Fonterra Submission to the MDAG "Price discovery in a renewables based electricity system" consultation document

March 2023

Introduction

Fonterra welcomes the opportunity to submit to the MDAG on the consultation document, "Price discovery in a renewable based electricity system".

As a large participant in the New Zealand electricity market, we trust that the commentary we put forward in this submission is a constructive contribution to help ensure the New Zealand electricity market functions well and is set up for success in delivering low-cost electricity and the transition to a low emissions economy.

Fonterra is a co-operative owned by around 9,000 New Zealand farming families. With the support of the New Zealand Government, we have a modern and world-leading dairy industry where our products are desired in markets around the globe and where an increasing number of customers and consumers are seeking and willing to pay a premium for New Zealand products with strong sustainability credentials, in addition to the critical role of dairy to global nutritional requirements.

Fonterra's commitments to achieve net-zero emissions by 2050 for our operations and a 30 percent absolute reduction to our operations emissions by 2030 (compared to FY18 levels), align to the Climate Change Commission's recommended pathway for decarbonisation of industrial process heat, which includes an end to the use of coal by 2037.

We have 27 manufacturing sites spread across New Zealand, in addition to science and innovation centres and distribution facilities which are integral to the business. Each factory is unique in terms of the volume of milk it processes, the products it makes, the customers it supplies, the energy and water sources available, and the age of its assets. Nine of our sites rely on coal as their primary source of energy, including one which co-fires with wood biomass. Seven of these sites are in the South Island where there is no reticulated natural gas available. Our national asset network comprises 20 coal boilers and air heaters, and 67 gas boilers and air heaters installed across our manufacturing sites. By the end of this season, only seven sites will use coal.

Across our Co-operative we continue to focus on actions that will reduce our impact on the environment and play our part in meeting New Zealand's collective decarbonisation goals. Last year we set our long-term strategy and made leadership in sustainability one of our three core priorities. As part of this we intend to invest around $1 billion in sustainability initiatives over the next decade. Much of this will be required to upgrade our core manufacturing assets as we look to decarbonise our footprint and improve water use and quality.

Fonterra uses approximately 800 GWh per annum of grid electricity, and also 200 GWh per annum of electricity generated by our third-party co-generation partners. This combined annual electricity usage of approximately 1,000 GWh is the 4th largest industrial use in New Zealand. Due to Fonterra's manufacturing sites being located throughout the regions this represents the largest opportunity for demand response and advance interaction with the electrical system to support the energy trilemma of lowering electricity costs, improving security of supply and increasing sustainability of electrical generation.

The following sections provide our views on the issues raised in the consultation document. Should the Electricity Authority (EA) have questions, we would welcome further engagement.

Discussion on the questions raised in the consultation

Fonterra supports the work of the EA and MDAG to seek to understand what the Electricity Market needs to look like as the percentage of variable renewable electricity generation increases beyond 90% in 2030. We are concerned that the scope of MDAG's focus to 2030 is too late as we need solutions now to bring the current electricity spot market prices down as they are currently stifling decarbonisation via electricity. New Zealand's electricity users need a predictable and orderly transition as the amount of variable renewable electricity generation increases.

The price of electricity on the spot market should equal the blended LRMC of all generation over the year. However, the current pricing indicates that generation risk is being priced into the market for users to carry instead of being carried by the generators.

We have had some view of what the future looks like during the period of November 2022 through to January 2023 when the renewable proportion of the electricity generation was above 95%. During this period, prices were sustained around $10 to $30/MWh with spikes to $300/MWh during the morning and evening peaks of high demand. This follows the modelling of MDAG that the prices for the majority of the time will follow SRMC and then spike to the value of lost load (VOLL) during periods of constraint.

Fonterra supports the focus on the value Demand Response Flexibility (DSF) will deliver to the electricity market as the percentage of Variable Renewable Electricity Generation (VREG) increases. We note that options C4 or C9 is a priority for the EA / MDAG. It must be firstly recognised that the historic situation of demand response is different to the new demand side flexibility – as historically demand response was aligned to regional coincidental peak demand periods and therefore was able to be planned for.

The new expectation on DSF to remove load when VREG output decreases will mean short notice on the need to respond and an unknown length of time to maintain the reduced demand. This leads to uncertainty of financial benefit under the current spot market compensation model where the expectation that consumers that decrease demand will benefit from having CfD's in place and lower spot market purchases. If this compensation model persists, industry will not be the expected source of large scale DSF and the electricity market may miss an opportunity to be optimised.

For industry to participate in DSF, they need confidence in the financial benefit to recover the cost of lost production, shutdown and start-up waste generation and energy use, or the capital cost for alternative supply options (i.e. storage such as batteries or alternative energy sources such as biomass) in order to provide the DSF.

This lends itself to a solution similar to the reserves market where DSF participants bid in a volume of DSF to the System Operator (SO) thereby providing visibility to the SO which can be compensated with a fixed payment. Then the DSF participant can bid into the RTP market at a $/MWh level that compensates them for the value of the demand reduction and it's up to the SO to decide what is the lowest cost to balance the price stack be it additional generation or DSF.

The C4 option where a third party offers a DSF financial product is needed but should not be the only solution so that there can be some competition in the marketplace which will ensure DSF occurs. There are already examples of these types of agreements being made but not disclosed publicly, therefore it is unknown what visibility the SO has of the volume of DSF on available.

For Fonterra, to develop a business case to invest in DSF, there are several things we would need to know. For example, if we knew that we would receive an annual payment for being able to participate in the DSF market, as well as had some ability to forecast the number of expected events per year, then we could develop an internal $/MWh revenue recovery value.

Fonterra supports the option A1 that increase the visibility of future supply/demand and therefore subsequent prices which will allow for demand response planning and /or battery charging. This could be expanded to a day ahead market as discussed in option A6 which is discounted mainly due to lead time. We encourage revisiting this option.

Option A4 should also include the function of very fast reserves procurement that can be used to support the development of batteries or other technologies that can be used for virtual spinning reserve or other services that existing thermal plants currently supply to stabilise the grid.

Fonterra is against the concept of warming contracts, strategic reserve, or a capacity market as these market options will cost end users and potentially deliver questionable benefits to the point of potentially slowing the build of new VRE generation and therefore impacting the decarbonisation of the electricity market and industrial process heat decarbonisation via electrification.

The ability to effectively manage spot market price risk via ASX hedges continues to be a focus area. Fonterra notes that there appears to be excessive risk being priced into the forward curve and that the depth of the market has decreased due to the departure of one of the markets clearing partners. The extension of time horizon from three-year hedges out to five years as discussed in option B2 would be of value to the market as an indication of future generation entering the market.

Fonterra welcomes the opportunity to engage with MDAG going forward as New Zealand transitions to a highly renewable electricity market.

Yours sincerely,

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