Risk management of power sector decarbonisation

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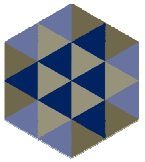
About E3G



- E3G is an independent not-for-profit organisation, established in 2004, that works in the public interest to accelerate the global transition to sustainable development.
- European organisation with a global outlook. Offices in London, Brussels, Berlin, Washington DC. Strong engagement with China.
- Thinktank analytical capacity, coupled with skillsets in diplomacy, political strategy, advocacy and campaigning.
- Invest in understanding politics as well as policy. Work to create alignments of interest that can enable decisions to be made.

My background:

- Senior Policy Advisor, E3G and Policy Research Associate, Scottish Carbon Capture and Storage. Member of Advisory Council of ZEP: European Technology Platform for Zero Emission Fossil Fuel Power Plants
- Previously at UK thinktank Green Alliance, also UK Board Member and Vice President of European Environmental Bureau – Europe's largest network of environmental NGOs

Some UK context

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- UK independent Committee on Climate Change recommends that power sector emissions are reduced to average of 50gm/kWh by 2030.
- **Why?** > "Power Sector first" strategy due to need for investment in new capacity anyway. Significant gas build to date means limited scope for further coal-to-gas switching. A faster timescale than most of EU.
- UK CCS Commercialisation Programme nearing project selection. At least 5 full chain bids received, integrated with EU NER300 funding.
- Economic crisis affecting bank lending > government looking to state guarantees to enable investments to proceed. Also a role for Green Investment Bank.
- Energy Market Reform seeking to provide framework under which different low-carbon technologies can compete on price in the 2020s. Suspicions of this being cover for nuclear subsidy, but an attempt to align technology support with a competitive challenge.
- Gas lobby seeking 'security of demand' in face of multiple challenges to new investment. Risk that this results in capacity mechanism and lock in to unabated gas without CCS. Is this really what they want?

Technology specific support mechanisms remain critical to decarbonisation in GB alongside a lower carbon price

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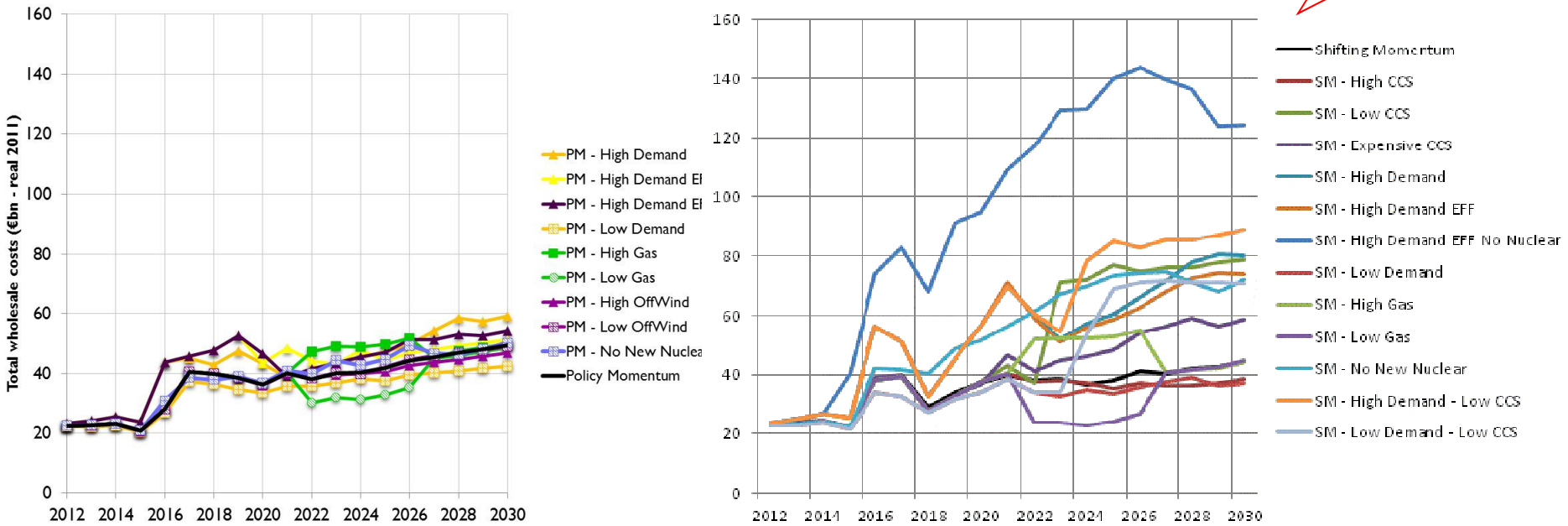
GB Wholesale Costs (€bn)



Wholesale cost in Technology Support scenario baseline is slightly higher yet looks more resilient to uncertainties and shocks

Source: E3G / Redpoint modelling

In GB, carbon pricing looks like an unattractive instrument to achieve on-going decarbonisation

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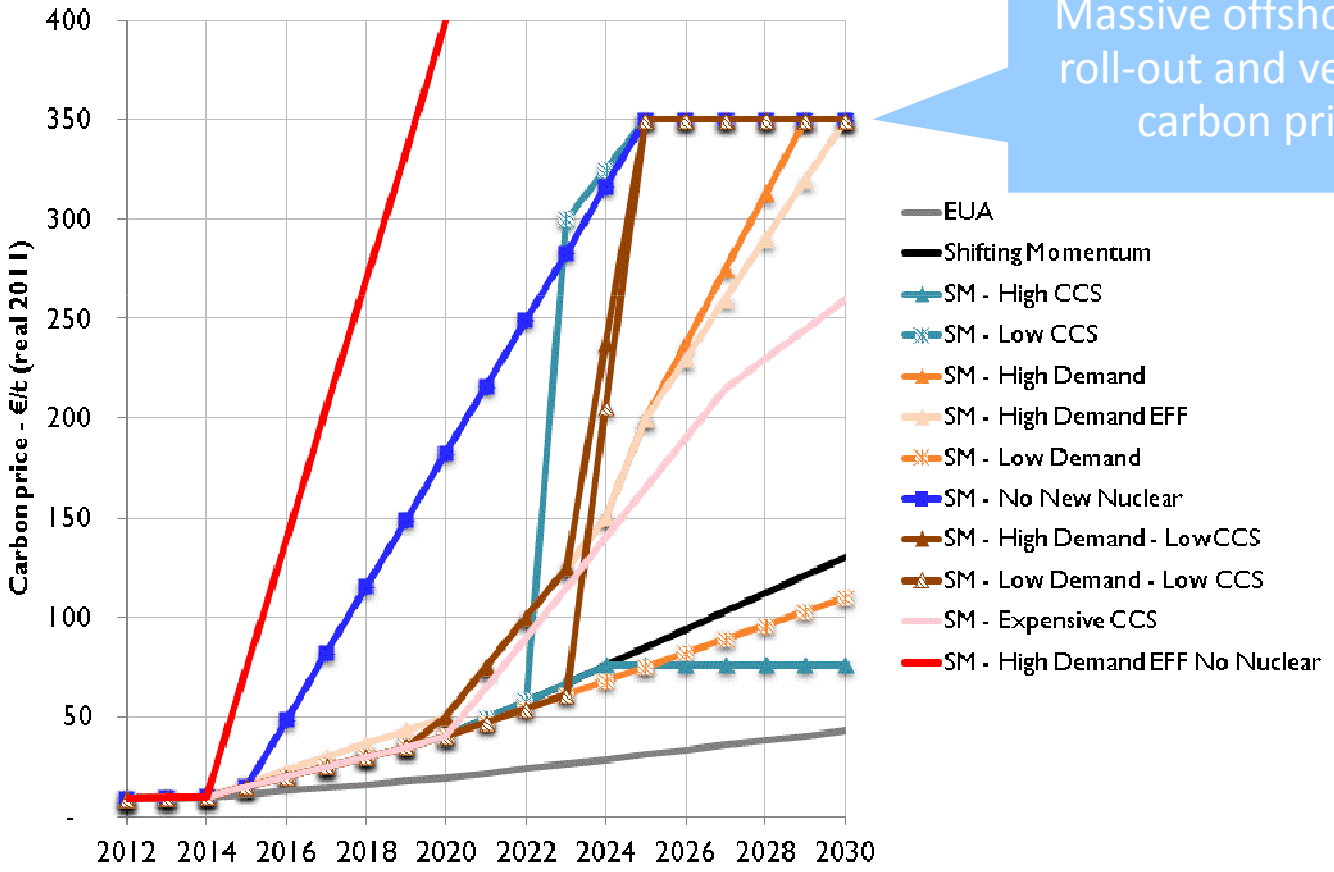

Low CCS = Policy failure
Massive offshore wind roll-out and very high carbon prices

Source: E3G / Redpoint modelling

Switching to a high gas policy now might increase risks for investors due to gas volume uncertainty

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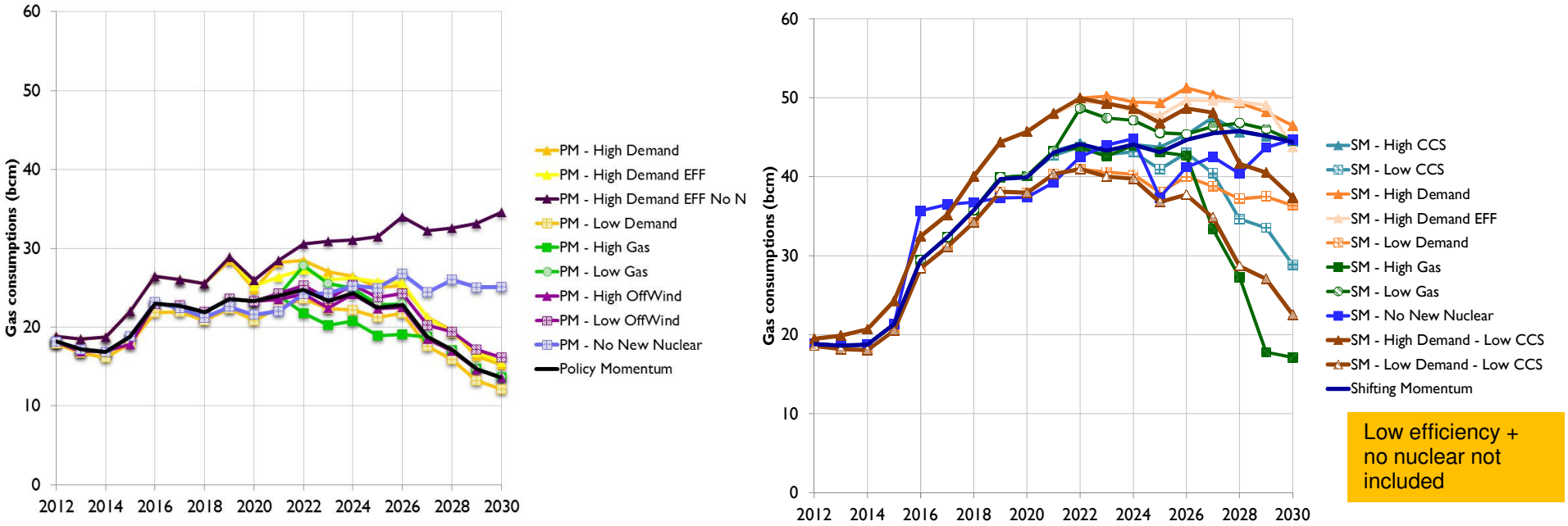
GB – Power Sector Gas Consumption (bcm)



Continued demand for high volumes of gas depends on both the successful commercialisation of CCS technology and gas generation being cheaper than coal

Source: E3G / Redpoint modelling

Coal AND Gas with CCS...

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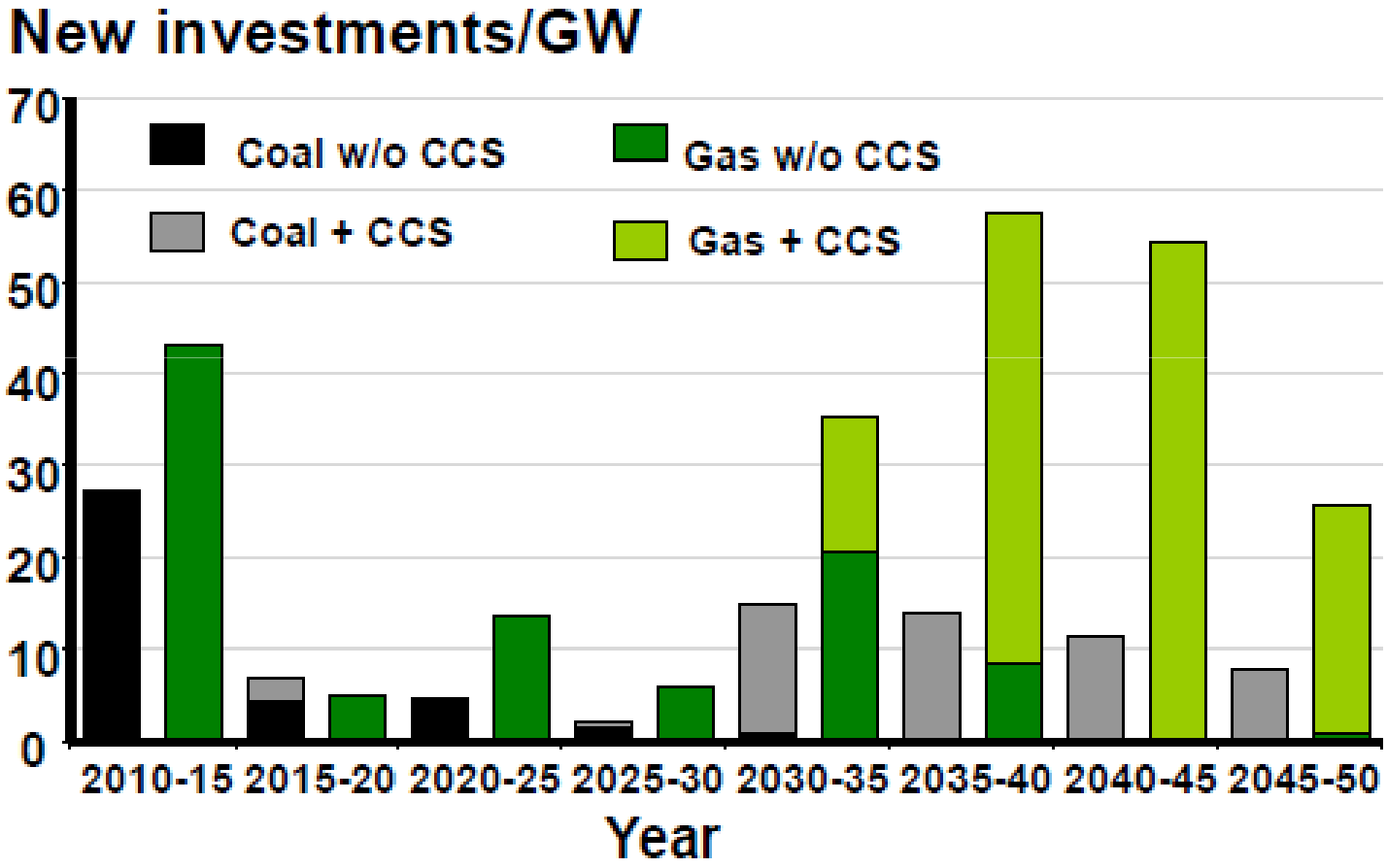
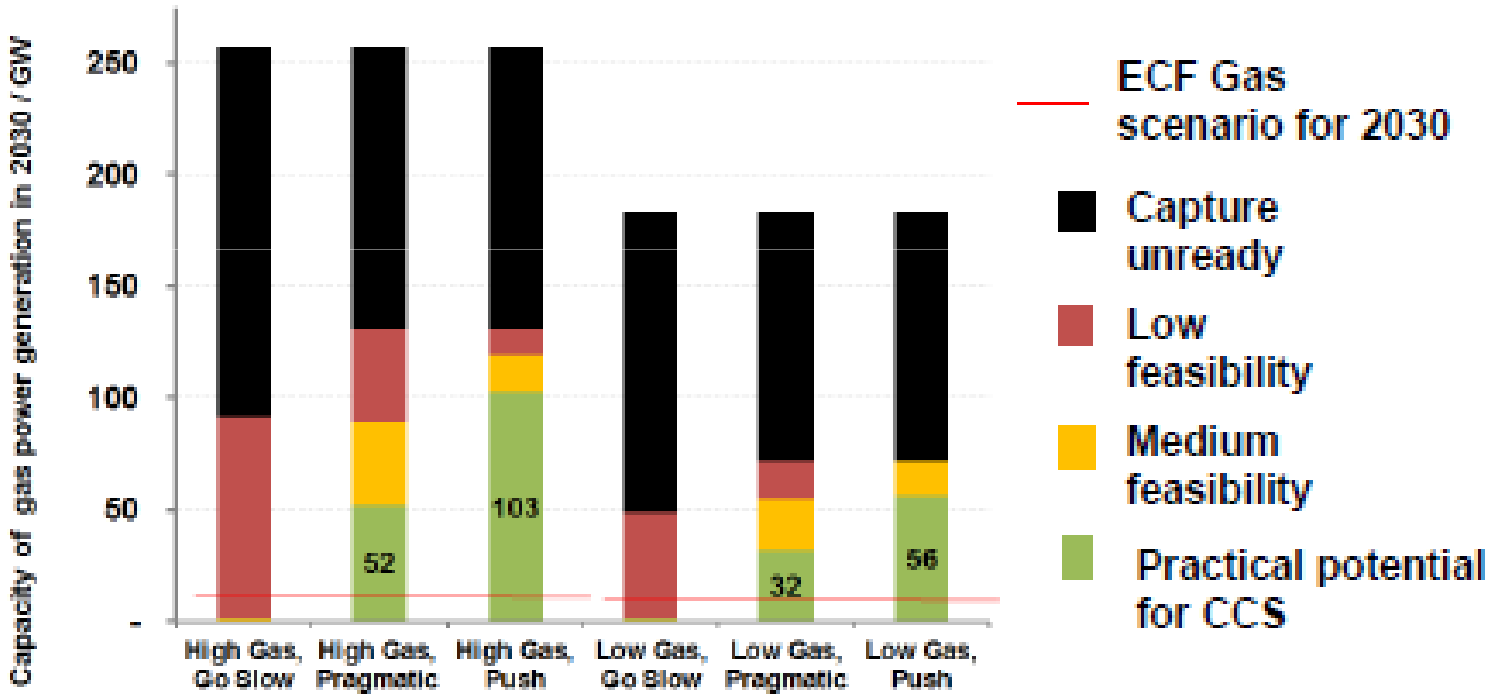


Source: European Commission Energy Roadmap 2050, Diversified Supply Technologies scenario

Risk of locking out CCS...



Source: Element Energy / Green Alliance study on practical potential for CCS on gas

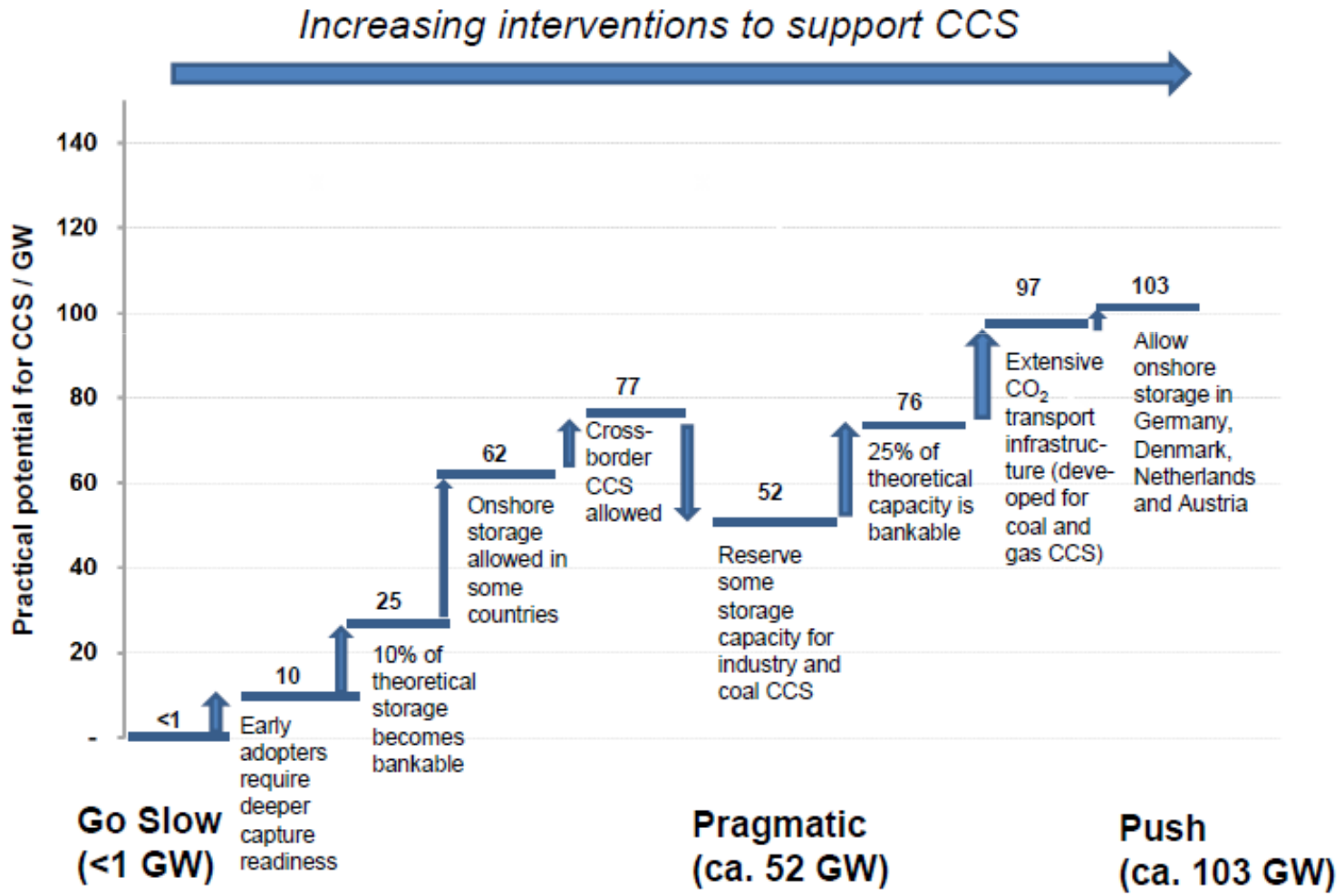
Distribution of gas plant

Practical potential for CCS on gas in 2030

Plant unready for CCS in 2030

Source: Element Energy / Green Alliance study on practical potential for CCS on gas

Practical steps to enabling CCS on gas



Source: Element Energy / Green Alliance study on practical potential for CCS on gas

UK experience: Green Investment Bank and North Seas Grid advocacy

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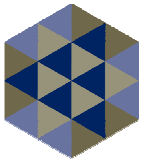
- **Green Investment Bank**
  - 2008-09 analyses of options for UK green fiscal stimulus / improved leverage
  - Advocacy led to Conservative Party establishing commission when in opposition
  - GIB in election manifestos
  - Legislation post-election , establishment of shadow delivery body
  - State Aid Approval awaited
  - Borrowing powers tied to improved government accounts
  - Fought all the way by Treasury

- **North Seas grid**
  - North Seas Countries Offshore Grid Initiative proposed by energy ministers in 2008
  - 10 countries signed informal agreement to cooperate
  - Working groups examining technical, planning and market arrangements
  - But lost political momentum / ownership
  - E3G working with industry to launch NORSTEC initiative on offshore wind and grid
  - Backing from PM David Cameron

Thoughts for discussion 1



- Need for greater awareness of impact of perceived neutral language: ‘decarbonisation’ or ‘low-carbon transition’ have negative impacts.
- **We** must improve the alignment of energy security and low-carbon objectives:
  - Climate security will only be achieved if energy security is too (short term: political and business imperatives).
  - Energy security will only be achieved if climate security is too (medium term: disruptions to systems and markets, from local to global).
- Too many utilities are currently exhibiting an unwitting sadomasochism: they would prefer for the global climate negotiations to fail so that they can continue with existing approaches.
- An immediate challenge of rescuing something usable from ETS, but need to remember it is a means of softening the costs of change, not a quest for economic purity. More than one policy instrument will be required.

Thoughts for discussion 2

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- We need to create mutually reinforcing drivers for continued investment in decarbonisation of European power sector – not possible to sit back and react to global negotiations, but EU domestic actions can actively shape them.
- EU policies aimed at creating a single energy market need to focus on practical measures that will deliver energy security and enable continued rollout of low-carbon technologies:
  - interconnection,
  - integration of demand reduction,
  - CCS demonstration and CO2 infrastructure development including characterisation of geological storage.
- Getting these practicalities right will help prices to converge.
- But the EU push for single market can't try to short-circuit the differing investment profiles of member states: if pushed, energy security concerns will be given precedence, at the expense of climate targets or the functioning of a single energy market.

Thoughts for discussion 3

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- UK can still be a venue for policy innovation – it has an opportunity to integrate demand reduction and dynamic energy efficiency measures into a liberal market setting. This would be a valuable experience for the EU.
- The rest of Europe would benefit from a more proactive projection of the CEE experience of managing transition.
- Incumbent interests in the energy sector face the challenge of evolving business models or having change forced upon them.
- We must work together to proactively create new value propositions, that help move beyond cost impositions. CCS, EOR, industrial applications all feature here.
- Cost per tonne avoided not necessarily the best metric: value of CCS on industry high for job retention and re-industrialisation. Value of CCS on gas higher in terms of clean MWh/tonne versus CCS on coal.
- Market signals required, not just price signals.