

Splitting

opinion

Is splitting the wholesale market the best way to deliver an affordable energy system?

Executive summary

Today's wholesale market has seen consumers face huge prices for the energy they use, and financial intervention from the government has been required to help people afford their bills. This has been driven in large part by high gas prices setting the price of electricity. Market-splitting could be one way to resolve this problem, by making sure that the lower running costs of renewable energy flow through into people's bills.

While differences between proposals exist, at their core they can deliver reductions in the wholesale cost of electricity by changing how generators are paid for their electricity. Renewable generators would be paid a fixed price for their power that better reflects their cheaper running costs.

We are supportive of what market-splitting proposals are setting out to achieve, but they would need to be carefully implemented to avoid complications that could harm some consumers. Particular difficulties arise depending on how you choose to split the market, and if market-splitting is used to target cheaper renewable electricity to specific consumer groups. We see risks in using wholesale market regulations to define and restrict how you deliver financial support to households.

It could be that cost savings from cheaper renewable electricity could be used in part to fund a wider suite of bill support for consumers in vulnerable circumstances. We will be setting out options on bill support mechanisms in March 2023, via our project with Public First and the Social Market Foundation.

Executive summary

- 1 Expanding the Contracts-for-Difference regime could deliver lower wholesale costs through existing schemes.** This would avoid some of the complications posed by physically splitting electricity markets, and reduce the potential of an investment hiatus.
- 2 Complications could arise from using targeted renewable energy supply as an alternative to financial support with energy bills.** To avoid adverse impacts, targeted supply would have to form part of a wider package of support to ensure affordability.
- 3 Better data is needed in order to effectively target long-term support.** There remain large problems with identifying households that are in need of support.
- 4 In the long-term, innovation is needed to bring down the price of low-carbon flexibility and long-duration storage.** This is vital to phase out gas power and avoid prolonged periods of high prices at times when renewables output is low.

Introduction

As the statutory advocate for consumers in the energy sector, Citizens Advice is considering how reforms to electricity markets can help to deliver an affordable and sustainable energy system that works for consumers. In the coming months, we will be publishing a series of discussion papers examining these reforms in detail.

One type of reform which has gained a lot of attention is to do with splitting the wholesale electricity market into two. Proponents claim it would reduce the wholesale cost of electricity, make renewables cheaper to build, and allow for a long-term alternative to financial support for people's bills. Market-splitting proposals are novel ideas that are still in their infancy, and there are a handful of potential models to consider. Some create fully split markets, while others use contracts to decouple electricity prices from gas prices. We have chosen to focus primarily on the Green Power Pool proposal for a dual market developed by Professor Michael Grubb at the UCL Institute for Sustainable Resources, but some consideration is given to alternative proposals.¹

This discussion paper outlines some of our concerns around how a split wholesale market could be implemented. It is deliberately provocative in places and we welcome feedback on the findings via the following email address: energystrategy@citizensadvice.org.uk. It is intended that by spelling out some of these concerns that they can be better addressed as proposals are developed.

In researching this discussion paper, we have spoken to a number of engaged stakeholders from independent research organisations, as well as conducting our own desk-based research. We thank all participants for their time. Full acknowledgements can be found at the end of this document.



Case for change

As we move towards net zero, the nature of our power system will change. This presents a number of challenges to the way the current wholesale electricity market works. The energy price crisis has put some of these challenges into stark relief.

Expensive gas still sets the price of electricity

Over the last few years there has been a stark increase in the price of gas, which has driven the rise in electricity prices. This is happening despite a growing share of the UK's electricity coming from renewables. The cause of this is down to the way in which electricity is priced.

A lot of power is bought and sold according to something called marginal pricing. A simplified explanation is that this means all generators receive the same price for their electricity, set by the most expensive generator that is running at any given time.

This means that at times when gas has been required to run, the price of electricity is set by the price of gas. Although the UK has a large amount of renewables, gas-fired generation is often needed to ensure there is sufficient supply at any given time. In 2019, gas set the price of electricity in the UK 84% of the time, despite providing less than half of total generation.²

Thankfully, most new renewables that have been built since 2017 operate differently, and receive something called a Contract-for-Difference (CfD). CfDs mean that these renewable generators get paid a fixed price for their generation, which is not linked to the wholesale price of electricity. However, they still only make up a small amount of today's renewables fleet (around 15%).³

Market splitting would change how some generation is priced, and mean that marginal pricing won't be applied to all types of generation. This would bring down overall electricity costs.

The price of electricity has closely followed the price of gas

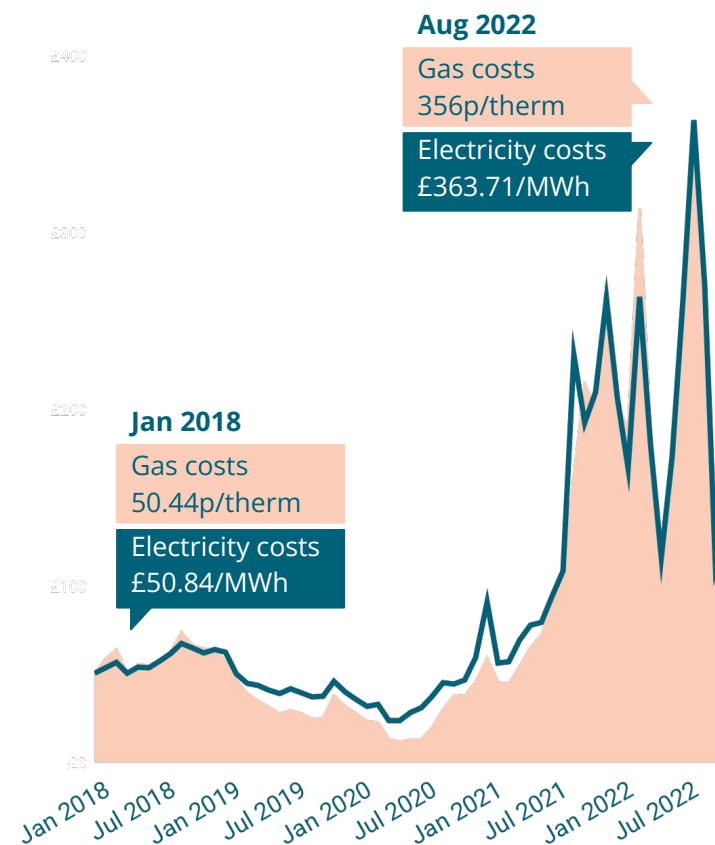


Figure 1: Over the last year, you can see how the rise in gas prices has been closely mirrored by the rise in electricity prices. Data taken from Ofgem.⁴ Both sets of data show the monthly average of day ahead contracts.

i What is a 'CfD'?

Contracts-for-Difference, or CfDs, have been the driving force behind the UK's growth in renewables. Developers place a bid in an auction to be paid a fixed price for the electricity they generate from a project over 15 years. If their bid is successful, they can develop the project in the knowledge that it will receive a steady return for its power. The certainty this provides means that they are able to more easily finance the building of renewables.

It also means that when wholesale electricity prices are higher than these fixed prices, generators on CfDs effectively end up paying money back to consumers. Currently, only 15% of the renewables fleet are covered by CfDs, as the mechanism was only established in 2014.⁵ In the next few years this will rise substantially.

£2.9bn

The amount that renewables on CfDs are forecast to pay back in the first 6 months of 2023.⁶

Case for change

Renewables are cheaper to build if they have steady returns

Since renewables don't need to buy expensive fuel to run, most of their costs come from building them in the first place. It is easier for developers to finance these upfront costs if they have certainty over how long it will take them to recover them. This means it should be cheaper to build renewables if they are paid a steady and predictable price for their power.

As explained on the previous page, most renewables that get that built these days have something called a Contract-for-Difference (CfD) that does exactly this. Developers sign a contract where they agree to be paid a specific price for their generation.

Some proponents of market-splitting highlight that it could ensure renewables earn a steady and predictable return for their power without the continuing need for additional mechanisms like CfDs.⁷

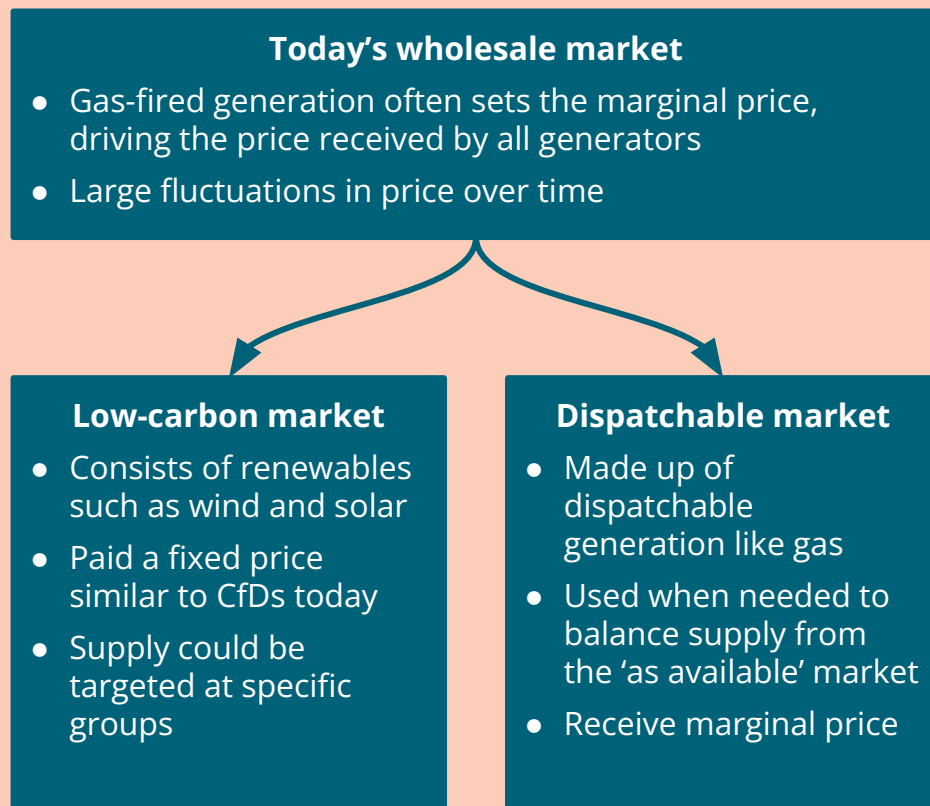
Need for a long-term plan for targeted support

Forecasts highlight that energy bills are likely to remain high for years to come.⁸ This means that without a long-term solution to energy affordability, people across the country will be unable to afford basic essentials.

There are a number of ways in which this support could be implemented, but there is a clear moral imperative for this to be targeted at those who need it most. Some proponents of market-splitting have suggested that cheaper renewable electricity could be directly targeted at specific groups to provide them with an affordable supply of energy.

What is market splitting?

Market-splitting, as its name suggests, would aim to address these challenges by splitting the wholesale market into two separate markets. Generation would be treated differently depending on which market it was in. While there are technical differences between separate proposals, we have sketched out the fundamental concepts below.



The low-carbon market

This market would be made up of renewable generators, including solar and wind. They would receive a fixed price for their generation similar to the way renewables are currently paid via CfDs. It is unclear which market other low-carbon generators such as nuclear or biomass would operate in, with proposals suggesting that these generators would be free to choose for themselves.

The dispatchable market

This market would be made up of generators like gas-fired power stations. They would be deployed when needed (depending on how much output there is from the 'as available' market) and operate under the same marginal pricing scheme as today's wholesale market.

Who gets access to the low-carbon market?

Under certain proposals, access to the low-carbon market would be restricted to specific groups of people. When renewables output is low, additional power from the dispatchable market would be purchased. When renewables output is high, power from the low-carbon market would be sold into the main market.

Specific details for two prominent proposals are explained over the page.

Differences between proposals

The 'Two Market' Approach - Keay and Robinson

How are prices decoupled?

This proposal represents a fundamental restructuring into the two markets.⁹ In the long-term, it would aim to create a market for low-carbon power where the prices that generators are paid are fixed at a particular level. This would mean that dedicated support mechanisms for renewables (like CfDs) would be phased out.

How do consumers access supply?

It is envisaged that domestic consumers could choose from a range of tariffs, where the cheapest ones would restrict energy use around times when output from the low-carbon market is low. More expensive tariffs would allow consumers to use electricity whenever they want, including from the dispatchable market. Without careful protections, this could result in adverse impacts for consumers who are unable to engage in flexibility.

What changes need to be implemented?

Fully implementing this proposal would require significant change to balancing regulations, regulatory design between countries to ensure interconnector flow, unwinding of subsidy mechanisms, and possible innovation in smart metering.

The 'Green Power Pool' - UCL Institute for Sustainable Resources

How are prices decoupled?

This proposal does not fully split the market, but rather uses the existing CfD mechanism to make sure that low-carbon power with cheap running costs is paid in a way that reflects their long-run costs.¹⁰

In the longer-term, it is suggested that this could be replaced by a move to Power Purchase Agreements (PPAs), which are private contracts between generators and suppliers/consumers.

How do consumers access supply?

Supply from the low-carbon market is targeted at specific groups. It is suggested that industrial consumers and fuel poor households would receive access to the low-carbon market initially. Access to the pool would be expanded as the amount of renewables in the Green Power Pool is expanded.

What changes need to be implemented?

Primarily change would be needed to the way that CfDs work in order to be able to physically target supply, or to target revenues to specific consumer groups.

Are there any risks to splitting the wholesale market?

If market-splitting proposals can be successfully implemented, they will have the potential to deliver electricity to consumers at a lower cost than under a traditional marginal pricing regime. However, careful attention must be paid to whether proposals can address any adverse impacts that could arise:

Maintaining investment in net zero technologies

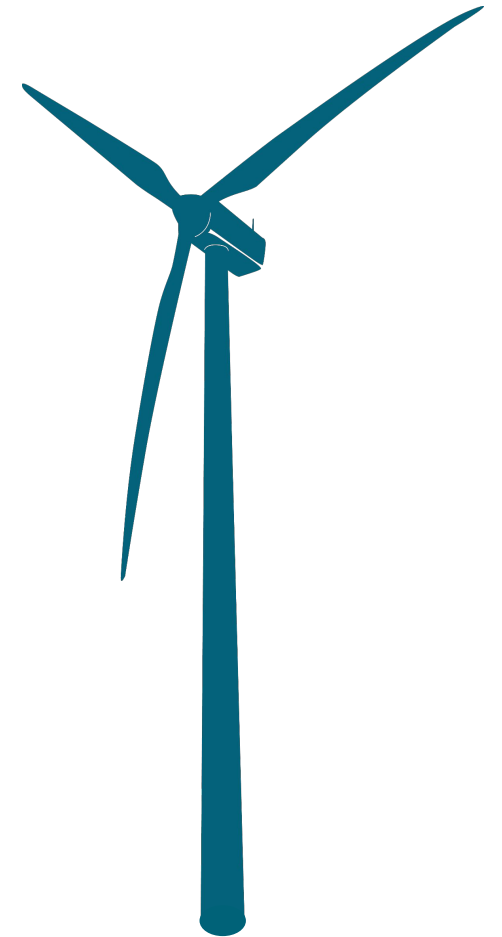
While full market-splitting proposals are still untested, the CfD regime has been hugely successful in growing the UK's renewables fleet. In fact, they have already paid back large amounts of money this year as wholesale prices have increased. It may be that expanding the current CfD regime could help decouple electricity from gas prices without the need for more complex physical arrangements to split the market, that would require more lengthy implementation times to adapt regulation. This would also avoid potential impact on investment appetite if existing mechanisms were unwound.

Managing efficient dispatch of electricity

Some organisations we spoke to expressed concern about how electricity would be efficiently operated under a market-splitting approach. Proposals will need to outline clearly how they can efficiently balance the system, and maintain interconnector trade between neighbouring countries.

Encouraging new kinds of low-carbon generation

While proposals make a clear indication that wind and solar would participate in the low-carbon market, certain technologies in future might not sit so neatly in one or the other camp. For example, renewables with attached energy storage may prefer to sell energy into the dispatchable market at times. Proposals must clearly spell out how market-splitting could be implemented whilst still encouraging investment in flexible low-carbon generation. Without this innovation, consumers could still be exposed to prolonged high prices at times of low renewables output.



Are there any risks to targeting supply of renewable electricity?

This section examines specific risks that could arise from how the cheaper supply of electricity from the low carbon market is targeted. Where possible, we draw out possible implications for policymakers.

Risk	Detail	Implication
Bills would increase for consumers who are not given access to the low-carbon market	Currently, renewables that are on CfDs result in bill savings that are spread between everyone. By directing the cheaper pool at certain consumers, other consumers will not see the benefit of cheap electricity.	<ul style="list-style-type: none">● Danger for consumers who fall through the cracks● Urgent progress needed to identify which consumers are in need of support
Access to bill support is limited by the size of the renewables fleet	There would not be enough contracted renewables to provide everyone with access to the cheaper pool. Difficulties would arise with setting out which consumers get access and when.	<ul style="list-style-type: none">● Additional support would be needed for fuel poor households while the size of the pool grows● Politically difficult to prioritise access as renewables fleet grows
Size of support is not tied to people's needs	The support given to people through access to the low-carbon market would not directly be linked to their needs, but rather to the overall cost of building and operating renewables.	<ul style="list-style-type: none">● Additional support may still need to be targeted at specific groups to ensure affordability
Stark price differences between the pools could be harmful to certain consumers	When renewables output is low, those with access to the low-carbon market would have to rely on more expensive electricity from the dispatchable market. This could mean that vulnerable consumers who are unable to flex their demand in these periods are unfairly exposed to high prices	<ul style="list-style-type: none">● Clear consumer protections would need to be in place for vulnerable consumers● Weaker price signal for users who can be flexible but don't have access to the cheaper pool● Innovation in long-duration storage needed to minimise periods of prolonged high prices

Conclusion

As with any reform, there is no perfect option and tradeoffs will always be involved. We welcome the further development of proposals to address the challenges of our current energy system and support the move to net zero.

CfDs represent a chance to decouple electricity from gas prices through existing mechanisms

The bulk of today's renewables fleet were developed before the CfD mechanism existed. Government could look to move these legacy renewable generators onto CfDs. This would create a larger pool of generation that doesn't fluctuate with the price of gas. As more CfD renewables come online, this could effectively decouple electricity and gas prices.

It would be key to ensure that the prices any new CfDs are agreed at represents value for consumers. The recently introduced electricity generator levy could act as an effective incentive for generators to place competitive bids.

Using the CfD framework to decouple electricity and gas prices could avoid some of the risks posed by physically splitting the market, and could be implemented on a faster timescale.

Targeted renewable supply would need to be complemented by a wider approach to ensure affordability

If supply from the low-carbon pool was targeted at specific consumer groups, this would be unlikely to cover all of those who need it, and we would envisage difficulties in opening up access to additional people in the short and medium-term.

There may still be political advantages to more clearly linking cheaper bills with the renewable technologies that deliver them. Namely this could help ensure public support for renewable energy as the transition progresses.

If chosen, this approach would need to form part of a wider support mechanism. Other forms of bill support, such as social

tariffs or energy efficiency, could provide alternative, or complementary approaches. We are actively considering [the future of bill support for low income and vulnerable households](#) and will publish our final report and recommendations in March 2023.

Need for better data to target support

Whatever mechanism is used to deliver it, more work will be needed to identify consumers who are in need of targeted support. Current indicators are far from perfect, with proxies such as council tax bands leaving many to fall through the cracks.

In the long-term, innovation is needed to bring down price of low-carbon flexibility and long-duration storage.

This is vital to phase out gas power and avoid prolonged periods of high prices at times when renewables output is low. Without this, price differentials between markets could leave consumers exposed to punitively high price signals in future.

References and bibliography

1. UCL Institute for Sustainable Resources (November 2022), [Reforming electricity markets for low-cost and low carbon power](#)
2. Ibid.
3. UK Energy Research Centre (April 2022), [Can renewables and nuclear help keep bills down this winter?](#)
4. Ofgem, [Wholesale Market indicators](#), accessed on 20th January 2023
5. UK Energy Research Centre (April 2022), [Can renewables and nuclear help keep bills down this winter?](#)
6. Low Carbon Contracts Company, [Interim Levy Rate and Total Reserve Amount dashboard](#), accessed on 24th January 2023
7. Oxford Institute for Energy Studies (2017), [The Decarbonised Electricity System of the Future: The 'Two Market' Approach](#)
8. Cornwall Insight (January 2023), [Drop in power price predictions up to 2030 but prices to remain above pre-pandemic levels for next decade](#)
9. Oxford Institute for Energy Studies (2017), [The Decarbonised Electricity System of the Future: The 'Two Market' Approach](#)
10. UCL Institute for Sustainable Resources (November 2022), [Reforming electricity markets for low-cost and low carbon power](#)

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We would like to thank Energy Systems Catapult, the Climate Change Committee, National Grid ESO, Onward, Sustainability First, Green Alliance, the Energy and Climate Intelligence Unit and UCL Institute for Sustainable Resources for their time during the research process of this paper.