Imperial College London

Energy Futures Lab

icept

Will EMR work?

Robert Gross

Matt Black

Centre for Energy Policy and Technology

Imperial College

Presentation to the British Institute of Energy Economics, September 2010

Overview

- What does ‘work’ mean?
- Conflicting goals in EMR and what they imply
- A crowded landscape, policy change and conflicting ideologies in UK energy policy
- The key challenge: Galvanising investment
- Who are the investors?
- Can EMR help?
- Conclusions ...no cigar

What does ‘work’ mean
(or how might we judge if EMR worked)?

- The govt view of 2030*
  - Over 1/3 power from REs, nuclear established, CCS ‘widely deployed’
  - Power largely decarbonised, more secure, less fossil
  - New entry eased, costs falling
  - consumers active, effective demand-side action

- Should we add?
  - A more robust ETS?
  - Enough new CCGT to avoid a ‘capacity gap’?
  - A UK industrial base?
  - The Daily Mail assuaged?

* EMR White Paper Box 1

Goal conflict 1. fairness or investment?

- ‘Making the existing market *fairer’*:*
  - to consumers, who want investment to take place in the most cost effective way
  - to low-carbon generators... at a natural disadvantage
  - to new entrants, who struggle to sell their electricity in a market dominated by six big firms

- Ensure investment ‘at the required pace’ to**:
  - ‘ensure the future security of electricity supplies;
  - decarbonise... electricity generation; and
  - minimise costs to the consumer’

*EMR WP, Foreword

**EMR WP, Chapter 1

Imperial College London

Goal conflict 2. New entry and new tech – why, what and how?

- Is new entry a goal in itself?

- Who are the new entrants?
  - Financial Investors – e.g. Institutional Investors
  - Strategic Investors – e.g. Energy and Supply chain co's
  - Small players – e.g. small companies, community schemes
  - The public?

- Which technologies do we really (really) want?
  - One size fits all but some sizes fit better than others, is the priority nuclear, big RE, small RE, or CCS?

Hence a wide range of challenges

- Fill the capital gap created by limits on the big 6, both balance sheet and geared, to deliver £110b*
- Create a realistic investment case for new nuclear
- Reduce cost of capital for all low carbon generation
- Encourage new entrants, big and small
- Reform the RO to reduce complexity, price risk, costs
- Assure and accelerate progress to 2020 RE targets
- Build peaking plant as/if needed to sustain margins
- Encourage more demand side action
- Mobilise consumers

* £75b in new generation, EMR WP, Chapter 2

Imperial College London

A crowded landscape – ideological conflict and short term uncertainty

Economic idealism vs technology pragmatism

- FiTs and obligations undesirable distortions only tolerated until carbon is priced
- FiTs and obligations are investable, cost effective, efficient means to beget learning
- Policy should always be technology neutral and avoid 'picking winners'
- Policy must target technologies - Why not pick winners?
- CPS is the centrepiece of EMR. Not perfect but a step in the right direction
- FiTs are the centrepiece of EMR. Not perfect but a step in the right direction
- FiTs are a distortion and a distraction
- The CPS is tax, irrelevant to investment, damaging to consumer acceptance
- The EPS is irrelevant We agree!

Short term uncertainty

- Electricity Market Reform
  - FiTs/CPS/EPS/Capacity Payment
  - Overlap, interaction, opposition
- Renewable Obligation Banding Review
- Ofgem Retail Market Review
- Proposed Green Investment Bank
- National Infrastructure Plan

Imperial College London

Investment: the real challenge

What do we need?

- £75b required for new gen capacity to 2020*
- £40b alone for offshore wind ?**
- Current big 6 spend around £5b/year (already a stretch, see below)
- Dash for gas was about £11b total
- Total market value of all existing UK generation plant is c. £50b***
- Huge plans for economic infrastructure at UK, EU and global level
- UK policy/investment environment attractive vs peers?

•EMR WP, Chapter 2 ** DECC Roadmap (at current prices) *** SSE, An Energy White Paper

Imperial College London

Investment: the issues

Why can't the big six deliver?

- Already historically high capex plans
- Scale of investment required too large
- Balance sheets constrained
- Limited ability to raise new debt or equity

Who are the other possible investors?

- Energy/ Utilities – including oil/gas firms (especially part state owned)?
- Supply Chain – OEMs and big engineering firms; independent and foreign developers?
- Financial Investors – pension funds, insurance co's, sovereign wealth funds and banks (including Asian development and export support banks)?
- Expanded ownership – Joe public, start up companies, community groups?

Pension and insurance funds: really?

Long term option not short term solution

- Infrastructure as a small allocation of investors portfolio
- Renewables as a subset of infrastructure
- Skills, competence and conservatism
- Technology risks – real and perceived
- Regulatory risks in a policy driven market
- Currency diversification
- Need for standardised products?

Imperial College London

From short term to long: What is important?

1. Enabling effective *build* consortia; both cash and skills rich, who can share risks to allow finance & build of major projects

2. Enabling (eventual) refinancing at low risk rates

Hence

- Administrative simplicity and clarity pre-investment
- Institutional/counterparty credibility
- Real liquidity OR volume obligation
- Avoiding new risks – e.g. off-take, policy interaction
- Maintaining political credibility – 'believability gap'
- Transitional arrangements that avoid hiatus

Beyond EMR – policy, institutions and finance?

- Public finance institutions key in offshore wind finance elsewhere in Europe
  - Both as source of capital and risk transferral
- Similar role required of GIB in short term to stimulate build stage RE financing in UK?
- GIB required to catalyse refinancing / secondary market for RE assets?

Conclusions: No cigar yet

- Short term impact on investment marginal/negative
- Long term impact positive but not overwhelmingly so
- Fundamental issue – trying to serve multiple objectives, not just the finance barrier
- Not helped by diversity of stakeholder views/preconceptions

- Substantial changes to the policy landscape mean delays inevitable
- Perceived regulatory risks remain large
- Institutional investment unlikely to be sizeable in short term
- A step change in investment could be driven more by public financial intervention rather than regulatory or market reform

- EMR is fine as far as it goes, but a far reaching review of the investment proposition is a greater need, both now and in future