THE ASSOCIATION FOR RENEWABLE ENERGY & CLEAN TECHNOLOGY

Review of Electricity Market Arrangements (REMA)

REA Members: Consultation Summary

Contents

Review of Electricity Market Arrangements Consultation

The purpose of this document is to provide REA members a detailed summary of the REMA consultation document. Highlighting the areas of market reform that government are looking at, the proposals being considered and the key questions we want to hear from you on.

Government have stated that the overall aim of REMA is as follows:

"The purpose of REMA is to identify, assess, and – where necessary – implement options for reforming our market arrangements in GB, to ensure that they are fit for the purpose of meeting our commitment to a fully decarbonised electricity system by 2035, subject to security of supply."

Overall, the consultation considers:

- The state of the current market
- The case for change
- Sets out the governments approach to the review
- Asks for feedback on the governments assessment of options across 5 focus areas, including new designs for the wholesale market.
- Examines cross cutting issues across these 5 focus areas, including: the role of the market, the scale of change that is needed, the extent of decentralisation.

Deadline for the consultation is the 10th October.

The REA Approach to REMA

REA have established a Task and Finish Working Group to help form intial positions on the consultations.

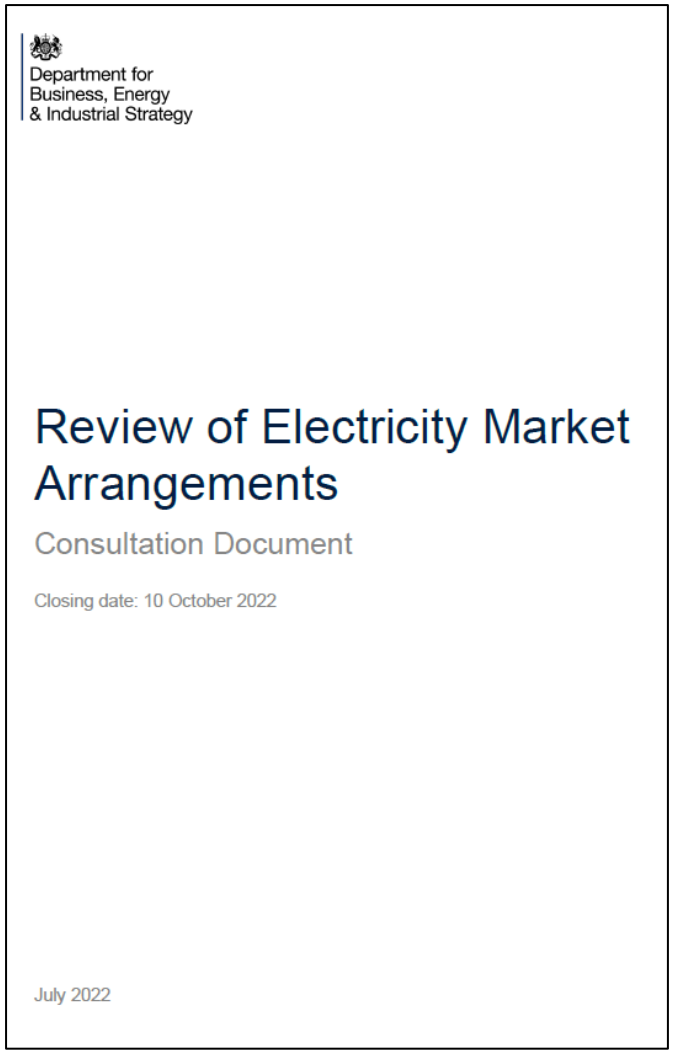
Members of T&F include representatives from across the industry and can be seen here: https://www.r-e-a.net/resources/rea-launch-task-and-finish-working-group-on-rema/

Once the REA have established initial positions there will also be full REA member workshop to consider our response. Do look out for member communications on this.

The REA are also happy to have bi-lateral conversations in relation to the response with members.

REA are also exploring additional influencing opportunities:

- Publishing policy papers on key issues during the consultation. *(Sponsorship opportunities available*)
- Exploring roundtables with the BEIS REMA team and ministers
- Ongoing BEIS engagement following submission of REA response


Department for
Business, Energy
& Industrial Strategy

Review of Electricity Market Arrangements

Consultation Document

Closing date: 10 October 2022

July 2022

Full REMA Overview

This table, from the consultation, provides an overview of all proposals being considered in REMA.

Overall policy package will aim to pick at least one option from each row, with final reforms considered across the 5 work streams.

Wholesale market - location	National pricing		Zonal pricing		Nodal pricing		
Wholesale market - tech	Unified market			Split by characteristic			
Wholesale market – balancing	National			Local then national			
Wholesale market – price formation	Pay-as-clear			Pay-as-bid			
Wholesale market – dispatch	Self-dispatch			Central dispatch			
Mass low carbon power	Existing CfD	CfD with more price exposure	Deemed generation CfD	Supplier obligation	Revenue cap and floor	Dutch subsidy	Equiv. firm power auction
Flexibility	Optimised CM	CM with flex enhancements	Supplier obligation (inc. CPS)				
Capacity adequacy		Capacity payment	Centralised reliability option	Decentralised reliability option	Targeted tender	Strat. reserve	
Operability	BAU	BAU+	Local markets	Changes to CfD/CM design	Co-optimisation	Dedicated support scheme	

Ch. 1: Context, Vision and Objectives for Electricity Market Design

Chapter 1 reiterates the context in which the review is being done, namely a record rise is global energy prices combined with a long-term ambition to decarbonise our energy systems.

REMA Vision

- Step change in the rate of deployment of **low carbon technologies**, and reduced dependence on fossil generation.
- Right signals for **flexibility** across the system
- Facilitate **consumer control** of their electricity use by rewarding them through improved price signals and fair outcomes.
- Optimise assets operating at **local, regional, and national levels**
- Ensure that the **security of the system** can be maintained at all times

REMA Objectives

- **Decarbonisation:** Decarbonising the power sector by 2035 is a critical step on the path to our 2050 economy-wide net zero target.
- **Security of Supply:** Delivering capacity adequacy and operability. Market arrangements will need to ensure that there are sufficient firm, flexible assets on the system to meet peak demand.
- **Cost Effectiveness:** Providing value-for money for consumers and taxpayers by maximising benefits and minimising risks.

Scope

- All electricity-related (non-retail) markets are within scope of REMA
- All technologies are within scope that currently do, or potentially could, participate in electricity markets.
- Note that Retail Markets **are not in** scope, as a parallel review will consider this.

Ch. 1: Questions

1. Do you agree with the vision for the electricity system we have presented?

2. Do you agree with our objectives for electricity market reform (decarbonisation, security of supply, and cost-effectiveness)?

Ch. 2: The Case for Change

Chapter two identifies where current market arrangements may not be able to meet futuer challenges and the target of a completely decarbonised power system by 2035.

Five Key Challenges Are Identified:

1. Increasing pace and breadth of investment in generation capacity
2. Increasing system flexibility
3. Providing efficient locational signals to minimise system costs
4. Retaining system operability
5. Managing price volatility

Identified Issues with Current Market Arrangements:

Decarbonisation

- Ave. wholesale prices fall as renewable generation increases, leading to greater dependency on CfD and CM.
- CfD and CM limits market exposure - reducing price signals for investment in or optimisation of flexibility services.
- Bespoke schemes, while necessary for first of a kind, limit competition for cost reductions and efficiencies.
- Current market arrangements do not reward sustained response, such as could be provided by longer duration energy storage.

Security of Supply

- Capacity Market costs are expected to rise and become a greater proportion of wholesale costs. Must be cost effective.
- Capacity Market is not well designed to drive sufficient investment in low carbon flexibility.
- Capacity market only really rewards frequency response, but not other operability services, such as inertia or low carbon reserve.

Cost Effectiveness

- Lack of effective locational investment signals leads to system inefficiencies.
- Limited temporal price signals in the market to encourage flexibility and costs savings.
- Low cost of renewables is not being passed on as the marginal price is broadly set by the most expensive fossil generation plant.
- Low wholesale market liquidity.
- Lack of visibility of generation and demand between DNOs and the ESO. Not making the most of all assets on the system.

Ch. 2: The Case for Change Questions

3. Do you agree with the future challenges of an electricity system that we have identified? Are there further challenges we should consider? Please provide evidence for additional challenges.

4. Do you agree with our assessment of current market arrangements/that current market arrangements are not fit for purpose for delivering our 2035 objectives?

Ch. 3: The Government Approach

BEIS have outlined three Stages to the REMA process:

I. Establishing a case for reform (This REMA consultation with Gov. response in winter 2022),
II. Developing options and determining the reforms (2022-23),
III. Establishing a delivery plan and overseeing implementation (mid-2020s – 2035).

The consultation focus on five Thematic Focus Areas:

"While recognising that a whole system approach will be required, the first step is to break down the problem into tractable parts whilst recognising interdependencies."

The identified themes are*:*

1. A Net Zero wholesale market;
2. mass low carbon power;
3. Flexibility;
4. capacity adequacy;
5. operability.

Criteria for Options Assessment

Government will use responses to assess all proposals against the following criteria:

1) Least Cost
2) Deliverability
3) Investor Confidence
4) Whole-system Flexibility
5) Adaptability

Government will then put forward a package of options. Packages will be assessed against the options criteria, REMA objectives, coherence with the rest of the energy system, statutory obligations, and wider impacts.

Ch. 3: The Government Approach Questions

5. Are least cost, deliverability, investor-cost, whole-system flexibility and adaptability the right criteria against which to assess options?

6. Do you agree with our organisation of the options for reform?

7. What should we consider when constructing and assessing packages?

Ch 4: Cross Cutting Questions

The consultation examines cross-cutting issues that impact all proposals, and the chapter considers trade-offs in how different approaches are used to resolve them.

Role of the Market

Gov. will pursue solutions which maximise the role of the market where possible; but recognise continued intervention will also be needed to deliver objectives which cannot be independently met by the market.

Extent of Competition between Technologies

Government wants to promote cross technology competition but recognises it must be carefully designed so that specific services can be delivered and first of a kind technologies are built.

Extent of Decentralisation

Government will seek to balance the advantages of decentralisation – providing greater control to market participants – against a need to effective system coordination done centrally.

Role of Marginal Pricing

Government seek to move away from marginal pricing but need more evidence to understand the impacts and deliverability of different options.

Minimising Financial Cost and Maximising operational signals

Government have lessened market signals through the CfD. However, this doesn't encourage flexibility assets. Government will seek the right balance of exposure to market signals to drive asset optimisation.

Scale of Change: Delivering Objectives throughout the transition

Government will keep both revolutionary and evolutionary options open– possibly seeking a combination over different timescales to ensure decarbonisation and energy security.

Delivering more accurate locational signals

Government will consider a range of potential locational signals to realise efficiencies. This will be considered alongside ongoing network charging and access reforms. As well as consider how changes could be delivered.

Electricity Demand Reduction

Government how to drive demand reduction. Including:

1. Energy efficiency policies
2. Creating reduction incentives
3. Bespoke mechanisms where technologies compete
4. Incentivised through market arrangements.

Ch 4: Questions

8. Have we identified the key cross-cutting questions and issues which would arise when considering options for electricity market reform?

9. Do you agree with our assessment of the trade-offs between the different approaches to resolving these cross-cutting questions and issues?

10. What is the most effective way of delivering locational signals, to drive efficient investment and dispatch decisions of generators, demand users, and storage? Please provide evidence to support your response.

11. How responsive would market participants be to sharper locational signals? Please provide any evidence, including from other jurisdictions, in your response.

12. How do you think electricity demand reduction should be rewarded in existing or future electricity markets?

Ch 5: A Net Zero Wholesale Market

Chapter identifies multiple options focused on both decoupling the marginal price of gas and providing effective price signals for delivering flexibility. The consultation highlights the following options:

Green Power Pool:

- System Operator (SO) would run a renewable power pool alongside the existing market.
- Participation would be voluntary - generators could contract into the pool at their long-run marginal cost and consumers (likely primarily non-domestic) could purchase contracts with cheaper general price but higher volatility.
- Consumers choose how much variability in exchange for cheaper prices.
- Imbalances would then be covered through purchases from the wholesale market.
- SO would balance the pool through wholesale market purchases, cost of which would be spread over all consumers in the pool.

Incremental reform to status quo:

- Maintain fundamentals of the status quo but with incremental parameters changing, such as gate closure.

Splitting generation into separate markets of variable and firm power:

- Pitched as solution to price cannibalisation and volatility
- In variable, 'as available' market, prices linked to long-run marginal cost of renewables
- In firm, 'on demand' market, prices linked to short-run marginal cost of all generation, like today's market.
- Consumers able to participate in both but those with flexibility could buy a higher proportion from the 'as available' market.
- Consumers in the 'on demand' market would pay a premium for firmness of supply.
- Upsides: Isolates renewables from wholesale market, decouples electricity price from gas, incentivises flexibility, and demand-side flexibility.
- Downsides: untested, interaction between two markets, reduced competition and lower liquidity, investor confidence risks, consumer protection risks.

Ch 5: A Net Zero Wholesale Market – Locational Signals

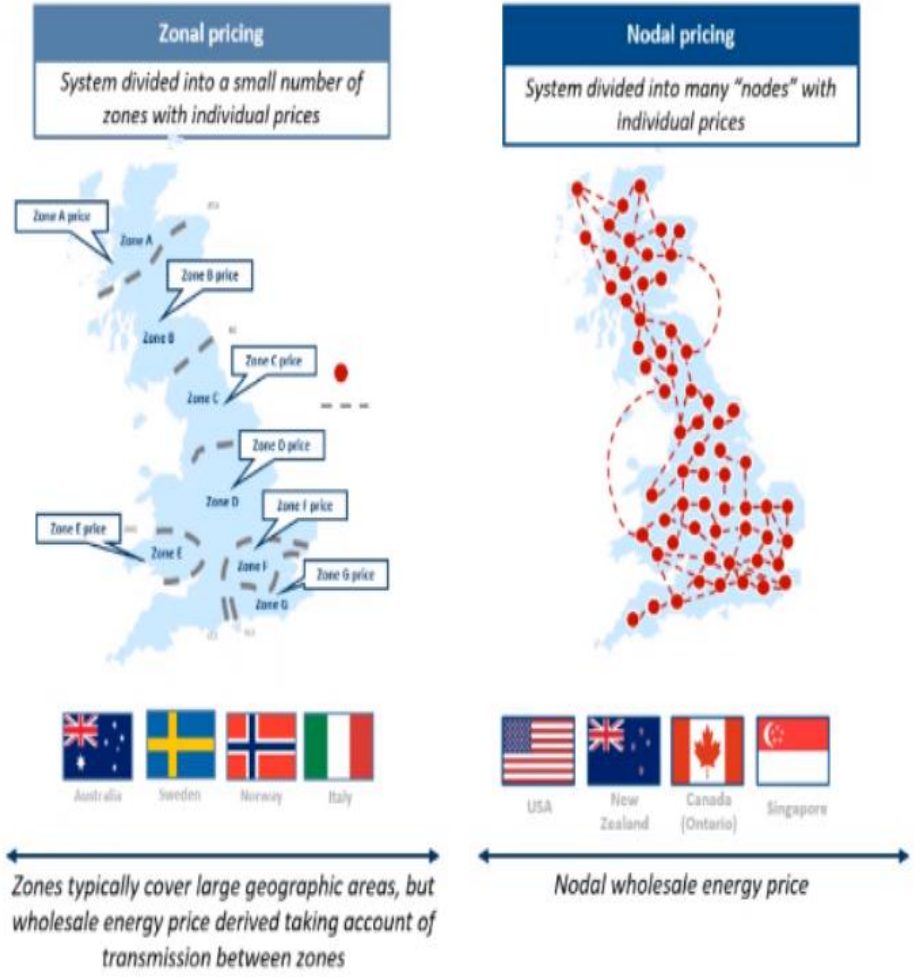
In addition, Government have made clear their desire to see locational price signals introduced . Options include:

Zonal pricing:

- Clearly defined zones, boundaries drawn where major transmission constraints occur.
- Zones have a single price, assuming no constraints within the zone.
- Where the price for energy differs between two zones, a supplier will pay the difference between the price in the zone it was generated and the price in the zone where the energy is supplied.
- *Benefits*: savings for consumers, locational investment signals, better price signals to whole market.
- *Challenges*: potential for market manipulation, defining the boundaries, uncertainty about how it delivers increased dispatch efficiency.

Nodal pricing:

- The price in each location in the transmission network (a "node") reflects a locational value.
- Could be applied to both demand and supply, or just generation, with consumer opt-in.
- Market clearing likely done by a central dispatch.
- Unlikely to be practical to extend nodal pricing to the distribution network.
- *Benefits*: could allow wholesale market to fix congestion, savings for consumers, locational investment signals
- *Challenges*: Differential price impacts across country, reduced predictability of short-term prices, continuous calculation of prices at all nodes required, investor confidence during transition, compatibility of nodal and EU zonal design.



Ch 5: A Net Zero Wholesale Market

Further market changes being explored:

Local markets:

- Could create separate markets (pool, balancing and ancillary service) at each connection between transmission and distribution networks. DNOs would be responsible for balancing local markets.
- Alternatively, create locational imbalance pricing. Suppliers face regional based imbalance charges between the location of their consumers' demand and their generators' supply.
- Neither have been tested in practice.

Pay as bid:

- Participants receive the price of their bids/offers, rather than the bid of the highest priced supplier selected to provide supply (the marginal price).
- Could decouple prices from the gas price, and reduce wholesale electricity prices, generators lower down the merit order were to bid below the current marginal price. But: may encourage strategic bidding and could reduce incentives for flexibility.

Ch. 5: Questions (Abridged)

13. Are we considering all credible options for reform?

14. Do you agree that we should consider a split wholesale market?

15. How might design issues be overcome for a) split markets model, b) green power pool? (Please consider the role of flexible assets in b)

16. Do you agree that we should consider both nodal and zonal market designs?

17. How can challenges with the above be overcome?

18. Could nodal pricing be implemented at distribution level?

19. Do you agree we should consider the local markets approach?

20. Are there other approaches to developing local markets?

21. Do we agree that we should consider reforms that move away from marginal pricing?

22. Do you agree that we should consider amendments to the parameters of current market arrangements, including to dispatch, settlement and gate closure?

23. Are there any other changes to current wholesale market design and the Balancing Mechanism we should consider?

Ch. 6: Mass Low Carbon Power

Meeting the 2035 commitment to decarbonise the electricity sector means delivering significant investment in new low carbon electricity capacity. BEIS are considering the following options to increase low carbon power deployment:

A supplier obligation

- Only option which does not rely on long-term private law contracts between govt-owned body and generators. Rather, contracts would be between generators, suppliers and intermediaries (some govt underwriting may be involved).
- Govt would set a obligated trajectory of carbon intensity of electricity that suppliers can sell to customers.
- Benefits: Market driven investment signals. Suppliers would have more freedom about how to meet the obligation. Could send better locational signals.
- Risks: counterparty contracting (higher investment costs), and suppliers focussing on mature technologies, current CfD scheme may become less effective at de-risking investment.

CfD Variations

Develop the CfD so that generators are more exposed to price signals. Options:

- A *strike range*: plants are guaranteed a maximum and minimum price per MWh output, with market exposure within that range.
- Changes to the *reference price methodology:* setting CfD top-up payments for a week, with rewards if plants do better than the weekly average.
- Plants *paid on potential to generate* rather then out put. Generators would not have to export to receive their CfD top-up payment. Risk of gaming.

Revenue Cap & Floor

- Generators would be guaranteed a minimum revenue in each period. They would compete in the full range of markets, and if they do not meet their minimum revenue, then they would be topped up at the end of the period. If their revenue was above the cap, a proportion of the excess would be paid back
- Intended for all assets, possibly designed on £/MW basis.
- Would support flexibility and provide investor confidence.

Ch. 6: Questions

24. Are we considering all credible options for reform in the mass low carbon power chapter?

25. How could electricity markets better value the low carbon and wider system benefits of small-scale, distributed renewables?

26. Do you agree that we should consider supplier obligations?

27. How would the supplier landscape need to change, if at all, to make a supplier obligation model effective at bringing forward low carbon investment?

28. How could financing and delivery risks of a supplier obligation be overcome?

29. Do you agree that we should consider central contracts with payments based on output?

30. Are the benefits of increased exposure under central contracts with payment based on output likely to outweigh the potential increase in financing cost?

31. Do you have any evidence on the relative balance between capital cost and likely balancing costs under different scenarios and support mechanisms?

32. Do you agree that we should consider central contracts with payment decoupled from output?

33. How could a revenue cap be designed to ensure value for money whilst incentivising valuable behaviour?

34. How could deemed generation be calculated accurately, and opportunities for gaming be limited?

Ch. 7: Flexibility

BEIS note that none of the options outlined will be sufficient to provide support for the range of supply and demand-based flexibility technologies needed in a net zero scenario. They will need to be packaged with market reform as proposed in Chapter 5.

BEIS outline the following options for increasing flexibility:

Supplier Obligation:

- A flexibility-focused supplier obligation could provide stronger investment and operational signals for flexibility, particularly for demand side and small-scale flexibility.
- BEIS note this model carries risks as the cost of capital will likely increase if suppliers play a larger role in determining the capacity mix.
- Supplier Obligation not considered as a standalone option which could drive all the required investment in flexibility, but as a supplementary mechanism particularly for small-scale flexibility with lower upfront costs e.g. demand side response.

Cap and Floor:

- Flexibility assets – potentially including low carbon generation, storage, demand side response, and portfolios of decentralised assets (e.g. electric vehicles or heat pumps) – would compete for a guaranteed minimum revenue (floor) from the government for each period.
- BEIS note any cap would be designed to maximise competition e.g. a sustaining or availability payment – to ensure plants keep responding to operational signals even once the cap has been reached (a soft cap)

Capacity Market Reform, two options outlined:

I. Flexible auctions: Introduce auctions open to all low carbon technologies which meet an agreed set of flexibility criteria.

II. Introduce multipliers to the clearing price: Only low carbon capacity which meets the flexibility criteria would be eligible, and multipliers would be applied to their clearing price valuing flexible characteristics e.g. response time, duration, location.

Ch. 7: Flexibility Questions

35. Are we considering all the credible options for reform in the flexibility chapter?

36. Can strong operational signals through reformed markets, bring forward enough flexibility, or is additional support needed to de-risk investment to meet our 2035 commitment? Please consider if this differs between technology types.

37. Do you agree we should continue to consider a revenue cap and floor for flexible assets? How might your answer change under different wholesale market options considered in chapter 5 or other options considered in this chapter?

38. How could a revenue cap and floor be designed to ensure value for money, for example how could a cap be designed to ensure assets are incentivised to operate flexibly and remain available if they reach their cap?

39. Can a revenue (cap and) floor be designed to ensure effective competition between flexible technologies, including small scale flexible assets?

40. Do you agree we should continue to consider each of these options (an optimised Capacity Market, running flexibility-specific auctions, and introducing multipliers to the clearing price for particular flexible attributes) for reforming the Capacity Market?

41. What characteristics of flexibility could be valued within a reformed Capacity Market with flexibility enhancements? How could these enhancements be designed to maximise the value of flexibility while avoiding unintended consequences?

42. Do you agree that we should continue to consider a supplier obligation for flexibility?

43. Should suppliers have a responsibility to bring forward flexibility in the long term and how might the supplier landscape need to change, if at all?

44. For the Clean Peak Standard in particular, how could multipliers be set to value the whole-system benefits of flexible technologies? And how would peak periods be set? (see p.91 for information on Clean Peak Standard).

Ch 8. Capacity Adequacy

Key arrangements will need to secure investment in sufficient capacity to enable system balancing at all times. Having considered six options, BEIS believe the following three provide the most potential advantaged over current arrangements.

Centralised Reliability Options

- In this model, the incentive to provide power is signalled through wholesale market pricing rather than by targeting a system stress event. The mechanism is based on the concept of a 'call option contract', which gives the buyer of the contract the right to buy a commodity at a predefined price.

- The Transmission System Operator determines the amount of capacity to be auctioned (sufficient to meet peak demand) and, in return for a reliability premium (determined through the auction process), secures the right to buy electricity from the assets on the wholesale market at a 'strike price'. A physical capacity guarantee for all options sold is made part of the contractual obligation.

- Contracts obligate contract holders to pay the difference between the real-time price and the agreed strike price when there is system scarcity and the real-time price is higher than the agreed strike price. A contract holder that is unavailable not only loses the income from the spot market (at the strike price level) but also has to pay the difference between the spot price and the strike price.

Optimised the Capacity Market, Two Options:

- *Separate auctions:* Low carbon new build or refurbished assets would participate in separate auctions. ESO to set total amount of target capacity and how much to procure in each auction. BEIS anticipate the low carbon clearing price may be higher than in a single CM auction.
- *Multiple clearing prices:* A single auction, but different clearing prices e.g. for low carbon/new build generation. This could involve imposing additional constraints, such as a maximum acceptable bid to prevent prices rising too high.

Strategic Reserve:

- Used in Germany, Sweden, Australia. In this model, the central authority auctions reserve capacity on top of what the market is expected to provide. Successful providers receive payment at their bid price which includes a payment for being available and a separate activation payment.
- Advantageous as only procures additional capacity at peak times, though it is likely to made up of high carbon capacity.

Ch. 8: Capacity Adequacy Questions

45. Are we considering all the credible options for reform in the capacity adequacy chapter?

46. Do you agree that we should continue to consider optimising the Capacity Market?

47. Which route for change – Separate Auctions, Multiple Clearing Prices, or another route we have not identified – do you feel would best meet our objectives and why?

48. Do you consider that an optimised Capacity Market alone will be enough for ensuring capacity adequacy in the future, or will additional measures be needed?

49. Are there any other major reforms we should consider to ensure that the Capacity Market meets our objectives?

50. Do you agree that we should continue to consider a strategic reserve?

51.What other options do you think would work best alongside a strategic reserve to meet flexibility and decarbonisation objectives?

52. Do you see any advantages of a strategic reserve under government ownership?

53. Do you agree that we should continue to consider centralised reliability options?

54. Are there any advantages centralised reliability options could offer over the existing GB Capacity Market? For example, cost effectiveness or security of supply benefits? Please evidence your answers as much as possible.

55. Which other options or market interventions do you consider would be needed alongside centralised reliability options, if any?

Ch. 9: Operability

Ensuring operability through the provision of ancillary services is crucial for the efficient and safe functioning of the electricity system. In chapter 9, BEIS outline a number of options:

Enhanced existing policies
BEIS outline the following potential further measures:

- Give the Energy System Operator (ESO) or Futuer System Operator (FSO) the ability (or an obligation) to prioritise zero/low carbon procurement. The FSO will have a statutory duty to undertake its functions in a net zero compliant manner, but this could be expanded to include the ability to prioritise low carbon ancillary services, or give carbon reductions equal weighting to cost effectiveness.
- Ensure the ESO strikes the optimal balance between long and short-term contracts for ancillary services.
- Align Capacity Market and CfD tenders with those for ancillary services.
- Introduce a matrix approach to ancillary service provision in which providers can submit linked bids for ancillary services which can only be delivered together.

Maintaining Status Quo
- BEIS note that the Smart Systems and Flexibility Plan includes actions on the ESO relating to ancillary services to help support the government's decarbonisation objectives. For example, implementing a single day-ahead market for response and reserve by 2023 which will make it easier for variable renewables and demand side response to participate.
- BEIS ask whether existing policies and workstreams, such as ENA's Open Networks project and Ofgem's energy system review are sufficient to ensure operability in a net zero context.

Developing local ancillary services markets
- This option would involve an expanded role in the operability of networks at a local level, which could include procurement of ancillary services from local markets.
- The DNOs would likely take on a greater role in managing operability. DNOs already are involved in thermal constraint and – to a limited extent – voltage control, however, there are questions about the practicality of DNOs procuring ancillary services like frequency response and reserve.
- BEIS note that formalisation of roles for maintaining network operability between the ESO and DNOs may be complex.

Ch. 9: Operability (cont.)

Options outlined for improved operability, cont.:

Co-optimisation of ancillary services

- This option would be considered as part of broader wholesale market changes which involve central dispatch (dispatch controlled by the System Operator), such as nodal pricing.
- In a system with central dispatch, ancillary services can be co-optimised with wholesale dispatch. Assets provide both generation and ancillary services prices to the System Operator, and these are co-optimised when sending dispatch instructions.
- Short timeframes could help enhance flexibility, and the optimisation between the wholesale market and ancillary services brings this closer to a 'whole systems' approach.
- BEIS do, however, note that it is unclear whether this type of market for ancillary services could incentivise provision of the ancillary services required for a market with a high proportion of variable renewable energy.

Changes to CfD design

- BEIS note that at present a substantial proportion of renewable providers that receive CfD support are disincentivised from offering ancillary services as they would need to bid high prices in Ancillary Service tenders to recover the loss of subsidy from diverting power from the wholesale market.
- The existing CfD could be modified to remove disincentives for assets that are supported by the scheme to engage in ancillary services markets. (See proposals in chapter 6)

Changes to Capacity Market design

- The existing Capacity Market would be modified to include obligations or incentives to provide ancillary services.
- Gaining low carbon ancillary service capability through Capacity Market payments could potentially represent good value for money. Capacity Market payments could be expected to incentivise investors who would be attracted to long-term certainty of Capacity Market contracts.
- BEIS do note that this would add complexity to the Capacity Market.

Ch. 9: Operability Questions

61. Are we considering all the credible options for reform in the operability chapter?
62. Do you think that existing policies, including those set out in the ESO's Markets Roadmap, are sufficient to ensure operability of the electricity system that meets our net zero commitments, as well as being cost effective and reliable?
63. Do you support any of the measures outlined for enhancing existing policies? Please state your reasons.
64. To what extent do you think that existing and planned coordination activity between ESOs and DNOs ensure optimal operability?
65. What is the scope, if any, for distribution level institutions to play a greater role in maintaining operability and facilitating markets than what is already planned, and how could this be taken forward?
66. Do you think that the CfD in its current form discourages provision of ancillary services from assets participating in the scheme? If so, how could this be best addressed?
67. Do you think it would be useful to modify the Capacity Market so that it requires or incentivises the provision of ancillary services? Is so, how could this be achieved?
68. Do you think that co-optimisation would be effective in the UK under a central dispatch model?

Ch. 10: Options across Multiple Market Elements

Chapter ten outlines two options which cover multiple market elements (spanning the issues covered in individual chapters), these are:

Auction by cost of carbon abatement

- The proposal is based on the SDE++ scheme in the Netherlands, which focuses on large-scale rollout of technologies for renewable energy production and other clean tech.
- Auctions are based on the cost effectiveness of different technologies at avoiding CO_2 emissions. There is a set budget for each auction, and bids are accepted until this budget is reached.
- Dutch system uses tech-specific ceiling prices.
- Dutch govt contracts directly with assets and provides a subsidy up to 15 years. Level of support covers difference between base tariff per tonne of CO2 equivalent avoided and an estimated market renumeration.
- Creates a common currency for comparing the relative value for money of decarbonisation projects.
- Challenge of maintaining the common currency while providing different tech types with appropriate incentives. Not appropriate for flexible assets.
- Govt minded to explore further but seeks views on adapting to help flexibility, and only to support investment rather than for mass low carbon power.

Equivalent Firm Power

- Single unified auction for procuring capacity. Evolution of capacity market to incorporate CfDs. Renewables – contracting alongside flexibility assets – and firm capacity compete.
- Central body would determine de-rating factors based on quantity of firm capacity required to offer the same level of security of supply during these periods.
- Creates a technology-neutral auction (in Govt's view) and a secondary market for flexibility. Improves access to market for flexibility as variable generation seek to improve their de-rating factor.
- Tech neutrality incentivises market participants to find the most efficient ways to deliver security of supply.
- Risks: could be more cost-effective to procure flexibility at system-wide level, higher investor risk, risks to tech neutrality through auction parameters.

Ch. 10: Questions

69. Do you agree that we should not consider a payment on carbon avoided for mass low carbon power?

70. Do you agree that we should consider a payment on carbon avoided subsidy flexibility?

71. Could the Dutch Subsidy scheme be amended to send appropriate signals to renewables and supply and demand side flexible assets?

72. Are there advantages to the Dutch Subsidy scheme we have not identified?

73. Do you agree that we should consider an Equivalent Firm Power Auction?

74. How could the challenges identified with the Equivalent Firm Power Auction be overcome? Please give supporting evidence.

REA Next Steps

The REA shall be holding a full cross membership Town Hall on the REMA consultation in mid/late August. Look out for member communications on this in the coming weeks. You will be able to register for the event via the REA website.

We shall also be developing an initial draft response over August, in conjunction with our Task and Finish group.

Any member feedback concerning this consultation should be sent to power@r-e-a.net or we are happy to arrange a telephone conversation as appropriate.

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