

BEFORE THE HEARINGS PANEL APPOINTED BY THE
GORE DISTRICT COUNCIL

IN THE MATTER OF of the Resource Management Act 1991 (“the Act”)

AND

IN THE MATTER OF the Proposed Gore District Plan (“PGDP”) Hearing
Stream 7

SUBMITTER PowerNet Limited (S95)

STATEMENT BY MARK ZWIES ON BEHALF OF POWERNET LTD

31 OCTOBER 2024

EXECUTIVE SUMMARY

- 1 PowerNet Limited (**"PowerNet"**) is an electricity distribution business (**"EDB"**).
- 2 Its role is to distribute electricity from grid-exit points that form part of the National Grid and deliver it to customers. This requires operating, maintaining, upgrading and developing an efficient and safe electricity distribution network.
- 3 PowerNet was incorporated in 1993 and has a network management contract with The Power Company Limited (**"TPCL"**) which operates in the Gore District. PowerNet is jointly owned by OJV and The Power Company Ltd. The Power Company Ltd is the disclosing entity for the electricity lines businesses that convey electricity in the Gore District, supplying approximately 6,891 customers. PowerNet (through the contract with TPCL) manages this network in the Gore District.
- 4 PowerNet is continuously maintaining and upgrading the existing network to meet growth demand and the changing needs of customers. The need to protect and enable this infrastructure is a key issue for the district. The provisions of the proposed Gore District Plan (**"PGDP"**) has a considerable influence on how PowerNet delivers this network within the Gore District.
- 5 I am supportive of the relief sought by PowerNet in its submission and in the evidence of Ms Justice. I consider this relief to be important in enabling the continued delivery of a safe, protected, reliable and efficient electricity distribution network for the Gore District's people, businesses and communities.

INTRODUCTION

- 6 My name is Mark Lindsay Dennison Zwies. I am the Engineering Manager (Networks) at PowerNet Limited (**"PowerNet"**) and I have held this role since 2015.
- 7 My experience includes over 20 years' engineering and asset management experience in the New Zealand and Australia electricity transmission and distribution sectors, and over 15 years' experience with the fourth largest electricity distribution network managing its electrical assets.
- 8 In my role as Engineering Manager (Networks), I am responsible for the planning of our electrical networks and determining how we need to invest in

the network to develop, operate, maintain and dispose of the assets to meet the needs of our customers and any new developments that occur within the regions we manage.

- 9 My statement provides an overview of PowerNet's electricity distribution network in Gore District, describes the development plans and obligations PowerNet currently has and discusses key changes sought to the PGDP provisions which are set out in the evidence of Ms Justice.

PowerNet's electricity distribution network in the Gore District

- 10 PowerNet is the equivalent of the fourth largest distribution network company in New Zealand, delivering electricity to around 73,000 consumers, made up of households and businesses. Approximately 6,891 consumers are supplied in the Gore District.
- 11 PowerNet has a sub-transmission network (33kV overhead lines) which conveys electricity to the distribution network in the Gore District as well as connecting the neighbouring districts. The sub-transmission network is depicted in the plan attached as Appendix D to the statement of evidence of Ms Justice.
- 12 For the lower voltage lines, within the rural areas, sections of lines network are predominantly overhead lines due to the low density of customer connections making undergrounding impractical. Industrial loads make up a significant proportion of the load, in particular the Mataura Valley Milk processing factory north of Gore which consumes approximately 30% of Gore District's electrical demand. The remaining load is predominantly farming along with domestic load concentrated in district's towns. The network within the towns (Gore, Matura) are predominantly overhead lines.
- 13 In summary, PowerNet's current electricity subtransmission and distribution network serving the Gore District comprises:
- a) Five zone substations at McNab, North Gore, South Gore, Mataura and Waikaka, where electricity is managed and transformed from sub-transmission voltages (33kV or above) down to lower voltages for distribution;
 - b) Approximately 119.76 km of 33 kV line, which is almost entirely overhead except for a short cable runs at the Grid Exit Points¹ ("**GXPs**") and zone substations and a dual 33kV cable circuit from Gore to the McNab substation.

- c) Approximately 860.5 km of high voltage 11kV overhead lines and underground cables which connect the zone substations with local distribution substations, and kiosks with transformers to distribute the electricity further into local communities;
- d) 2,517 distribution substations/transformers, which in rural areas are typically pole mounted on the overhead network.
- e) Approximately 175.5 km of low voltage overhead lines and underground cables, which along with a variety of ground mounted equipment, including cabinets and boxes, manage the supply of power to individual locations.

Network Development Planning

- 14 As part of its annual asset management planning process, PowerNet monitors the existing network assets and ensures these assets are operating within the limits imposed by capacity constraints and service level requirements. Regular updating of demand forecasts enables predictions for future network operation and the need for network development or expansion. For the management of existing assets, forecast expenditure for maintenance and planned renewal of assets is planned with the objective of keeping the public safe and maintaining the reliable supply of electricity to our zone substations, all while minimising supply interruptions. Because these assets have a typical lifespan of 40-60 years, the assets require ongoing upgrading or replacement works throughout this lifespan.
- 15 In addition to managing the existing network, PowerNet undertakes a detailed planning process to determine the new developments required for the network. This is also set out in the asset management plan. For the most part, development is driven by identified 'triggers' which include changing statutes, changing customer and other stakeholders' demand (which is referred to as growth-based development triggers) or internal strategic initiatives, such as a security standard which drives developments to maintain a certain level of resilience.
- 16 These trigger events may directly dictate a development requirement; for example, a connection request from an intending industrial customer requiring an increase in network capacity to match their additional load requirements. The trigger may also be less direct, for example when load growth exceeds a threshold for increased security of supply. When a trigger event occurs or is predicted to occur, PowerNet will identify a range of options

to bring the asset's operating parameters back to within the acceptable range of capacity and within service level requirements.

- 17 An example of recent development projects that PowerNet has completed in the Gore District is the establishment of 33kV electricity supply infrastructure for the Mataura Valley Milk processing plant at McNab, north of Gore. This infrastructure comprises:
 - a) A substation;
 - b) 14.28 km of 33 kV cable installed in 2018;
 - c) On site Mataura Valley Milk electrical infrastructure.
- 18 PowerNet has also recently completed establishing the infrastructure for Kaiwera Downs Wind Farm. This project comprises 16.4 km of 33kV sub-transmission line with sections of 33kV cable from Gore to the Wind Farm.
- 19 In addition to customer demand pressures, other influences that can trigger the need for upgrade or new development works include:
 - a) The gradual elimination of coal as a heating source and replacing this with electricity;
 - b) The wider range in weather variations forecast has a potential impact on demand, in particular, these events can increase peak demand;
 - c) Major industry continuation or growth has a marked load change in isolated locations, such as milk processing plants;
 - d) The increasing use of electric vehicles is expected to see some demand growth.

Importance of Electricity Sub-Transmission Infrastructure

- 20 The electricity subtransmission infrastructure is the backbone of the electricity distribution network, underpinning network capacity and transporting electricity between zone substations for distribution around the Gore District. It is critically important to Gore's electricity network.
- 21 Within the Gore District, the subtransmission lines operate at 33kV, and it includes 119.8 km of lines infrastructure. This network is depicted in the plan attached as Appendix D to Ms Justice's evidence. It is critically important that the subtransmission lines are able to operate safely and efficiently. A failure

of the subtransmission network can affect several zone substations, and therefore result in a power outage for a large number of customers. Therefore, recognising the importance of this infrastructure to the community by identifying this network in the PGDP planning maps, and including provisions that protect and provide for this infrastructure is appropriate, in my view.

Height of Support Poles

- 22 PowerNet's submission sought that the maximum height limit for support poles be increased from 13m to 16m in zones other than the Rural and Industrial Zones. I acknowledge that support poles up to 25m are provided for in the Rural and Industrial Zones, which I consider to be appropriate from a technical point of view.
- 23 For cost efficiency and environmental purposes, PowerNet would seek to install the lowest/smallest support pole necessary when installing a new overhead lines network. So, for the most part, a 13m high pole would be sufficient. However, there are some situations where a higher pole is necessary, and therefore having the ability to install a pole up to 16m high in the Field Days and Camp Columba Zones, and for replacement poles in all zones except where the 25m height limit applies will enable PowerNet to maintain and develop its network in a more efficient manner.
- 24 Examples where a 16m high support pole may be required include:
 - a) Where a longer span between poles is required (such as across a river or across rail or road corridor) to ensure the height of the line between the poles can achieve the required clearance distances from the ground or waterway as set out in NZECP 34 and AS/NZS 7000.
 - b) Larger clearances are required for higher voltages such as 66kV or 110kV lines. When larger energy loads or generation is required, higher voltages are required to efficiently deliver the high amounts of energy. This can increase the height required for structures up to 16m.

Conclusion

- 25 PowerNet continues to see considerable growth across much of its electricity distribution network in the Gore District and in the Southland region. Safeguarding the existing subtransmission network to ensure security of supply and supplying new developments with electricity is PowerNet's

primary role. Ensuring works on the network can be carried out in a timely and efficient manner is necessary to perform this role. Having provisions in the PGDP that recognise the importance of this infrastructure and that manage activities which may impact on PowerNet's ability to carry out its functions will assist PowerNet with achieving its function of supplying electricity to the Gore community.

Dated Thursday 31 October 2024

Mark Zwies