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Splitting the market?

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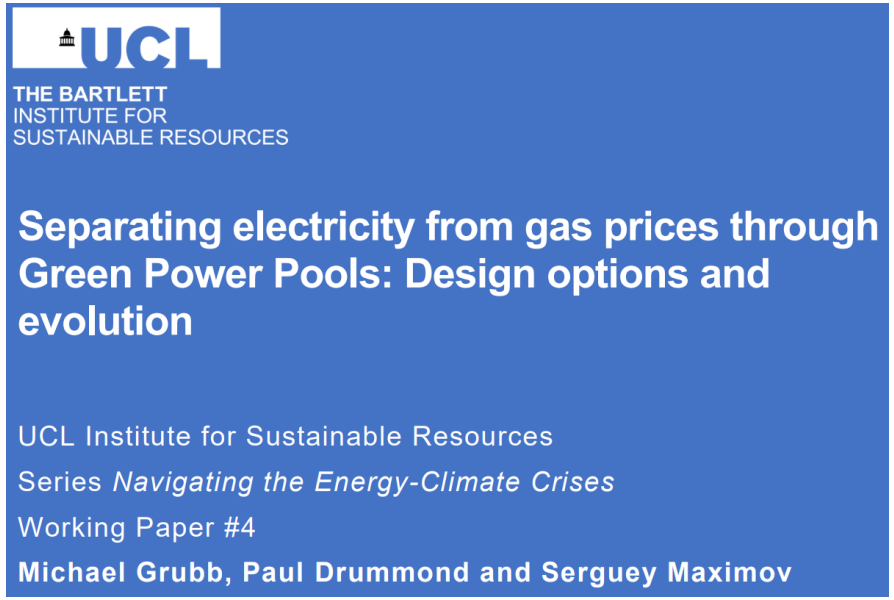
‘Split market’ ideas

- 1. The fully split market – Keay and Robinson 2017
- 2. Linking CfDs to a green power pool – Grubb and Drummond 2022
- 3. Issues arising
- 4. Is any of this necessary? De-facto split market

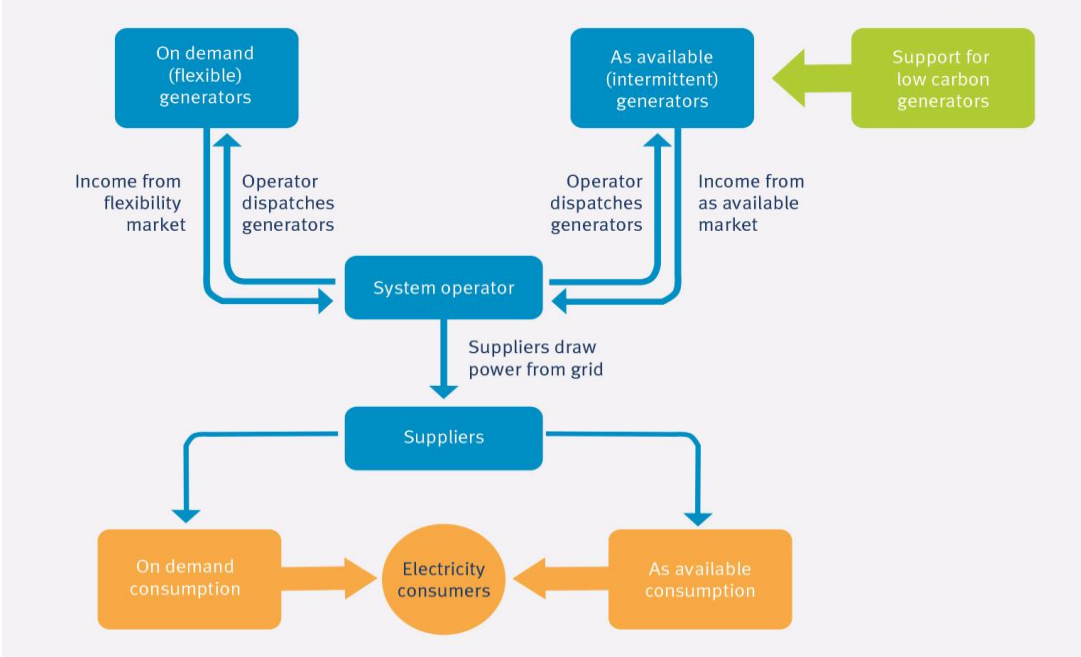


The ‘pure’ split market of Keay and Robinson

Key points/claims/rationale

- Promotes more efficient use of conventional ‘on-demand’ and renewable ‘as-available’ generation by directly exposing these markets to consumers and allowing them to choose between them
- Eventually leads to investments recovered solely from their respective markets
- Allows the overall system to be optimised for consumer preferences - consumers to decide how much to pay for secure electricity supplies
- Enables consumers to choose other methods of securing supplies, such as storage
- Security of supply would in effect be privatised, ESO only responsible for system stability
- **Provides an ‘exit strategy’ for government involvement**

Malcolm and Keay – the Two Market Approach

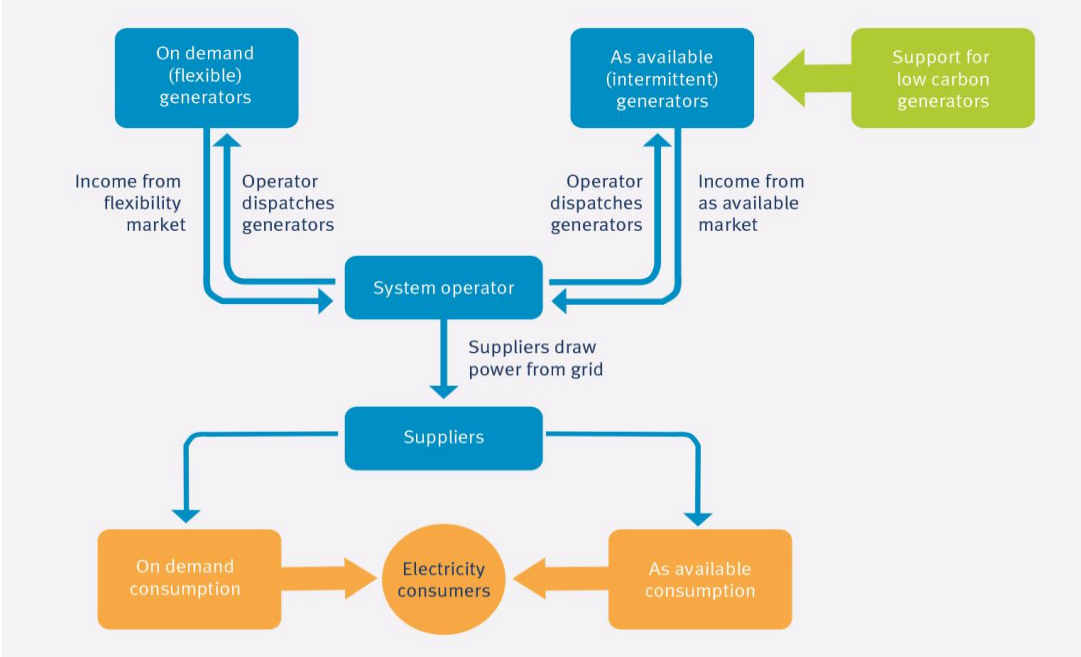


The ‘pure’ split market of Keay and Robinson

Issues not discussed

- Paper is 5 years old and largely conceptual. So…
- Locational pricing and constraint management not explicitly addressed
- They suggest the proposal is compatible with either single buyer or bilateral wholesale market designs
- Predicated on VRE needing subsidy, rather than a world of high cost gas and low cost VRE
- Does not discuss how system stability would be sustained – for example in a long Dunkelflaute
- No discussion/quantification of consumer engagement
- Does not consider equity or political concerns

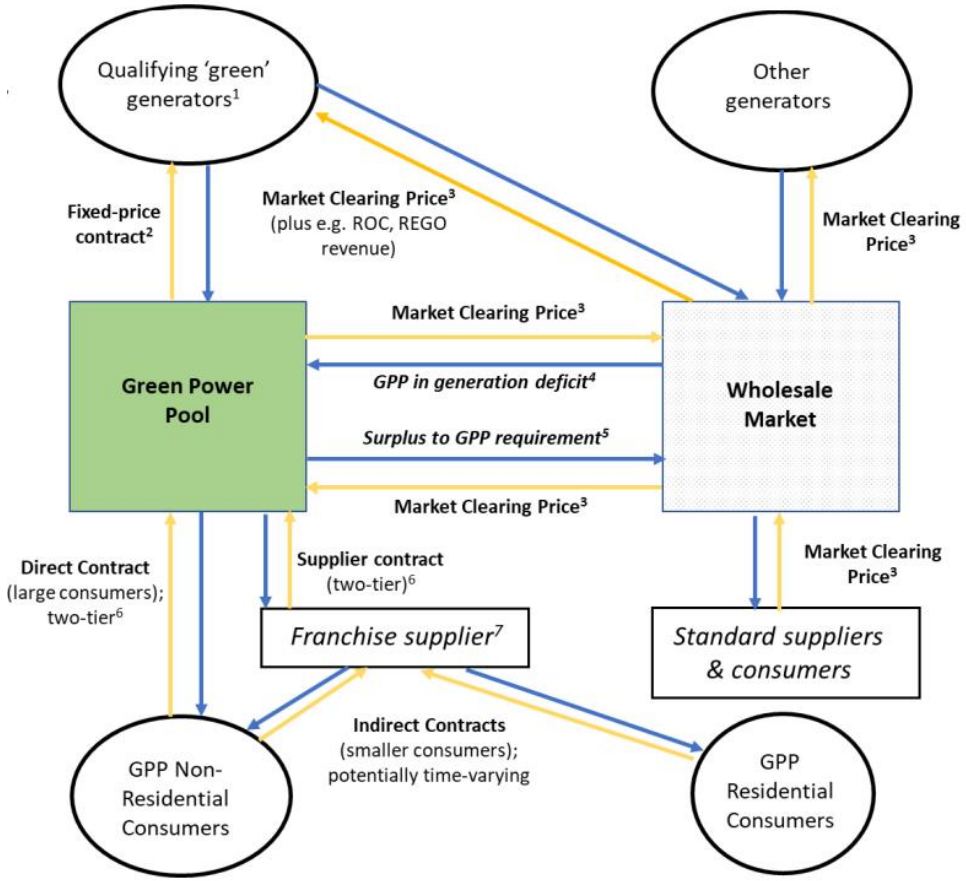
Malcolm and Keay – the Two Market Approach



Pure split markets issues

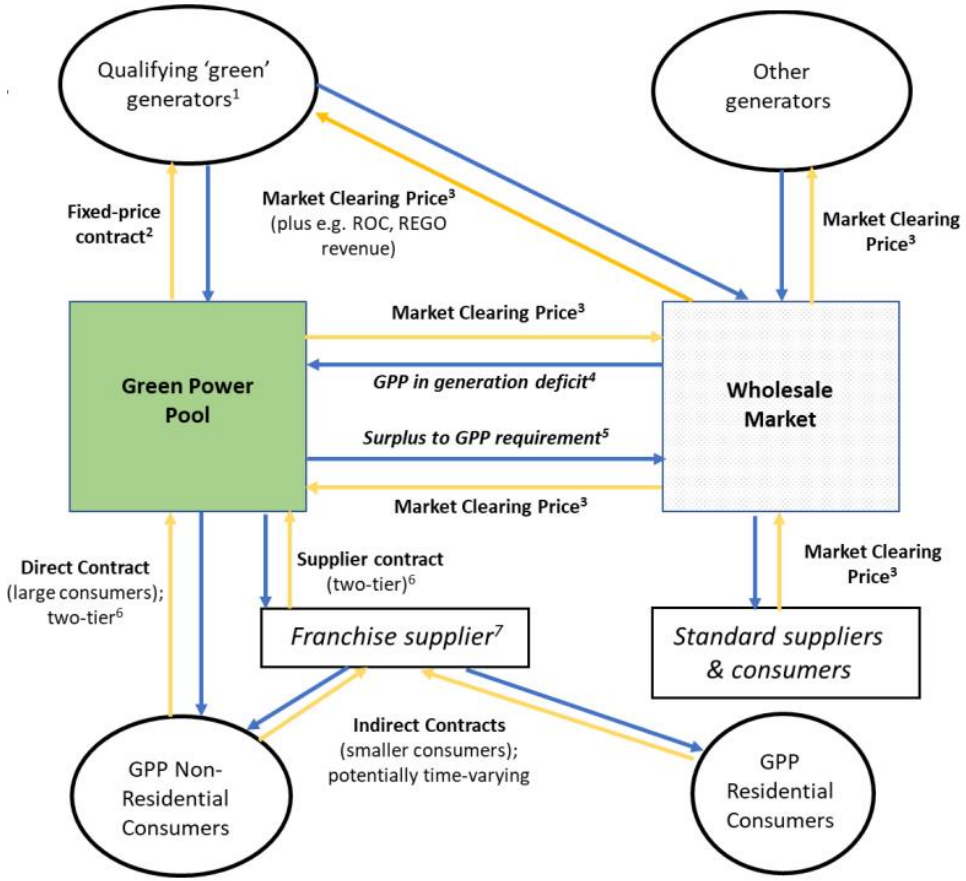
- Consumers would face complex market/responsibility for their own security of supply
- To an extreme – poor consumers choose unreliable electricity that cuts them off when it is cold. Is this a good idea?
- If they don't/can't then how does this differ in any material sense from demand response/ ToU pricing etc?
- Who is writing contracts with whom – suppliers presumably contract for generation but on the basis on unknown levels of demand? Counterparty credibility? Re-risking investment
- Requirement for much more automation than at present and unproven technological advances
- No quantitative modelling of costs and gains
- Radical changes to the regulatory environment will take several years, during which investment could be interrupted
- Is an 'exit strategy' from government intervention a primary policy goal?
- Why? Is it realistic? When has this ever been the case?

Green power pool based on contracts for difference, Mike Grubb et al



- Proposal to continue to provide CfDs to generators but split downstream market
- Explicit goal being to retain benefits of CfDs (cost of capital) but offer low cost power to consumers – an evolution
- Initially re-direct the volume of CfD-derived electricity to two groups of high political and welfare concerns:
- Industrial consumers whose international competitiveness is threatened by GB prices
- 'Fuel poor' domestic households
- Next could come green tariff customers and EV owners, those with heat pumps etc
- Who/how to target is a political choice

Green power pool based on contracts for difference, Mike Grubb et al



- In time, the green power pool operator would purchase renewable and nuclear power generated
- Pool operator offers contracts to consumers based on average cost
- Pool operator buys from conventional market if needed, sells to conventional market if needed
- Over time outside GPP volume reduces. Unclear why. How impacts cannibalisation.
- Proposition does not explicitly engage with locational pricing or detail of CfD design
- Or with structure of residual/ no-GPP market (bilateral or single buyer)

Is any of this really necessary?

- The existing CfD scheme remunerates non-fossil generators on the basis of long-run marginal costs – it is a de-facto split market for generation
- Redirecting CfD paybacks does not require a GPP (Grubb acknowledges)
- Real-time of day wholesale prices are already available to households – albeit not the ability to choose to be cut-off when it is cold and dark
- Larger consumers can already enter into PPAs and interruptible contracts
- How much time do we have to re-imagine markets/pursue Platonic ideals?

What are the most important issues?

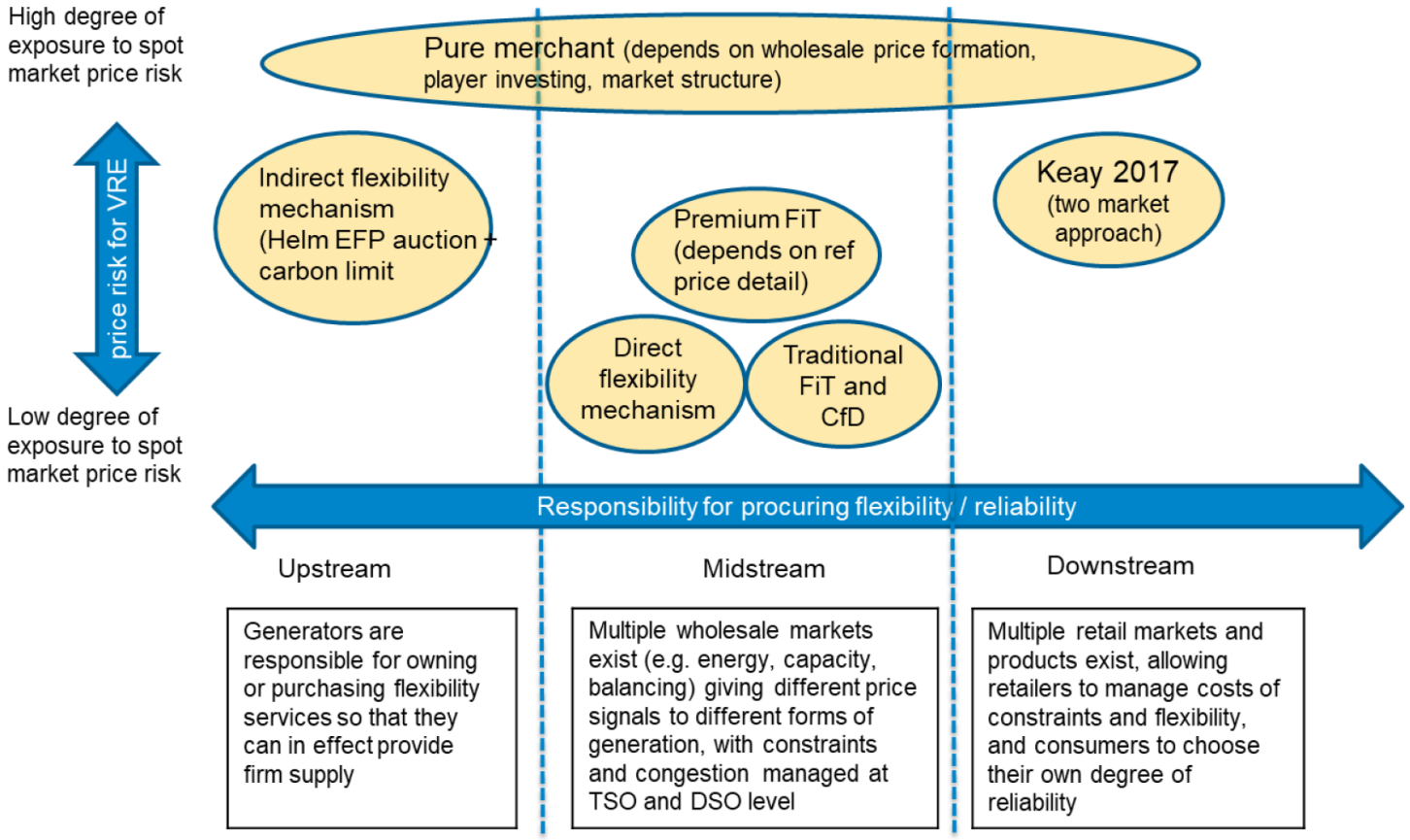
- Maintaining and accelerating low carbon generation investment
- Retaining the lowest possible cost of capital
- Bringing forward new sources of flexibility, in particular the bulk energy stores that will be essential for a VRE dominated low carbon system
- Overcoming network constraints and accessing resources through strategic investment
- Overcoming planning constraints
- Bringing prices down for ALL consumers
- Reducing consumption through energy efficiency (last not least)
- Is splitting the market a side-show, a distraction or displacement activity?

Additional slides

Where in the stream lies the risk?

- Thinking about risk allocation upstream/downstream system helps

Figure 10. Mapping of options by risk exposure and responsibility for procuring flexibility



Policy options reviewed

Option	Pros	Cons
1. Changes to current CfD design – price floors	• Continues to provide investment security for bulk low carbon generators, addressing price cannibalisation risks from their perspective	• Limiting exposure to price cannibalisation reduces incentives for floor price contracted plant to help with system balancing – though value stacking may help moderate this effect
2a. 'Pure' energy market	• Allows as wide a range of players as possible to access the market, may stimulate competition & innovative solutions	• likely to under-deliver energy needed as price will not meet cost at target delivery volume • 'Spiky' revenues not well suited to the expected need for high CAPEX investments (e.g. storage, interconnectors etc.) • May attract instead low CAPEX solutions such as OCGT, perpetuating problems of status quo – won't do this for energy
2b. 'Segmented' energy market (Keay)	• As above, but also allows greater degree of price discovery between low-carbon 'as available' variable generation and 'on-demand' provision of reliable energy at times of peak demand. Is this truly important given that most of the low carbon options are not "on-demand"?	• As above – may not directly address price cannibalisation
3a. Direct 'flexibility' mechanism	• Directly incentivises additional demand during periods of high supply, helping address the problem of price cannibalisation, and could be designed to create a price floor leading to greater levels of investment security for VRE so they do not need to be so fully de-risked in the CfDs	• Adds additional complexity to the market by introducing another market mechanism (though could potentially look to replace the CfDs if the price floor was considered sufficiently robust by investors)
3b. Indirect flexibility mechanism (Helm)	• Simplifies the market structure by replacing CfDs and capacity mechanism with an all-in-one mechanism	• Solution is focused on capacity sufficiency problem, but does not directly address the oversupply / price cannibalisation problem
4. Centralised procurement	• Creates certainty for investors, and maximises static efficiency by reducing investment risk and costs of capital • Acknowledges that direction of procurement is now largely societally determined – i.e. zero or mostly low carbon energy (maybe) depending on policy	• Fully specifying the generation mix transfers risks to consumers or tax payers if predictions on energy demand or technology costs turn out to be wrong – solution may not be dynamically efficient

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