AIR NEW ZEALAND

18 December 2024

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To: Electricity Authority (connection.feedback@ea.govt.nz)

Submission on the Electricity Authority's consultations on network connections and connection pricing

1 Air New Zealand welcomes the opportunity to submit on the two complementary consultations from the Electricity Authority Te Mana Hiko (the Authority) on:

- Distribution connection pricing proposed Code amendment; and
- Network connections project – stage one.

2 Air New Zealand agrees with the Authority's aims to make significant progress towards efficient connection pricing and remove barriers and create efficiencies in the application process for connecting to networks. Improving consistency in the cost and speed of electricity connections, including at airports around the country, will support aviation decarbonisation and regional productivity and connectivity.

Air New Zealand context

3 As the national airline, Air New Zealand has a critical role in the social and economic success of Aotearoa with respect to domestic and international tourism and travel, and export of Aotearoa's products. Aviation connects Aotearoa to the world and is vital to the basic functioning of our economy, our critical infrastructure and our health system. It is necessary for our exporters to distribute high-value goods to the rest of the world and to import the critical goods and services needed to keep our economy running. It ensures that our people can continue to connect with others at home and abroad, and it is fundamental to the ongoing success of our world-class tourism proposition.

4 Air New Zealand is also committed to playing its part in the global response to the climate crisis. We have a goal of reaching net-zero carbon emissions by 2050. Work is underway to consider a new near-term emissions reduction target for Air New Zealand that reflects the challenges outside of the airline's direct control.

5 Next generation aircraft powered directly by electricity and/or green hydrogen are expected to be critical technologies for reducing carbon emissions, particularly on our domestic network. Alternative aviation fuels, widely referred to as Sustainable Aviation Fuel (SAF), including eSAF produced with renewable electricity, are also vital to the aviation sectors' decarbonisation.

6 Our modelling indicates that as much as 850 GWh of renewable electricity may be required for Air New Zealand's domestic fleet decarbonisation in 2035 (green hydrogen production and battery electric aircraft), growing to circa 3 to 6 TWh per annum by 2050.[1] These estimates do not consider the potential electricity demand for green hydrogen used in producing eSAF or the potential electricity demand for capturing atmospheric carbon dioxide to use as an input to eSAF or to mitigate any residual emissions. SAF will likely be needed to decarbonise international flights and in the near term for domestic flights. Aotearoa could credibly provide SAF to other international airlines flying here as well.

7 Air New Zealand has purchased its first electric aircraft [2] and will commence operating commercial flights from 2026, initially as a freight only service. We have options for an additional two electric aircraft, and rights for a further 20. We aim to fly larger low-emissions aircraft on domestic routes beyond 2030 once market and operating conditions are viable and safely established.[3]

8 Air New Zealand currently serves 20 domestic destinations, and flies to 30 international ports across Australia, the Pacific Islands, North America and Asia.

9 Many airports in Aotearoa have embedded networks to deliver electricity to the various companies that operate within their precincts.

10 Airports are transport hubs and as the transport sector continues to electrify and decarbonise, new and upgraded connections will be needed at airports for: public charging of electric vehicles (EVs) visiting airports, including private vehicles, taxis, rideshare vehicles (like Uber) and courier vans; charging of EVs in rental car and rideshare fleets based at the airports; charging electric trucks and other electric vehicles such as forklifts and container handlers operating within the freight and logistics depots located at airports; charging electric buses and coaches based at the airport; charging electric ground service vehicles including those operating on the apron; providing ground power to aircraft; and charging electric aircraft.

11 Buildings on airport precincts, including hangars, freight and logistics centres, and warehouses, have significant large roof spaces suitable for solar photovoltaic (PV) generation, with some

[1] The figures quoted are derived from Air New Zealand's own internal modelling as well as the report from the New Zealand Hydrogen Aviation Consortium (September 2023) *Launching Green Hydrogen Powered Aviation in Aotearoa New Zealand*. Available here.
[2] Air New Zealand Media Release (December 2023). *Air New Zealand announces BETA's ALIA as launch aircraft for Mission Next Gen Aircraft programme*. Available here.
[3] Air New Zealand Media Release (April 2024). *Mission Next Gen Aircraft: Air New Zealand announces airport selection*. Available here.

buildings already having PV installed and operating. Additional and expanded electricity connections will be needed to support the continued roll out of commercial-scale rooftop solar PV within airport precincts.

12 Air New Zealand has experienced slow, cumbersome and expensive processes when obtaining some electrical connections as part of our decarbonisation projects.

13 At some airports with an embedded networks, it has taken several years from first request for Air New Zealand to obtain an electrical connection needed to charge electric ground service equipment (aircraft tugs, baggage units etc), and provide ground power to aircraft at the gate (allowing aircraft systems to operate with the auxiliary power unit off). The slow process has delayed the realisation of emissions reductions.

14 At another airport, Air New Zealand has deferred investment due to the very high lines charges for an infrequent high load supporting an electrification project. The network company could have installed a smaller transformer and battery at an equivalent cost to a large transformer to provide the same maximum load, but with lower lines charges for the customer. The high lines charges make it harder for the airline to progress similar electrification projects at other locations.

15 Our responses to the consultation documents are outlined in the following paragraphs.

Distribution connection pricing proposed Code amendment

16 Air New Zealand agrees with the current situation and context for connection pricing outlined by the Authority. The Authority should explicitly consider its role aiding the country to reduce emissions to achieve net-zero greenhouse gas emissions by 2050, a target set in law.

17 Air New Zealand agrees with the problem statement and supports the general direction of the Code amendments proposed.

18 Air New Zealand supports a fast-track process as part of the proposed pathway to full reform. Actions and investments in electrification and decarbonisation in the next few years are critical to the trajectory needed to achieve net-zero goals.

19 Air New Zealand considers that the pioneer scheme pricing methodology would improve connection pricing efficiency. We would like to see clarification of whether a first mover capital contribution paid just prior to the commencement of a pioneer scheme under the fast-track process would be eligible for a rebate when subsequent parties connect within the proposed duration from the first contribution. In this context, Air New Zealand supports transition allowances. Without transition allowances, there may be unintended perverse outcomes, including delaying decarbonisation projects until pioneer schemes are fully in place.

20 Air New Zealand does not support all embedded networks being excluded from the proposed fast-track process. Many airports have an embedded network serving multiple different transport sector companies, many of which will be needing new and upgraded connections to decarbonise their transport operations (as described above in paragraph 10) between now and when the Code amendments are in place. Air New Zealand will be one of the companies seeking new and upgraded connections to embedded networks at airports as we introduce our new electric aircraft and expand other decarbonisation initiatives involving electricity. For example, our first electric aircraft will be flying in 2026, which is when the fast-track process is proposed to commence. We consider it critical that the costs of first and subsequent new or upgraded connections at airports are shared fairly between end-users with increasingly large demand footprints to facilitate timely decarbonisation as well as economic productivity.

21 Air New Zealand proposes that embedded networks serving transport hubs (any integrated area with multiple customers operating commercial activities involving transport) should be included in the fast-track process.

Network connections project – stage one

22 Air New Zealand agrees with the connection issues identified by the Authority and that they are worthy of attention.

23 Air New Zealand generally agrees with Proposal B to have different applications processes for connecting medium and large loads. However, the lower threshold of the large load application process is 300kVA which is in the middle of the product range from different suppliers for high-power charging (HPC) Electric Vehicle Supply Equipment (EVSE) ("chargers") using the CCS2 connector standard. For example, this means that at a given location needing a single high-power charger, selecting one brand of EVSE with a 350kW model will result in needing to go through the large load process, while another brand of EVSE with a 300kW model could potentially go through the proposed medium load application process. Both models might otherwise be suitable and competitive for the charging application. A single high-power charge point will be a common first step for many EV charging projects, including for trucks, aircraft and marine vessels, as well as for public charging sites. Further consideration should be given to an appropriate cut-off threshold. A cut-off point in the middle of an existing product range from different suppliers risks creating distortion in the EVSE market, limiting competition, supply and product diversification.

24 CCS2 is the recommended connector standard for new vehicles in New Zealand.[1] The CCS2 connector specifications are standardised by the International Electrotechnical Commission

[1] NZ Transport Agency, Waka Kotahi. Charging point connectors and socket outlets. Accessed 16 December 2024. https://www.nzta.govt.nz/planning-and-investment/planning/transport-planning/planning-for-electric-vehicles/national-guidance-for-public-electric-vehicle-charging-infrastructure/charging-point-connectors-and-socket-outlets/

(IEC) for EVSE and are a maximum of 1,000V DC and a maximum of 500A[1], giving a maximum of 500kVA. Charging being used by Air New Zealand for its initial electric aircraft is up to a maximum of 500kVA.

25 Air New Zealand proposes that the lower threshold of the application process for large loads is at least 500kVA.

26 Air New Zealand agrees with Proposal C that distributors publish, on an ongoing basis, a network connections pipeline for distributed generation and load which lists and prioritises the applications to connect and upgrade. Agreement is on the basis that commercial sensitivity concerns are addressed by the published pipelines not including information about the project owner or the specific location.

27 Air New Zealand agrees with Proposal D to publish more information on network capacity. We note that in the United Kingdom maps identifying where there is spare network capacity available are produced by local electricity networks.[2] As an organisation that operates nationwide with choices about where in the country we might develop electrification projects next, we would value the Authority and networks working towards publishing geospatial information such as capacity maps like those in the United Kingdom for Aotearoa.

28 Air New Zealand agrees with Proposal F to add regulated and prescribed terms for load connections when the applicant and distributor do not enter into a connection contract, and to extend the dispute resolution process in the Code to load applicants.

Conclusion

29 We would be pleased to discuss this submission further with the Authority to aid the development of efficient connection pricing and improving the application process for connecting to networks. Please contact Jacob Snelgrove (jacob.snelgrove@airnz.co.nz) for more information.

Kiri Hannifin
Chief Sustainability and Corporate Affairs Officer

[1] International Electrotechnical Committee. (2022). Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3-1: Vehicle connector, vehicle inlet and cable assembly for DC charging intended to be used with a thermal management system.(IEC TS 62196-3-1:2020). https://webstore.iec.ch/en/publication/59654 *Note: references in the standard for connector type FF are for CCS2.*

[2] For example: Scottish & Southern Electricity Networks. Generation Availability. Accessed on 16 December 2024. https://network-maps.ssen.co.uk/; and Northern Ireland Electricity Networks. Network Capacity Map. Accessed on 16 December 2024. https://www.nienetworks.co.uk/connections/capacity-map.