



18 May 2020

Attention: Kate Wild
Australian Energy Market Commission
SYDNEY
Submitted online to: info@esb.org.au

Dear Kate

Submission: Moving Towards a Two-sided Market

CS Energy welcomes the opportunity to provide a submission on the Energy Security Board's (ESB's) paper Moving Towards a Two-sided Market (**the paper**) being led by the Australian Energy Market Commission (**AEMC**).

About CS Energy

CS Energy is a Queensland energy company that generates and sells electricity in the National Electricity Market (**NEM**). CS Energy owns and operates the Kogan Creek and Callide coal-fired power stations. CS Energy sells electricity into the NEM from these power stations, as well as electricity generated by other power stations that CS Energy holds the trading rights to.

CS Energy also operates a retail business, offering retail contracts to large commercial and industrial users in Queensland, and is part of the South-East Queensland retail market through our joint venture with Alinta Energy.

CS Energy is 100 percent owned by the Queensland government.

General comments

CS Energy considers that all technologies and business models should be able to participate on equal terms in the energy market if desired, and market barriers to participation should be addressed where possible.

A degree of two-sidedness in the market may be the efficient means to unlocking the potential of demand side participation and addressing the challenges of integrating distributed energy resources, however, this paper outlines a design based on economic theory at the expense of consideration of more practical and potentially cost-effective options.

CS Energy suggests that the ESB step back from its "ultimate vision" and develop conceptual designs for incremental stages of two-sidedness. This would include:

Brisbane Office
PO Box 2227
Fortitude Valley BC Qld 4006
Phone 07 3854 7777
Fax 07 3854 7300

Callide Power Station
PO Box 392
Biloela Qld 4715
Phone 07 4992 9329
Fax 07 4992 9328

Kogan Creek Power Station
PO Box 41
Brigalow Qld 4412
Phone 07 4665 2500
Fax 07 4665 2599

- Assessment of barriers to participation external to the market such as state government policies on retail tariffs that may limit the nature of any design, as well as the level of willingness of consumers to participate;
- Assessment of the volume of demand side participation that is technically available as an upper limit to assess whether its ability to be flexible coincides with times required by the power system;
- The assessment of design elements against market design principles such as appropriate risk allocation, and the consequences to system security and reliability if a large subset of consumers have relaxed technical requirements and dispatch obligations;
- Interaction with other market design initiatives being undertaken by the ESB including addressing the conflict in the timing of the development of the two-sided market concept which is to be finalised before outcomes of associated trials underway can inform; and
- Proper consideration of the risks and costs alongside any benefits which acknowledges the need for new participants to “do no harm” regardless of their size.

CS Energy is aligned with the overarching objective that this paper is seeking to achieve and is keen to engage in the development of appropriate frameworks for consideration. However, CS Energy is disappointed with the lack of consultation to date with stakeholders excluded from much of the critical thought development. This framework has already been presented to the Council of Australian Governments Energy Council in March for approval to develop a complete framework design which is concerning as this paper fails to appropriately contextualise the challenges and opportunities and does not respect an objective consideration of two-sided markets. Furthermore, stakeholders continue to be presented with two-sided and ahead markets as a *fait accompli* as demonstrated by this paper.

Any market reform process must be open and collaborative, and key stakeholder sectors included in the evolution of the thought development. This will not only result in a more efficient outcome but will assist in facilitating the implementation process of any new framework. CS Energy implores the ESB to reconsider its consultation process and adopt a process which will facilitate more effective outcomes.

Our detailed comments on the paper are set out in the Attachment.

Please contact us if you would like to discuss this submission further.

Yours sincerely



Teresa Scott
Market Policy Manager

Enquiries: Dr Alison Demaria
Market Regulatory Manager
Telephone 0407 548 627

ATTACHMENT

1. Proposed two-sided market frameworks

CS Energy considers that all technologies and business models should be able to participate on equal terms in the energy market if desired, such that accessing the benefits of participation is balanced by appropriate responsibilities and obligations while in the best interests of consumers.

CS Energy is disappointed with the level of detail in the working paper and has concerns with the overall consultation process. In terms of the paper, for a discussion on a two-sided market, the details are very one-sided and based on economic theory without exploring the practicalities. There is limited discussion of the potential costs and risks associated with the framework, and the paper does not sufficiently outline alternative approaches and the interaction with other Market Design Initiatives (**MDIs**). Yet, there are numerous statements about the overall benefits to the market and power system which are unexplored and do not communicate the intent that the two-sided market is being presented as a concept for critical development and discussion.

Any market reform process must be open and collaborative, and key stakeholder sectors should be included in the evolution of the thought development rather than an approach of just “*consult with industry where possible*”¹. This will not only result in a more efficient outcome but will assist in facilitating the implementation process of any new framework. CS Energy is further concerned that this framework was presented to the Council of Australian Governments (**COAG**) Energy Council for approval to develop a complete framework design without any consultation with stakeholders, particularly given it fails to appropriately contextualise the challenges and opportunities. This approach does not embody either the ESB’s nor the AEMC’s stakeholder engagement principles.

CS Energy is aligned with the overarching objective that this MDI is seeking to achieve and is keen to engage in the development of appropriate frameworks. This submission does not address the specific questions as they are too detailed and specific for this early stage of conceptual development. This is supported by the lack of detail and justification in the paper that would be required to adequately respond. Thus, the discussion provided below focuses on feedback on the broader design categories considered and suggests some key areas for further exploration.

2. Contextualising the need

CS Energy disagrees with how the broader motivation for two-sided markets has been contextualised against a desire to be like other commodity markets and the market having been constrained to date by technology. Electricity is not like other commodities that are easily tradable and storable, and this is reflected by the corresponding risk exposure of participants. It may assist to consider two-sided markets not in terms of a need but as a potential opportunity cost associated with lower levels of demand side participation, which will assist in setting out incremental targets. Otherwise, CS Energy recommends the ESB also consider a bottom-up approach.

The premise that increased digitisation will remove barriers to consumer participation is only partially true. While technology evolution can automate the interface between the consumer

¹ ESB, *Moving to a two-sided market*, March 2020, p.33

and the market, there are many social, regulatory, economic and policy barriers to participation. Relevantly:

- Social barriers include equity issues associated with Distributed Energy Resources (**DER**) and appetite to participate.
- Technical barriers to participation do not currently exist for many large loads but it has been CS Energy's experience that they have not expressed a willingness to participate in demand response.
- Policy barriers include regulated tariffs and reluctance for retail price differences within regions.

There have been many previous efforts to address these barriers to no avail. Given the success of a two-sided market is contingent on these learnings, the ESB should focus on the practicalities of consumer participation alongside the economic theory.

The paper does briefly touch upon the appetite to participate but has not drawn out how this may impact the design outcomes, and the relative level of net benefit. It would be beneficial to understand how the varying levels of participation need to be incorporated in any design aspects. This will also assist in the development of a transitional framework and is key to a consistent interface with the Integrating DER MDI.

The willingness to participate will also influence exactly how the nature of consumers is changing. There is likely to be a spectrum of consumer engagement regardless of the removal of technological barriers. Any two-sided market design needs to be adaptive and provide opportunities to consumers but can't be predicated on consumers behaving in a certain way. The latter will create a framework that only adds cost for all consumers with minimal benefit.

The ESB also note that the system security and reliability challenges associated with the changing generation mix can potentially be prevented or managed by increased participation of consumers, in addition to improving market efficiency. CS Energy agrees that demand side participation can play a role in delivering system security and reliability, but the feasibility needs to be better understood including a thorough risk assessment. Further discussion on this subject was provided in CS Energy's submission to the Wholesale Demand Response Mechanism (**WDRM**)².

3. Conceptual two-sided market design

3.1. Approach

(a) Definition of two-sided markets

The ESB has outlined broad metrics to define its vision of a two-sided market. CS Energy agrees with these principles but these need to be extended for each of the design elements with the appropriate interrogation of the associated risks and benefits of each. The criteria do however allow for flexibility in what constitutes a two-sided market and the ESB should articulate feasible options that sit between the current market framework and the "ultimate vision" of the paper.

² CS Energy, [Submission to Second Draft Rule Determination – Wholesale Demand Response](#), April 2020

An incremental consideration of the level of two-sidedness may also assist in addressing the implementation challenges of the WDRM as well as the contradictions in its design. Relevantly:

- Appropriate allocation of risk and obligations of participants in the wholesale market has been ignored, with Demand Response Service Providers (**DRSPs**) relieved of obligations in order to facilitate easier implementation, while retailers are burdened with additional risk and cost.
- The AEMC has not yet determined how to incorporate DRSPs into the Coordination of Generation and Transmission Investment (**COGATI**).

Given the difficulties in integrating a subset of increased consumer participation into the market changes underway, the ESB must be very diligent in understanding and developing the individual design elements for a range of two-sided market options and their integration into the NEM so as to not conflict with the objectives of this MDI. Otherwise, the MDI will evolve into a litany of contradiction. For example, the expressed desire to not have specific market rules or participant categories, rather consider participants by the function that they provide is contradicted by consideration of having no dispatch obligations for smaller participants.

(b) Scope

The ESB is both broad and limited in the scope outlined in the paper. CS Energy advocates that the scope of two-sided markets is reeled in from the economic theory and outlined in terms of practical components. The ESB could set aspirational targets which would signal whether the market would benefit from a further incremental change towards the two-sided market rather than only detail the most significant option. An incremental approach could then be explored across all the essential design features and could also consider externalities such as consumer sentiment and government policies on retail prices.

CS Energy also regards the scope as too narrow in that the interaction with other markets has been excluded with the reasoning “*that retail markets, bilateral trading and exchange-trade markets are external to two-sided market rules*”³. The two-sided market aims to facilitate equal participation in the market in a way in which will impact the interface between the wholesale and retail markets. How retailers currently interact and contract with customers would likely evolve, and new innovative approaches may be developed. Also, the design features may impact the level of risk exposure of participants which has flow-on implications for financial markets. Just because the two-sided market rules may be external to other markets, doesn’t mean there will be no implications for these markets. The ESB needs to consider a more holistic approach to understanding the risks, benefits and costs that may result from a two-sided market, particularly when citing market efficiency as a beneficiary.

The ESB should also broaden its perspective when considering the design elements. Firstly, the material is presented in terms of the benefits to AEMO or the benefits to consumers. While both are important, the ESB also needs to elucidate the potential costs, to all stakeholders, and benefits to stakeholders beyond AEMO and consumers. This will assist in the design development and the assessment of the overall veracity of the proposed framework.

³ ESB, *Op cit*, p.9

The ESB should also consider AEMO as a market participant to aid the design development. For example, the paper cites the need for AEMO to have more visibility of the market yet doesn't explore the need for a two-sided information flow and what that entails. The information flow to participants and consumers is fundamental to their participation decisions. For example, how consumers will determine the price point of entry or exit from the market.

Finally, there needs to be clearer articulation of what advantages a two-sided market will have over other approaches to addressing the identified challenges or opportunities.

3.2. Operational integration

As outlined above, placing obligations on functions rather than participants may not be practical in terms of ensuring appropriate risk allocation and accountability. While CS Energy is not against the market evolving to this approach at some point in time, it is a significant departure from the current design, and it is not clear what the benefits will be. It is suggested that the ESB first consider incremental changes in this respect to first demonstrate the ability and need.

For each of the incremental changes, the ESB needs to determine what level of participation is required to deliver a net benefit and whether this is achievable. In particular, the argument that consumer led change will underpin the two-sided market has not been substantiated. To date, initiatives such as the smart meter rollout in Victoria, efforts for cost-reflective pricing as well as new business models for participation such as aggregators have not had broad traction. There is a possibility that only a small proportion of customers will participate and so a cautious approach on what a two-sided market can deliver operationally is warranted.

(a) Scheduling and bidding

Details around potential scheduling and bidding approaches for a two-sided market need to consider unintentional adverse impacts alongside any discussion of benefits. It is not clear whether the ESB has performed a qualitative assessment of how decisions on scheduling may impact the operation of the power system, and thus negate any desired benefits. Examples include:

- Observations that the expectation that all scheduled traders can meet dispatch targets in each interval may not be realistic, and given that the size of the deviation is proportional to the size of the participant, the obligations can be less onerous. If this is true, then one can argue that the benefits they deliver to the system are also proportional. Furthermore, while each participant may be small, in aggregate they could constitute a large proportion of the market and should they all deviate from their targets in a given dispatch interval, the implications for system security and reliability may be significant. AEMO will also have to consider this aggregated deviation in how it manages the system, increasing costs.
- The paper claims that the two-sided market will deliver flexible capacity to the market. Without the necessary obligations on performance, AEMO will not be able to rely on this capacity or be confident in its availability and will procure capability from elsewhere.
- The decision that the framework should be proportional to the participant to present as low as possible a barrier for new entrants is naïve. Many barriers to entry exist to maintain the integrity of the system and market; the ESB needs to consider the broader risks that this would have to the power system as well as other participants.

- The desire to increase visibility to the market of the demand side but not require some participants to provide information into processes such as Medium-term Projected Assessment of System Adequacy (**MT PASA**) is perverse. Market decisions largely leverage the MT PASA and without visibility of all demand side participants, supply will be procured through other mechanisms such as new generation investment or out-of-market mechanisms and thus not solve the “dispatch problem”.
- The discussion of the technical requirements for smaller participants is inconsistent with the discussion presented in the WDRM. While telemetry costs are more onerous for smaller systems, the requirements exist to support system security and reliability and the WDRM proposes a threshold capacity per region of participants with reduced telemetry requirements. If the projected update of residential and commercial DER cited occurs and these consumers will participate in a two-sided market, how can the ESB justify relaxing the operational requirements of an increasingly larger proportion of the market.

In addition, any deviations on performance in the wholesale market will have impacts on the distribution network for smaller participants, and the ESB needs to work with distribution network service providers (**DNSPs**) to quantify these.

CS Energy agrees that demand forecasting will need some reassessment but argues that this is an issue across all the MDIs.

(b) Participation

The discussion on participation appears to be attempting to design a solution for an unconfirmed opportunity. The ESB would be better placed to consider the different customer groups and assess factors such as their technical ability to participate, the economic viability to participate and whether their ability to be flexible aligns with the system’s needs. This may then help to identify the structure of participation.

As discussed below, participation should also be informed by those able to participate in a way that aligns with the needs of the power system as well as a willingness to participate. The paper touches upon this briefly but states that the “*behaviours of large users are generally less predictable and more likely to have material demand response capabilities*”⁴. This conflicts with the discussion in the WDRM that focuses on large loads because of their predictability.

The ESB has failed to consider the costs and trade-offs of the different levels of participation and the claim that full participation should be the goal for a two-sided market as it provides the best outcome for the operator⁵ is unsubstantiated. CS Energy acknowledges the benefits to AEMO of increased visibility but does not consider whether what is best for the operator is also the best outcome for the market. The ESB needs to be more open-minded in its approach to assessing the options, ensuring that a more holistic view of the cost and benefits of any participation regime is conducted. This includes the associated compliance costs.

Further discussion on participation is contained in the benefits section below, as well a suggested first step for the ESB to consider.

⁴ ESB, *Ibid*, p.20

⁵ ESB, *Ibid*, p.21

(c) Access and pricing

CS Energy would appreciate further clarity on the access and pricing including:

- Why locational marginal pricing (**LMP**) is considered a necessary feature of a formal ahead market. There are many ahead markets that do not have LMP.
- Why consideration of two-sided markets is restricted to LMP. Exposure to wholesale market prices can be at the regional reference price.
- How two-sided markets will price congestion and defer investment. The current COGATI proposal has not been able to accommodate DRSPs let alone all participants so it is difficult to determine how this would be realised. Will traders need financial transmission rights (**FTRs**) and will there be an equivalent at the distribution level to manage local congestion?

The ESB also needs to consider policy barriers to locational pricing for consumers, a feature that is contrary to state government policy. Furthermore, in Queensland there are many areas of the network where the government regulates tariffs.

The network costing would benefit from closer collaboration with the Integrating DER MDI as it needs to factor in the broader operational implications of DER on the network. Many of the issues around network pricing will also depend on the structure of any Distribution System Operator and so can't be considered in isolation.

The ESB has argued that a customer that also generates should have reduced network fees as it is reducing the cost on the network by generating. This is simplistic. DER is already having a cost on networks and this will continue to increase as DNSPs work to increase hosting capacity and manage the technical challenges of increased levels of DER. Arguably a consumer participating in a two-sided market would be utilising the network for their financial benefit, and so the network is no longer solely a provider of an essential service. In this case, the customer should potentially pay for access to the network as other generators do. This does not consider the legacy network costs to which the customer was a contributor.

Implementing a subscription service for distribution networks would need careful scrutiny of consumer protection frameworks and it is unclear whether consumer or state governments would be amenable to such an approach.

(d) Consumer protection

Consideration of consumer protection needs to be focal to this review not complementary.

3.3. Benefits and costs

In theory the purported benefits may exist, but the paper's discussion is very high level and theoretical and ignores the costs and risks of the proposed design. The ESB needs to clearly articulate what is required within the two-sided market to achieve these benefits as well as an assessment of the potential costs and trade-offs for the market.

CS Energy acknowledges that some specific examples of benefits were provided, albeit at a high-level, but is concerned with their validity. For example:

- The claim that benefits will be overall responsiveness once the barrier of a lack of cost reflective pricing is removed. Given that the customer class that is currently most able to respond and can access the signals to respond hasn't demonstrated a willingness to do so, it is difficult to extrapolate the level of willingness among smaller customers to the scale and frequency that the ESB claims.
- Circular arguments that two-sided markets will solve the DER integration challenge but DER solves two-sided.
- There has been no study of the volume of demand side participation that is available, let alone whether its ability to be flexible coincides with times required by the system. For example, consumers are unlikely to shift their hot water systems in response to high prices if it means they will not have hot showers. A preliminary study by AEMO as part of the Future Power System Security Program suggested that activating all potential demand side response in South Australia is insufficient to mitigate the operational challenges of the increasing day-time duck curve.
- The benefits claimed from system services delivered by demand side participation are diluted by the discussion of the relaxed technical requirements and obligations that may be imposed on many of these participants.
- Proposed benefits to the Under-frequency Load Shedding (**UFLS**) mechanism via a market platform created by two-sided markets are ambitious and risky. UFLS is a non-market emergency mechanism that is explicitly designed to be an effective out-of-market reserve to guarantee its availability and effectiveness. The emerging issue of its efficacy with increased penetration of DER can be addressed by the visibility measures being introduced by AEMO and the DNSPs.
- Proposed benefits to reliability need to be reassessed. The ESB acknowledges that 99 per cent of supply interruptions are related to the network but then do not consider any increased risk associated with greater utilisation of the network and bidirectional flows.
- The ESB has also proposed that consumers would benefit from being able to agree to a level of energy reliability individual to them. CS Energy would appreciate further detail about how a model that allows for consumers to choose their own reliability will provide a transparent investment signal to the market. Furthermore, the suggested benefit of an associated reduction in costs will not materialise if the system continues to be planned and managed to the universal standard.

Overall, the ESB needs to apply a more pragmatic approach to assessing the potential benefits of two-sided markets that includes:

- Assessment of the available flexible response and its ability to be activated when required by the power system.
- Assessment of the level of participation required to achieve net benefits.
- Articulation of how two-sided markets provide benefits compared with other approaches to address the identified issues. For example, there are alternative approaches to visibility at the network and system level, opportunities for consumers to contract with DNSPs for local service provision and negotiated connection agreements. Early cost-benefit analyses have indicated that distribution level markets are not cost-effective, so understanding the potential benefits and costs of a two-sided market are essential.

- Acknowledgement that the increase in DER is already imposing a cost to the system and thus consumers, and so any assessment of benefits needs to consider the existing challenges as well as adopt a “do no harm” approach for any new active participants. This would also be consistent with the desire of two-sided markets to consider participants based on their functions not type, with the same requirements imposed on large scale new entrants.

In assessing how two-sided markets will operate, the ESB needs to consider the veracity of longer-term investment signals. If the level of participation and benefits purported are achieved, then future reliability and security of the power system will be reliant on the participation of consumers, the longevity of which cannot be guaranteed. A two-sided market would need to ensure that appropriate long-term signals are in place to manage the risk of any investment shortfall.

3.4. Evolution of system service markets

The ESB claims that two-sided markets should allow innovations in technical standards and services, without rigid market designs linking services back to physical types of generators, loads or storage⁶. CS Energy argues that market designs for services already are technology neutral, derived according to the underlying physics of the power system and the capability required to meet this.

CS Energy thus strongly disagrees with the ESB’s following argument in the paper that the types of services offered should evolve without the need for market rule changes. The rule change process exists to ensure effective and efficient changes to the market and should not be bypassed . Furthermore, if system services are to be valued, potentially in the market, changing the services in an ad hoc manner will only increase investment risk and thus costs.

4. Interaction with other MDIs

The ESB needs to better outline the synergies with other MDIs; CS Energy was disappointed that this was constrained to a very high-level diagram that seemed to indicate that two-sided markets are married with ahead markets and no other consideration of options will be undertaken. It is short-sided and potentially detrimental to consider two-sided markets alongside ahead markets only, particularly given the need for or benefits of ahead markets has not been demonstrated. This focus may only be constraining the ability to consider different levels of two-sidedness.

If two-sided markets are viewed as a potential procurement mechanism to efficiently integrate DER into the market, then this MDI needs to be interwoven with all aspects of two-sided market design. In particular, decisions around the operational integration of new participants and the feasibility of participation is dependent on what and how the two-sided market needs to deliver in order to first mitigate any operational issues associated with DER as well as extract potential benefits above this threshold.

As discussed above, interaction with the resource adequacy stream is essential to ensure the appropriate long-term investment signals, nor has the ESB touched upon the costs and benefits of two-sided markets relative to the evolved NEM.

⁶ *Ibid*, p.11

The paper does list four projects underway that will assist in the development of the two-sided market concept but doesn't indicate how they will assist and what is the process for ensuring open consultation on these processes where they interact.

CS Energy is also concerned that the ESB has listed several trials that are underway or proposed that will provide critical input into the development of this MDI. Not only is there no discussion of what aspects of the design these projects will feed into, the timing of all the projects conflict with the timing of the NEM 2025 process. The earliest any of the listed projects are scheduled to finish is sometime in 2020 yet the ESB is proposing to provide the COAG Energy Council with detailed design options by the end of 2020.

The ESB needs to be very clear in how it is going to manage these conflicting timelines and ensure an open, efficient and effective process for the development of reform options.

5. Transitional measures

The ESB has sought feedback on the potential transition pathways to its proposed two-sided market. There is little point in determining a transitional framework to a design that has not been demonstrated to be viable or beneficial.

The ESB would be best placed to consider how aspects of two-sided markets can be achieved incrementally without compromising system security and reliability or the underlying market design principles.

A staged approach would also make use of the trials underway and can also be used to inform trials.