Market Development Advisory Group - 100% renewable electricity supply – issues discussion paper

Summary of submissions

The Market Development Advisory Group's (MDAG) consultation on its issues discussion paper on price discovery under 100% renewable electricity supply (Issues Paper) closed on 16 March 2022. MDAG received 29 submissions on the Issues Paper.

Table 1: Submitters on Issues Paper

Type of party	Submitters
Consumers	Fonterra, Major Electricity Users' Group (MEUG)
Distributors/grid owner	EA Networks, Electra, Entrust, Orion, Transpower, Vector
Generator-retailers	Contact, Genesis, Mercury, Meridian, Nova, Trustpower
Generators	Independent Electricity Generators Association (IEGA), New Zealand Geothermal Association (NZGA), New Zealand Wind Energy Association (NZWEA), Solar Zero, Wind Quarry
Retailers	Electric Kiwi and Haast, Electricity Retailers' Association of New Zealand (ERANZ), Independent Retailers
Other	Business Energy Council, Enel X, Energy Link, Engineers for Social Responsibility, Electric Power Optimization Centre (EPOC), Hiringa, Neil Walbran Consulting

In general, the feedback from submitters was positive. Submitters tended to agree on the key issues identified in the Issues Paper – these being real-time coordination, ancillary services, accurate spot-price signals, demand-side flexibility (DSF), contracts market, transition, and competition. Trustpower submitted that "we strongly support MDAG further considering the identified issues and the appropriate range of solutions during the next phase of the review". Many submitters agreed with the modelling conclusion that spot price volatility would increase, although some submitters were more skeptical of the extent that New Zealand's hydro assets would mitigate this volatility.[1]

In the following sections we provide a high-level summary of submitters' views on each of the issues identified in the Issues Paper. Please note that this summary is not an exhaustive list of all issues raised by submitters.

Real-time coordination/ancillary services

Many submitters agreed that the wholesale electricity market (WEM) remained the best way to coordinate resources in real time.[2]

Some submitters agreed that some ancillary services that are currently freely provided will become scarce under 100% renewable electricity supply. Some submitters noted that changes to regulation and

[1] Electra, Genesis, Hiringa, MEUG, Nova, Transpower

[2] Business Energy Council, Contact, Electric Kiwi and Haast, Energy Link, Genesis, Hiringa, Mercury, Meridian, Neil Walbran Consulting, Nova, NZWEA

pricing would be required for newer technologies (such as aggregated distributed energy resources (DER)) for them to be able to provide ancillary services.[3] MDAG should also consider the audience that will interact with the ancillary services market and consider how ancillary services will be optimised.[4]

Accurate spot price signals

There was general agreement that periods of high prices are important but that this can be politically challenging.[5] Some submitters argued that the paper focused too much on price suppression (i.e. artificially low prices) and not enough on artificially high prices resulting from inadequate competition.[6] Some submitters noted that trust in the market and investor certainty are important, and MDAG should investigate measures to improve these.[7] Submitters suggested additional options that MDAG should investigate, including the design of the stress-test regime, the design of scarcity pricing, improvements in forecasting, allowing negative prices, improvements in competition, and ways to attract new entrants.[8]

As noted above, there was general agreement that the WEM was the best way to coordinate resources in real time, although some disagreed. Some submitters also suggested that MDAG consider complementary mechanisms (including capacity mechanisms).[9] Genesis noted that they "agree a wholesale market (with real-time pricing) remains key to ensuring diverse and disaggregated resources are coordinated and optimised" but that "it is foreseeable that a capacity mechanism, in addition to the existing energy-only structure, may be necessary to manage price and supply volatility on both sides of the market". Submitters also generally agreed with MDAG's identification of the requirements for an energy-only market,[10] with Electric Kiwi and Haast stating that "MDAG has articulated well the requirements for an energy-only market". Transpower noted that there were value stacks outside the WEM and wider systems thinking was required.

Demand-side flexibility

Many submitters agreed with the DSF issues identified by MDAG. Some submitters noted the importance of managing DSF through aggregators or some kind of semi-centralised process[11] and noted that competition in the provision of such aggregation services is important.[12] Some submitters noted that improved incentives and accessibility are needed for consumers (particularly residential consumers) to better participate in the DSF market[13] and noted that many consumers may also not want to be flexible as they may prioritise other uses of their DER (such as heat or transport).[14] However, a couple of submitters noted that there is also potential for DSF in the commercial and industrial markets, as well as

[3] Meridian, MEUG, Solar Zero
[4] Energy Link, IEGA, Meridian
[5] See, for example, Energy Link, ERANZ, Genesis, Meridian, NZGA
[6] See, for example, Electric Kiwi and Haast, Fonterra, Hiringa, Independent Retailers, MEUG, Transpower
[7] Energy Link, ERANZ, Fonterra, Genesis, Meridian, Solar Zero, Trustpower
[8] Energy Link, Independent retailers, Meridian, MEUG, Transpower
[9] Electra, Engineers for Social Responsibility, EPOC, Genesis, IEGA, NZGA, Transpower
[10] Contact, Electric Kiwi and Haast, Energy Link, Genesis, Mercury, Neil Walbran Consulting, NZWWEA
[11] Electra, Fonterra, Meridian, MEUG
[12] ERANZ, Meridian
[13] Electric Kiwi and Haast, Engineers for Social Responsibility, Fonterra, NZGA, Orion, Transpower, Vector
[14] Energy Link, Orion

in specific "power to X" developments.[15] Enel X submitted that the most effective way to bring DSF into the wholesale market is to allow parties to sell demand reductions ("negawatts") rather than just through demand bids. EPOC also noted the need for long-term DSF.

Contracts market

Submitters generally agreed that the contracts market will be important with a 100% renewable electricity supply. Some submitters argued that the MDAG paper focused too much demand-side contract market issues and not enough on supply-side issues.[16] The Independent Retailers noted that in their experience "sub-optimal hedging and risk management is due to weak (present) market-making arrangements and the incentives of vertically-integrated incumbent suppliers, i.e. it is a supply-side problem." Transpower submitted that MDAG should consider barriers to contracting. Submitters also suggested new contracting products are required – suggestions included conditional forward contracting obligations and cap products.[17]

Transition

Submitters noted that any approach to the transition to 100% renewable electricity supply should consider fuel issues, the ETS, staffing and other resourcing, and development lead times.[18] Trustpower noted the importance of investor/regulatory certainty and suggested that specific transition arrangements may be required.

Competition

Many submitters agreed that competition was a key issue to consider. Some submitters noted that a lack of competition is also a current problem, not just a future one, and that MDAG's analysis should start from this point.[19] Submitters tended to agree with MDAG that competition issues were most serious in the flexibility services market due to the market concentration in hydro generation. Some submitters noted this has serious consequences in dry years - as Electric Kiwi/Haast put it, "if Meridian gets it wrong, New Zealand gets it wrong." Proposed options for addressing competition issues included structural reform (such as a cap on market share), increasing monitoring and enforcement, and changing offer rules.[20] Meridian submitted that "we do not know how the market will evolve over the coming years. If seasonal flexibility services are highly concentrated, then the issue could be considered as and when it arises."

Other issues

Several submitters noted the need to take a whole of systems approach when addressing various issues.[21]

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[15] Enel X, Wind Quarry
[16] Electric Kiwi and Haast, Fonterra, Independent retailers
[17] Contact, Independent Retailers, Meridian, Transpower, NZWEA
[18] Fonterra, Genesis, MEUG, Nova
[19] Electra, Electric Kiwi and Haast, Independent Retailers, MEUG
[20] Electric Kiwi and Haast, Independent Retailers, Nova
[21] Orion, Transpower, Vector

Transpower noted the importance of considering the practicality of any options. It suggested working closely with various parties, including the system operator and the Authority's market performance team, and interacting with the Future Security and Resilience workstream.

A key theme of Meridian's submission was that many issues could be left to the market. It argued that new ancillary service products, hedge products, and an efficient transition would evolve naturally.

Some submitters identified the reform of the Resource Management Act as an important factor to consider, as it could make resource consents less permissive and more difficult to obtain.[22]

[22] NZWEA, Trustpower