Introduction

1. This submission is made on behalf of Meridian Energy Limited ("**Meridian**") in respect of the Commerce Commission's ("**Commission**") Statement of Issues ("**SOI**") dated 5 February 2025 relating to Contact Energy Limited's ("**Contact**") application for clearance to acquire Manawa Energy Limited ("**Manawa**").

2. The SOI contains a number of apparent errors, and/or misunderstandings by the Commission, as to how the New Zealand electricity industry operates. Meridian sets out its concerns below.

"Shaped hedges" are not a separate market

3. Baseload hedges and shaped hedges are not, as the Commission says 'risk management tools for different times of the day'. A base load hedge would typically cover the full day whereas a shaped hedge would only cover, say, the daytime part of the day or the morning and evening peaks. So a shaped hedge would cover part of the time covered by a baseload hedge – it is essentially a subset of a baseload hedge. In Meridian's experience, prospective purchasers or sellers of base load hedges or shaped hedges are prepared to consider, as alternatives, hedges which provide them with cover for different times of the day than the ones they have requested, particularly if there is a small but significant price difference between the cover requested and the cover offered.

4. In relation to supposed constraints on ability to supply shaped hedges Meridian disagrees with the Commission. As we explain further below the list of potential suppliers is not as limited as the Commission seems to believe. It includes as a starting point all generators with firm generation whether that is geothermal, thermal, biomass, or hydro, as well as battery owners and those with access to demand response.

It is not just Contact, Mercury and Meridian who can, and do, supply "shaped hedges"

5. The Commission claims (SOI at [134.1]) that currently the only material suppliers of shaped hedges are Contact, Meridian and Mercury. This is not correct.

6. Genesis is also a material supplier of shaped hedges:

   (a) In Huntly Power Station, Genesis owns New Zealand's largest power plant. More importantly, the ability of Huntly to generate during peak and super-peak periods is not dependent on, nor limited by, hydrology.

   (b) Last year, Genesis went to market seeking expressions of interest for its Huntly Firming Options ("**HFO**"), which in exchange for an annual premium give the buyers of the HFO the option to call on the generation of the Huntly Rankine units (notionally) "as and when they need and in a shape tailored by them".[1] Genesis has confirmed that 85MW of HFOs have been secured by multiple market participants.[2] The HFOs include baseload, peak and super-peak elements.

---

1 See genesis_huntly_firming_options.pdf.

2 See Genesis Energy confirms 85 MW of Huntly Firming Options | Genesis NZ.

Meridian Energy Limited
Level 2, 98 Customhouse Quay
PO Box 10-840
Wellington 6143
New Zealand
Phone +64-4 381 1200
Fax +64-4 381 1272
www.meridianenergy.co.nz

7. Furthermore, fundamentally shaped hedges are just a financial instrument and there is no requirement to have flexible generation, or in fact any type of generation, to be able to offer them. Market speculators have been known to both buy and sell electricity hedges. In Australia, cap products (a type of flexibility product) have been traded by banks and other financial institutions (ie not electricity market participants) for the last 15 years or so:[3]

> To guide their trades, teams – within hedge funds, investment banks or commodities houses – have equipped themselves with cutting-edge technology to better predict the weather. Traders, quants and meteorologists collaborate to identify electricity supply and demand imbalances.

An assessment of generation distribution is <u>not</u> a reliable measure of flexibility

8. The Commission treats (SOI at [125]) the difference between the 95th and 5th percentile of generation distribution of a given plant as a measure of its flexibility. This is an oversimplified blunt proxy at best and is divorced from the practical reality of the decisions facing electricity generators:

   (a) For intermittent must-dispatch generation, the generation distribution likely overstates the amount of flexibility available as it is changes in weather conditions (wind and sun) that are driving the changes in generation rather than a conscious decision on the part of the generator.

   (b) Even for hydro plants that have storage, it is incorrect to treat generation distribution as a measure of flexibility:

      (i) Hydro plants operate in a natural environment and are subject to strict resource management obligations and physical restrictions that impose obligations on both minimum and maximum water flows to minimise environmental impacts. These obligations and physical restrictions can require Meridian to divert water around its dams to prevent them being overtopped or damaged and to maintain waterflows for neighbouring streams, rivers, lakes etc during particular times. There are also limits on a hydro generator's ability to access contingent hydro storage, which further limits their ability to access flexible generation.

      (ii) Differences in Meridian's generation output are principally a function of hydrology. If it is a dry year, water is scarce, and Meridian is constrained in how much it can physically generate whilst satisfying its resource consent obligations. However, if the lakes are full and steady rainfall predicted, Meridian can and does generate more electricity in full confidence that there will be sufficient water reserves to sustainably operate in future periods.

9. For these reasons, generation distribution is not an accurate indicator of flexibility (particularly when considered in advance) as it does not take into account what is driving the variable

[3] See https://www.afr.com/companies/financial-services/savvy-energy-traders-are-betting-the-house-on-australian-power-20240326-p5ffej

generation, which for the most part is weather conditions given New Zealand's predominantly renewable electricity grid.

Any assessment of flexible generation must consider hydrology

10. The Commission's premise appears to be that the ability to provide shaped hedges is generally linked to having assets with flexible generation capacity and that flexible hydro generation capacity will be increasingly important. Meridian challenges this assessment.

11. Shaped hedges are just financial products and so anyone can offer to sell or buy a shaped hedge. There is no requirement for that shaped hedge to be backed by any physical generation. The potential suppliers of shaped hedges are therefore broader than assumed by the Commission.

12. If the Commission considers that having flexible generation capacity is essential to offering shaped hedges then the Commission also needs to take into account, when assessing the flexible generation capacity of hydro generators: (i) hydro storage capabilities; (ii) hydro inflows of a plant; (iii) resource consent constraints; and (iii) the inherent uncertainty in predicting hydrology materially in advance of the relevant trading period.

13. These factors are critical to assessing the actual flexible generation of a hydro generator that could theoretically be used to underwrite a shaped hedge – particularly hedges relating to trading periods that are more than a couple of months away. For example, Meridian was forced to spill due to high lake levels as recently as December 2024 at Manapouri and early January 2025 at Pukaki. However, as of the date of this letter there is now an emerging drought in the South Island.

There is a strong pipeline of new generation from <u>all</u> market participants

14. The Commission claims (SOI at [162.2]) that independent generators will be the main source of investment in generation based on undisclosed Transpower data. Meridian agrees that independent generators are strong competitors in investing in new generation and have a solid pipeline of projects. However, the existing players also have an equally strong pipeline of projects that should not be discounted by the Commission:

    (a) Since 2000, of the $7 billion of new generation that has been committed for build, approximately $4.5 billion (2/3rds) is from Meridian, Mercury, Contact or Genesis; $700 million (10%) is from smaller players or lines companies; $550 million (~8%) is from independent generators; and $1 billion (~15%) from rooftop and commercial solar installation.

    (b) Meridian's own investment pipeline includes a further $3 billion of investment by 2030 and up to $10 billion by 2050 creating 5 GW of new generation capacity.

The stock of flexible generation capacity is likely to increase

15. The Commission claims (SOI at [47]) that "the stock of flexible assets which underpin Shaped Hedges – thermal and flexible hydro plants – is likely to shrink in the future as thermal plants (which are carbon producing) are retired". This position defies economic reality.

16. New Zealand needs additional flexible energy resources moving forward. Meridian has recently augmented its long-term energy forecasts with an in-depth study of New Zealand's long-term 'flexibility challenge'. That study assessed how the market could evolve within the typical trilemma trade-offs energy systems encounter and what that implied for the amount of flexible resources (across four time-scales being; instantaneous, day-night, weekly and seasonal) New Zealand might need to deploy. That study forecasted that an extra 200MW of new flexible capacity was needed every year for the next 25 years (assuming a high demand growth scenario as a result of rapid decarbonisation through electrification) in order for the system to satisfy demand at least cost – whilst effectively managing hydrological risks and other contingencies. The current electricity wholesale market is working efficiently by providing a price signal to incentivise investment in new flexible resources (the recent groundbreaking Demand Response agreement with the Tiwai Point Aluminium Smelter being a relevant data point). And, pricing volatility is necessary to underwrite the business case for new investment in flexible capacity. It is difficult to reconcile these prevailing economics with the Commission's view that flexible assets will decrease over time

17. The Commission's view that the only flexible assets are thermal and flexible hydro plants is short sighted and supply-side centric. Flexibility should be thought of more broadly as the ability to modify electricity generation and/or consumption to provide a balancing service to the power system. Additional flexibility is likely to come from a range of different sources including:

(a) **Demand response:** Agreements whereby electricity users are compensated for reducing or delaying their consumption are credible options to enhance energy efficiency by avoiding over consumption. Meridian has entered into a demand response agreement with New Zealand's largest electricity user (New Zealand Aluminium Smelters Limited) to provide demand response flexibility of up to 185 MW per hour.

(b) **Consumer contracts:** Independent retailers can and do enter into contracts with their retail customers to encourage or incentivise shifting of demand from peak periods to non-peak periods either through cheaper off-peak power plans or hours of free power during off-peak periods.

(c) **Democratisation of electricity:** Innovation and new technologies have enabled households to decrease their reliance on the grid through the installation of solar panels and batteries, which are increasingly more affordable and available. Not only can this technology reduce the reliance of individual households on the grid, but virtual power plant technology exists for these resources to be collectively managed and offered back to the grid when supply is tight.

(d) **Virtual power plants:** Agreements where energy companies remotely manage and optimise the use of stored energy in people's homes (mainly EV batteries) and the timing of things like EV charging and heating hot water to take pressure off the grid.

(e) **Grid scale batteries:** Meridian notes that 335MW of new grid scale battery storage is under construction nationwide, with another 200-300MW in advanced planning. The SOI appears to dismiss batteries on the basis that they are only capable of providing short-term flexibility. This fails to recognise that (i) super peak periods are also by definition short-term and batteries can reduce the pricing volatility during super peak periods; and (ii) grid scale batteries are in their infancy – as the

technology improves, batteries will become cheaper, more efficient and available in larger capacities.

(f) **Biomass:** Biomass is a renewable energy resource with local feedstock in New Zealand. Genesis has undertaken a trial on using biomass as an alternative fuel for its Rankine units and is "confident a sustainable and financially viable local supply chain is possible and that biomass may replace coal as the fuel source".[4]

(g) **Increased generation capacity in general:** Any increase in baseload electricity generation is likely to increase the available flexible capacity in the market. As more intermittent must-dispatch generation is built, flexible assets will be able to preserve generation capacity for peak periods. This will go some way to mitigating the volatility of electricity prices.

The Commission has overstated the importance of shaped hedges to independent retailers

18. The Commission has overstated the importance of shaped hedges to independent retailers for the following reasons:

(a) All retailers (including gentailers) purchase electricity off the spot market. Traditionally, retail customers in New Zealand have paid fixed retail prices and are not exposed to the pricing volatility of the spot market – it is the responsibility of the retailer to manage the pricing risk of the spot market.

(b) There are a broad range of risk management tools that can be used by retailers to manage this risk including investing in new generation; investing in batteries; entering into PPAs to underwrite investment in new generation; purchasing hedges on the ASX; entering into over the counter hedges with other market participants and/or financial speculators; entering into financial transmission rights (or FTR) hedges; risk sharing with customers through partially/fully floating retail prices; contractual arrangements to encourage customers to shift demand; entering into demand side response arrangements; and/or investing in virtual power plants.

(c) There are a range of suppliers for each of these risk management tools including many that are not active in the retail electricity market.

(d) The earlier a retailer puts in place a strategy to manage their spot market pricing exposure, the more options are available and the cheaper those options are. Recently there has been a general trend of increasing wholesale electricity prices. Retailers who sought to proactively manage this risk 2-3 years ago are in a much better position than those who are seeking to effectively buy insurance when much of the risk has already eventuated.

4 See genesis_huntly_firming_options.pdf

Trading of new standardised flexibility product further widens options for independent retailers

19. Earlier this year, Aotearoa Energy was appointed as the representative broker to facilitate anonymised trading in a new standardised flexibility product for super peak hedges. Under this regime, which is effectively an auction, market participants can submit anonymised buy and sell offers to purchase standardised super peak hedge contracts. Aotearoa Energy then matches buyers and sellers and confirms the trade. Buyers and sellers are anonymous to each other until after the trade is confirmed.

20. The auction is at its infancy, but the early signs are promising with the number of participants and concluded trades increasing over the first three auctions. Meridian has already successfully concluded trades with a range of parties including independent retailers. As participants become more familiar with the auction, the liquidity of these products will increase, which will facilitate a broader set of market participants on both the buy and sell side.

A generator cannot unilaterally increase or decrease spot prices if it is <u>not</u> pivotal

21. Meridian does not agree with the Commission's claim that generators can affect spot prices, even when they are not gross or net pivotal, by engaging in what the Commission has called "temporal output optimisation".

22. Meridian makes the following observations:

(a) Meridian agrees that to the extent that pivotality analysis is helpful, it is net pivotality that matters as there is no incentive for a gentailer to withhold capacity if the gentailer has to buy back more electricity from the spot market than it sells at inflated prices. Net pivotality therefore better reflects when a generator may have both the ability and incentive to withhold generation capacity.

(b) The type of behaviour that the Commission is suggesting (ie temporal output optimisation) is prohibited by the High Standard of Trading Conduct Rule in the Electricity Code that states (at 13.5A(a)) that:

> Where a generator submits or revises an offer, that offer must be consistent with the offer that the generator, acting rationally, would have made if no generator could exercise significant market power at the point of connection to the grid and in trading periods to which the offer relates.

Market conduct is closely scrutinised by the Electricity Authority. For many plants (wind, solar, run-of-river hydro in particular), there is no ability to sacrifice generation today to generate more tomorrow. The Electricity Authority can readily (and does) monitor the behaviour of dispatchable plants where there is a need to decide how much to offer in and at what price. The theory of harm is therefore premised on generators acting illegally, which is an unreasonable assumption upon which to base a theory of harm.

(c) Net pivotality is a binary exercise and is backwards looking. The analysis does not account for how pivotal a firm is and whether there would be uncertainty in real time over whether a firm will be pivotal. If a firm is only marginally pivotal and/or there is

uncertainty over that, any attempt to withhold capacity would be risky, as it could result in no revenue from the withheld plant, no price uplift for the generator's plants that are dispatched, and incurring losses through buying more electricity in the spot market than has been sold by the generator. At any given time, Meridian considers that there is around 100MW of uncertainty about total demand/supply, which reflects the inherent uncertainty that is faced in real time as a result of variations in intermittent wind generation, intermittent solar generation, national demand and a gentailer's own retail demand. In particular:

(i) In the hour between when bids are submitted and dispatch occurs, wind generation can differ from what is forecast and national demand may move (eg a weather front passes slightly earlier or later than expected); and

(ii) Given the reconciliation process retailers do not have certainty over their retail volumes for several months after the end of the trading period.

(d) Meridian has not seen, nor has the Commission provided, any evidence of generators engaging in temporal output optimisation. It would be difficult enough for firms to determine in real time they are net pivotal (Meridian does not do net pivotal analysis) let alone engage in some sophisticated strategy to influence market prices in circumstances when the market will clear without any of the generator's capacity being dispatched. Given that none of the generator's unaccounted capacity is needed to meet the residual demand, any withholding strategy is unlikely to have any impact on market prices, let alone a material impact.

(e) The Commission states (SOI at [232]), "it is less clear to us whether the regulator regime under which the EA operates enables the EA to monitor and detect situations where there are smaller spikes in prices". However, the Electricity Authority does closely monitor market behaviour, including through mechanisms like the High Trading Standard Rule referenced above. To the extent that more is hypothetically needed, the Electricity Authority has broad Code making powers under the Electricity Industry Act 2010.[5]

Wholesale electricity market is not vulnerable to coordinated effects

23. Meridian disagrees with the Commission's claim (at [242]) that the wholesale electricity market "may currently be vulnerable to coordination" for the following reasons:

(a) With 52 grid injection points and 48 trading periods each day, it is practically impossible to reach any coordinated outcome.

(b) Gentailers need to generally ensure that they generate sufficient electricity to at least meet the needs or most of the needs of their retail book (including retail customers and commercial and industrial customers). Gentailers each have different size retail books with different balances of customers in terms of load size, load profile and location. Furthermore, most mass-market retail customers are not on fixed contracts and are free to switch retailers at any time. These dynamics destabilise any theoretical coordinated outcome.

5 Electricity Industry Act 2010, s 38 and 39.

(c) There are no dispatch decisions to be made with respect to intermittent must-dispatch plants. The inherent unpredictability in the generation capacity of these plants further destabilises any theoretical coordinated outcome.

(d) There is material variability between the cost structures of different plants and different suppliers:

(i) As the Commission has rightly identified, the thermal generators' cost base reflects commodity prices;

(ii) Meridian and Mercury's cost base is largely dependent on hydrology. All of Meridian's hydro plants are located in the lower South Island whereas Mercury's hydro plants are located along the Waikato River. There is often no correlation between hydrology in the lower South Island and on the Waikato River.

(e) The Electricity Authority routinely monitors market conduct and has the appropriate tools to be able to detect and address conduct that breaches the trading conduct rules.