CBI response to the BEIS consultation on Review of Electricity Market Arrangements October 2022

The Confederation of British Industry (CBI) welcomes the opportunity to present the views of the UK business community on the Review of Electricity Market Arrangements. The CBI is the UK's leading business organisation, speaking for some 190,000 businesses that together employ around a third of the private sector workforce. With offices across the UK as well as representation in Brussels, Washington, Beijing, and Delhi, the CBI communicates the British business voice around the world.

Introduction

The UK government have set a legally binding target to achieve net zero by 2050, underpinning this target is the delivery of a resilient and affordable net zero electricity system by 2035. The energy transition will require a once-in-a-generation change, a shift from a high carbon, dispatchable system to an increasingly low carbon system. Delivering a secure, cost-effective transition will require significant volumes of private investment in infrastructure at pace and scale over the next decade.

The current energy cost crisis has uncovered vulnerabilities across the energy system and increased the urgency to accelerate the energy transition. Building a resilient, secure electricity system will reduce the UK's reliance on fossil-fuel derived generation, thus reducing the UK's exposure to volatile wholesale gas prices. A low carbon system built from homegrown generation will not only be more secure but will also deliver low cost generation that will support more affordable consumer bills in the future. Delivering the future system requires significant volumes of investment and infrastructure deployment, ensuring that this is delivered in an efficient and cost-effective way will be critical to enabling consumers to benefit from low cost generation.

The business community welcomed the publication of the British Energy Security Strategy in April 2022 which set a bold ambition for key low carbon technologies and the intention to undertake market reform to deliver an electricity system fit 2035. Current pressures on the energy market as a result of the conflict in Ukraine might increase temptation to accelerate the timeframe for REMA, but government must be mindful of the range of options being under consideration. Rapid and uncosted reforms are likely to result in unintended consequences, and ultimately have a knock-on impact on investor confidence. Given the scale of investment required this decade, an investment hiatus would be hugely damaging to the delivery of critical low carbon generation.

The UK has previously undertaken significant changes through the Energy Market Reform (EMR). EMR was developed with care over several years, successfully delivering mechanisms that have shaped the current energy market, including the Contract for Difference and Capacity Market. Through REMA, the UK has an opportunity to build on previous successes and carefully develop an enduring electricity market. Business therefore welcomes the opportunity to support government throughout the REMA process and ensure that there is due consideration of the impact of changes on ongoing and future investments, as well the interactions with the wider energy system.

This submission sets out the following principles that should be considered throughout the Review of Electricity Market Arrangements:

- **Clear oversight of electricity market reforms during the lifecycle of current and future investments is key to securing low carbon investment.**
- **To ensure security of supply, the future system should incentivise investment in flexible assets, that are able to balance patterns of low carbon generation and meet peak demand.**
- **A future system with increased reliance on electrification should also seek to support demand reduction measures**

- **Whilst continuing to have an important role deploying significant volumes of emerging low carbon generation, the evolution of the CfD mechanism would help manage future investment challenges.**
- **Structural changes to the wholesale market should be considered in the context of the future electricity system, not as a solution to short-term challenges.**
- **Any consideration to changes to locational signals should be supported by clear market signals and pricing structures and assessed alongside existing market arrangement with integrated locational pricing, including TNUoS.**
- **The future energy system will be increasingly integrated, therefore reforms to electricity market arrangements should ensure cross-system coordination is optimised.**

Section 1: Challenges for 2035

Clear oversight of electricity market reforms during the lifecycle of current and future investments is key to securing low carbon investment.

The scale of change required to achieve the government's 2035 target is well acknowledged, as are the challenges. The future electricity system will require careful balance between security of supply, crowding-in high volumes of investment and ensuring affordability for all energy consumers, domestic and non-domestic. But achieving the 2035 target will also be crucial to unlocking green growth opportunities – unlocking over £100bn of private sector investment in the energy transition over the next decade will bring investment and new green jobs to regions across the UK.[1]

The energy transition is at a critical stage and securing significant volumes of private investment now will be crucial to delivering on the UK's targets. To unlock investment, investors need reliable outlooks on how the energy system will evolve during the lifecycle of current and future investments – uncertainty will cause an investment hiatus that the UK cannot afford. To support this, the REMA process must be transparent and deliver on appropriate timescales, avoiding rushed decisions with unintended consequences that could be detrimental to investments.

Therefore, to deliver against these objectives and unlock the growth potential, it is crucial that the REMA process takes into consideration these challenges to maintain investor confidence to unlock crucial low carbon investment. Consistent engagement with industry, including investors in the energy transition, throughout the REMA process will help ensure that appropriate solutions are taken forward to provide businesses and investors with clear oversight of future market arrangements.

To ensure security of supply, the future system should incentivise investment in flexible assets, that are able to balance patterns of low carbon generation and meet peak demand.

The importance of a secure, resilient energy system is widely acknowledged, particularly given the increasing demand on the electricity system as sectors across the UK economy seek to decarbonise. Furthermore, the energy cost crisis has reemphasised the importance of delivering a secure system to protect the UK from external shocks. Deploying a secure and resilient electricity system will require a diverse range of technologies, both as-available and dispatchable, as well as flexible assets, to ensure that there is sufficient low carbon capacity to meet peak demand.

To date, the Capacity Market (CM) has worked to ensure there is sufficient generation to meet peak demand at the lowest cost to consumers, predominantly rewarding traditional, dispatchable generation but also through storage and demand side response in recent years. However, the future system brings new security of supply challenges, including extended periods of low renewable output

[1] UK Government, Energy Security Strategy, April 2022

and greater seasonally driven volatility. Without addressing the way in which capacity adequacy is secured for a low carbon system, there is a risk that current market arrangements could lock-in high carbon sources of dispatchable generation. Furthermore, if the system is not designed to incentivise the deployment of low carbon solutions, there is a risk to securing the necessary levels of investment in key technologies.

It is evident that managing security of supply will be a key challenge of the future system, therefore REMA should seek to ensure the future CM addresses the day-to-day supply challenges as well as ensuring peak capacity adequacy. A CM that adequately addresses the challenges of a low carbon electricity system will not only bolster the security of supply but also drive investment in low carbon technologies.

A future system with increased reliance on electrification should also seek to support demand reduction measures.

Securing a low carbon supply of electricity will not be sufficient to deliver a secure electricity system. An increasing number of sectors will be electrifying over the next decade and beyond, with overall electricity demand expected to increase by 50% by 2035.[2] To support the balance of supply and demand, it is well documented that permanent demand reduction through energy efficiency will have to be adopted to maximise efficient consumption across the built environment. Optimising energy efficiency will support consumers reduce overall use and therefore bills, and for business consumers, energy efficiency will also support increased business efficiency.

Therefore, in parallel to the REMA process, government should make progress on demand reduction regimes for both domestic and non-domestic consumers. This should include a long-term national energy efficiency programme to retrofit the UK's housing stock, out to 2030 to enable the supply chain to invest with confidence, and expansion of the Industrial Energy Transformation Fund (IETF).

Section 2: REMA options

There are a range of options being considered in REMA. The CBI's membership is broad ranging; therefore the following aspects of REMA have been selected to highlight particular opportunities and risks within the proposals under consideration.

Whilst continuing to have an important role deploying significant volumes of emerging low carbon generation, the evolution of the CfD mechanism would help manage future investment challenges.

The current Contract for Difference (CfD) mechanism continues to be hugely successful at incentivising investment in low carbon generation whilst simultaneously reducing costs significantly, particularly for offshore wind. Furthermore, the CfD has also demonstrated its benefit to consumers, paying back £157 million in the last three months of 2021.[3] This has made the CfD a world-leading market mechanism, with similar models being adopted across the world and indeed used as the basis for new market mechanisms here in the UK, such as the revenue-support mechanism for low carbon hydrogen. However, whilst the CfD has been successful to date, it is important for it to be reviewed as some technologies mature, and other forms of low carbon generation come onto the system.

Firstly, CfD contracts do not cover the entire lifecycle of renewable projects, with the average CfD contract lasting 15 years whilst projects can be operational for up to 30 years. This leads to increased risk in the merchant half of the project, which is not covered by revenue-support once the CfD expires, leaving revenues exposed in the wholesale market. Revenue-certainty and the return on investment is

[2] CCC, The 6th Carbon Budget, December 2020

[3] Low Carbon Contracts Company, January 2022

key to securing confidence to invest, therefore certainty in the future market beyond the 15-year contract is vital. If investors are not provided the certainty of future market arrangements, confidence could be hit, resulting in increased CfD bids in the attempt to cover a larger proportion of upfront costs within the first 15 years – this could ultimately lead to higher prices for consumers.

Secondly, the ever-increasing proportion of renewable generation in the system presents the increasing risk of price cannibalisation. The consultation rightly captures the risks associated with the current wholesale market arrangements: during periods of high renewable generation, prices are driven down towards short-run marginal costs – i.e. close to zero. This cannibalisation could undermine the investment case for low carbon generation if there are increasing scenarios where the wholesale price might not cover the longer-term cost of capital.

Thirdly, due to minimal exposure to market signals under the current CfD mechanism, there is a move towards day ahead trading. The increasing move towards day-ahead pricing is a contributing factor to reduced liquidity in the market. Liquidity is an important characteristic for future markets to incentivise effective trading and risk management, failure to maintain sufficient market liquidity could lead to higher prices for all consumers. Therefore, REMA is right to assess the merits of increased market exposure in the CfD scheme but must take due consideration of the potential impact on investor confidence that comes with increased risk exposure.

It is evident that as the electricity system rapidly decarbonises, the function of the CfD should evolve to address the investment challenges of the future. As technologies mature, the purpose of the CfD will no longer be to bring novice technologies to commercialisation, but rather provide investors with ongoing market certainty, thus addressing the risks associated with price cannibalisation. But it is important to recognise that low carbon generation technologies are at different levels of maturity. Therefore, the evolution of the CfD may have to occur at different rates for different technologies – functions such as the Pot structure could enable this.

The integration of flexible assets into the CfD framework, such as the co-location with storage, also has the potential to improve the economic case for low carbon investments. Storage assets will not only provide generators with the option to improve the economics of projects in the short term by sharing grid costs, but storage will also be critical infrastructure in the future and will enable generators to optimise revenues by managing intermittent generation. This is a crucial part in the UK's ability to deliver a secure electricity system; the UK must have the balancing mechanisms to meet demand during periods of low renewable resource. Whilst some progress has been made with the inclusion of battery storage and Demand Side Response to compete in the Capacity Market, there remains no long term revenue support. Evolution of the CfD could therefore seek to improve incentives for co-location, diversifying revenue streams for low carbon projects and supporting the commercialisation of flexible assets.

Structural changes to the wholesale market should be considered in the context of the future electricity system, not as a solution to short-term challenges.

Businesses across all sectors are rapidly decarbonising, to support their own net zero ambitions and to benefit from the low cost of renewable energy. The extent to which businesses are benefiting from the growing proportion of low carbon generation is currently limited due to existing market arrangements. Under the current arrangements, fossil fuel-derived power (namely gas) often ends up setting the wholesale price of electricity as, due to its dispatchable nature, it's often used to meet demand when renewables are unable to provide sufficient supply.

In the current period of extremely high wholesale gas prices, using gas as the last source has pushed the wholesale price of electricity up despite significant proportions of renewable energy in the system. All electricity consumers are feeling the pressure of high energy prices; and government intervention to date to help shield consumers has been welcomed by domestic and non-domestic consumers. As the system transitions it is vital that all customers can benefit from the increasing proportion of low cost renewables in the system, to retain support for the net zero transition and ensure its advantages

are felt across society. Under the current arrangements, this will happen gradually as more renewables and flexible assets come into the system and can determine the price more often.

One option under consideration, albeit still theoretical, is complete market splitting, creating an 'as-available' market, made up of renewable generation, and an 'on-demand' market, made up of dispatchable generation. In splitting the wholesale market, two parallel markets will be established with twin wholesale prices. The main benefit of this approach is the opportunity to price the 'as-available' market on the long-run marginal cost, better reflecting the low cost of operating renewable generation, as opposed to the pricing strategy of the 'on-demand' market which is set off the short-run marginal cost. Complete market splitting could also address some of the challenges of a 2035 system, including price cannibalisation, but the impact of market splitting will not be uniform across all generation.

When assessing the merits of wholesale market splitting, it is important to consider the future portfolio of projects, and their supporting mechanisms. Generation under CfD contracts effectively have set prices based on long-run marginal costs, so under complete market splitting, revenues would not be impacted for the duration of their CfD. The increasing proportion of generation operating under a CfD weakens the case for complete market splitting, as the CfD mechanism will artificially set a separate price for low carbon generation. And as low carbon generation makes up a larger proportion of the electricity mix, these prices will increasingly set the wholesale price which will reflect the low cost of renewable generation, ultimately helping to reduce costs to consumers over time.

REMA explores a range of options to accelerate the pace at which renewable and dispatchable power prices could be decoupled. In considering the options, it is crucial to ensure that the options under consideration today will address the challenges of the future energy system, rather than solely addressing the challenges currently being felt.

Any consideration to changes to locational signals should be supported by clear market signals and pricing structures and assessed alongside existing market arrangements with integrated locational pricing, including TNUoS.

Under current market structures, the electricity market operates as a single, liquid market. As a result, the supply and demand base are not evenly distributed across the country, with natural resource and generation in the north and demand concentrated in the south. This structure poses two challenges: firstly the requirement of redispatch by the ESO and secondly incentivising investment in optimal locations.

Improving locational signals to optimal dispatch, e.g. dispatching power located closer to the need (high demand or high prices), could result in cost-savings for electricity consumers. REMA reviews zonal and nodal pricing to implement these increased locational signals. The business community notes the potential benefit of increased granularity that these options could introduce. However, there is some caution on how locational pricing could be deployed in practice without leading to unintended consequences, including high price uncertainty and higher system-management costs. Price certainty is critical to incentivising investment in low carbon generation. Therefore, any consideration to changes to locational signals for dispatch should be supported by clear market signals and pricing structures to support investment decisions.

In considering the role of REMA in increasing the locational signals for investment, it is important to consider the other factors that contribute to investment decisions and the location of assets, including natural resource and planning. Whilst other factors have a crucial role, there is already some degree of locational signal for investment coming through current market structures, including Transmission Network Use of System (TNUoS) charges. TNUoS provides locational signals through price signals based on the impact that an asset's location on the system. Industry recognises the challenges of TNUoS charges in their current form and supports Ofgem undergoing a reform of TNUOS arrangements which includes a review of locational signals. Exploring evolutionary improvements to

existing mechanisms like TNUoS will support investor confidence; this is a mechanism familiar to investors and has a proven ability to provide locational signals to support investment decisions.

Whilst industry recognises that there could be benefits to increasing locational signals to address the dispatch challenge and investment, there are significant investment impacts if risks associated to locational signals are not fully considered. In light of the nuances between these challenges, it is important the options to increase locational signals through REMA are fully assessed against both system benefits and investability, as well as existing workstreams. It is also critical that changes to locational pricing are considered alongside continued network investment. The scale of infrastructure that will need to be deployed over the next decade will require significant network investment across GB and continued efforts must be made to deploy these upgrades at the pace and scale necessary.

The future energy system will be increasingly integrated, therefore reforms to electricity market arrangements should ensure cross-system coordination is optimised.

Delivering a high growth, low carbon economy will require the entire energy system to decarbonise at pace and scale. So, whilst not all aspects of the energy system are within scope of REMA, it will be vital that the interactions across technologies and sectors are considered when assessing reforms to the electricity market.

The business community welcomes the government's commitment to continue with existing workstreams that will support nascent technologies enter the market. A key example being the development of low carbon hydrogen and CCUS. Whilst these technologies are not yet deployed at commercial scale, functions of these technologies, such as power CCUS and hydrogen electrolysis, will play important roles in the electricity system post-2030. It is therefore important that reforms take due consideration of how the future market will work for both emerging technologies as well as those already commercially available, such as offshore wind and solar. Ensuring sufficient consideration is given to the future power mix will be key to supporting investment decisions; investors need confidence in the future market arrangements for the entire lifecycle of investments.

Additionally, there is an increasing shift towards business users playing a key role investing in low carbon generation and ensuring flexibility in the system. Increasing pressures from spiralling energy costs has led to business consumers reviewing energy use patterns and supply. Consequently, many businesses are now exploring their role in the future energy system to become more energy independent with solutions like onsite generation and storage. This not only increases business energy resilience, but also supports businesses to deliver against decarbonisation commitments. To support this evolving role of business users within the energy system and unlock the investment potential, wider policies, e.g. reforming planning for onshore wind as outlined in the recently published Plan for Growth, should develop alongside REMA.[4]

[4] UK Government, The Growth Plan, September 2022