Innovation, competition and de-politicised regulation: the only way to bring down the cost of renewables?

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Initial general remarks

- In the 1980s and 1990s, UK energy policy found its way to a position based on twin pillars:
  - Much greater reliance than hitherto on markets (i.e. liberalisation of the energy sector)
  - A system of independent regulation, to promote and oversee the liberalisation process and to regulate those parts of the sector's activities where monopoly remained (chiefly pipes and wires).
- Proposition: the system worked well – not perfectly, but significantly better than what went before and offering prospects of further improvements in the future.
- Features were much studied and copied internationally, and the Economist described the UK as *"the poster child of global liberalizers"*.

New challenges and poor policy responses

- Climate change is certainly a major challenge.
- Security of supply is largely a red herring. There are vast reserves of fuels (e.g. of shale gas) both domestically and in very friendly locations. Ditto concerns about price volatility.
- But poor environmental regulation has undermined better energy regulation. How?
- Missing institutions and markets; policy to develop the relevant institutions and markets is limited in its ambitions.
- The consequence is a highly politicised environmental policy "all the way down" (i.e. heavy focus on means, not just ends).
- This has re-politicised energy policy (see renewables debates).

What are the consequences?

- A return to central planning -- never a British strong point and (in its extreme form) “even the Germans couldn’t make it work”.
- Creation of regulatory and political uncertainty:
  - Waiting for political decisions/commitments before investing.
  - Subsidies and big projects based on current information, hence high-costs.
  - An almost total lack of capacity to deal rationally with uncertainty and the future discovery of new information and knowledge. A lack of trust issue?
  - Unstable market rules and disorder: political objectives are target-driven, the rules-of-the-game are adjusted in the light of changing targets, and hence the rules (regulatory and legal frameworks) tend to be unstable.
- Chilling effects on ‘animal spirits’ and investment:
  - There are vast quantities of financial capital seeking safe homes at low yields (see UK bond prices) but current policy deters their allocation to energy infrastructure.

Policymaking folly

- Barbara Tuchman, *The march of folly, From Troy to Vietnam:*
  - *Wooden headedness, the source of self deception, 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."*
- Current renewables policy as folly?
- Undermining the EU ETS, and in UK leading to further policy disorder via ancillary policies such as carbon price support, designed to mitigate some of the distortions caused by 'picking winners'.
- Neglects affordability issues. Focus on substituting existing low carbon technologies for existing high carbon technologies will likely prove very costly and highly regressive in terms of income distribution (transfers from low income households to, among others, landed interests).
- See Yarrow, *The UK's carbon price floor policy* (forthcoming w/c 19 December www.rpieurope.org) .

What is to be done?

- Need to get back to the 'original Scottish solution': government facilitation of the development of institutions and frameworks favourable to 'progress', not government 'planning of progress' (see closing paragraphs of Hayek, *The Road to Serfdom*, 1944).
- Specifically required in relation to climate change mitigation.
- Roughly, the goals should be the 'twin pillars plus redesigned technology policy', rolled out into climate change policy as well as energy policy:
  - Independent regulation to promote environmental markets, to work on technical detail (eg. property rights development) and provide confidence for investment in unauthorised and unimagined (by Leviathan) activities.
  - Competition where feasible, not subsidies and planning.
  - 'Neutral' and more 'informationally efficient' innovation policy, e.g. via *ex post* 'prizes': it is a lot easier to pick winners *after* the race.

Why competition?

- See 250 years of learning in political economy (and a much longer historical experience of comparative economic performance), starting with the *Wealth of Nations*.
- Put simply, competition is much the most effective driver of information discovery and innovation known to man. Scientists, just as much as business people, compete hard for their rewards.
- Example of one of the mechanisms at work: competition makes innovation necessary for an organisation's survival, and 'necessity is the mother of invention'.
- Well functioning competitive markets (in CHG emissions, in energy, etc.) can be expected to promote lower cost (and likely *radically* lower cost) solutions via invention and innovation.

And here's the difficult bit

- Politicians tell simple stories (political narratives).
- They tell those 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.

Concluding thoughts

- ‘Renewables’ as a currently privileged story.
- Major progress might come from other developments. Nuclear fusion once a favoured story, now geo-engineering gets more air time.
- Maybe there will be myriad smaller, unimagined adaptations.
- But progress might also come from innovations in renewables:
  - Very high costs come from offshore, a locational choice driven by low energy yields per hectare (which limits onshore output capacity). A well functioning incentives system would place a premium on increasing energy yields per hectare.
  - Caltech researchers reported 10-15 fold increases in kWh per sq m via changing arrays of vertical axis wind turbines. Experimental, but indicative of possibilities.
- Promote competition, keep options open, and remember the possibility of black swans – see shale gas.