovations is positively desirable, because carbon is a global issue.
- If rights to claim prizes/awards are made tradable, that would open up the supply of private finance to would-be innovators, from every walk of life and across all potential economic activities: such incentives are universal and <u>not</u> targeted. Think 'National Lottery'.
- Significant thinking on the approach has already been done, but protective stupidity is a serious barrier to its adoption and use.

Alternative 5: Limit Leviathan's power to exclude/foreclose

- Since alternative 1 cannot be expected to be self-sustaining – it requires the leopard to change its spots – the most revolutionary strategy would be to:

  Subject public sector decision-making that can be characterised as an exercise of substantial market power to exactly the same standards of conduct as are currently applied in the private sector under competition law; and, in both cases, expose the individuals involved (not just the institutions) to financial or criminal sanctions.

- The effects would go much wider than climate change policy, but such policy would be a good place to start. Cheap, popular and effective?
- Note though that, in the face of this kind of radical challenge, protective stupidity tends to harden (become more fundamentalist), which may have costs of its own.

Final thoughts …

- Have we seen a problem like this before?
  - The Tragedy of the Commons
  - Malthus (population growth, land as a fixed input).
  - Jevons (shortage of coal, end of the industrial revolution in sight in the 19th century)
  - The Club of Rome (limits to growth)
  - Radio spectrum
- Pressure of demand on a scarce input.
- Exactly the sort of problem (utilisation of a scarce input) the price system deals with routinely. Conceptually easy. Solved in the past, in a range of different contexts, through a steady stream of innovations and market development.
- The big difficulties are political. Carbon pricing requires globally legitimate property rights (as, implicitly, do all other approaches – a global problem can't be solved locally).
- See *Reflections on global warming* (RPI, forthcoming, www.rpieurope.org).

Final thoughts (cont.)

- A scarce, fixed input (absorptive capacity of the earth's natural systems) will command rents. The greater the scarcity, the higher the rents. Rent seeking behaviour is therefore a key problem (it is a persistent destroyer of economic value and welfare).
- The higher are decarbonisation costs, the higher the rents. The higher the rents, the greater the likely global conflicts over distribution of property rights to rents.
- Low decarbonisation costs are therefore key for long-term success, politically as well as economically.
- Reducing costs should be a priority, which is not the current policy focus. If it were, the required regulatory adaptations would already have started.
- From experience, scientists, engineers, business people, economists et al can deliver, but can politicians?

Summary of alternative strategy

- ETS + Extensions (no more ad hoc subsidies).
- Delegated regulation for technical tasks (ETS+, markets, rule-books).
- Ex ante and (mostly) ex post funding for R&D.
- Ex post funding through IPRs: augmentation of current IPRs through prize system with tradable ‘lottery tickets’.
- One common set of standards of conduct governing the exercise of market power in both the public and private sectors.
- Politics strongly focused on (a) domestic and international property rights settlements (e.g. ETS allocations) and (b) funding (e.g. for prizes + basic research – more BIS than DECC).

Presentations and papers covering similar ground/issues

Energy policy: a time to stop pretending?, Beesley Lecture, London, September 2007.

What do today's regulators and regulatees need to know? Keynote address, Australian Competition and Consumer Commission (ACCC) Regulatory Conference, Gold Coast, Queensland, July 2008.

Environmental issues in the regulation of energy. The UK's renewable energy strategy: the return of the central planners? ACCC conference, Queensland, July 2008.

Discovering the value of water, Beesley Lecture, London, October 2008.

Why competition? 250 years of learning and forgetting in political economy. CCP/RPI Westminster Conference, March 2010.

Electricity sector governance in the UK, Conference on Governance and Regulation in the Electricity Sector: Balancing Independence with Accountability, Toronto, June 2010.

Where next for utility regulation?, Beesley Lecture, London, September 2010.

Learning from experience: what works well and what doesn't work well in achieving security of supply in electricity, PX events at Party Conferences, September/October 2010.

Competition law as a tool in regulated sectors, Ofgem seminar, London, December 2010.

The scope/limits of incentive regulation, Keynote address, ACCC Regulatory Conference, Queensland, July 2011.

EMR: complementing or substituting for market processes?, Energy Forum, London, October 2011.

Innovation, competition and de-politicised regulation: the only way to bring down the cost of renewables? Scotsman Conference, The economics of renewables: will green energy leave Scotland in the red, Edinburgh, December 2011.

The UK's carbon price floor policy, Letters and Notes on Regulation, Regulatory Policy Institute, January 2012, based on Chairman's comments on Paul Dawson's 2011 Beesley Lecture, *Achieving efficient carbon reduction: is the carbon price floor the answer?*

Are regulation-driven distortions jeopardising energy markets? Pallanza Group seminar, Sestri Levante, October 2012.

Regulation: Current issues and challenges, Keynote address, Commerce Commission Conference, Wellington, October 2013.

See: www.rpieurope.org